Psychological ill-being in athletes: The role of perfectionism within the football environment

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Abstract

Athletes are frequently reporting psychological ill-being including serious mental health issues such as depression. Research, then, has an important role in developing our understanding of psychological ill-being in athletes to help towards establishing preventative and intervening strategies. Therefore, the purpose of this thesis was to investigate potential correlates and antecedents of ill-being in athletes. In line with this aim, the first study presented a comprehensive systematic review of 59 studies that had examined depression in athletes. Prevalence of depression was varied (i.e., 11%-58% symptoms; 4%-34% clinical), correlates/risk factors were also identified (i.e., socio-demographic, life events, performance and career satisfaction, individual differences, interpersonal relationships and support, well-being and ill-being), and few studies had examined moderators of depression. Perfectionism was among the correlates identified and subsequently became the focus of this thesis in the context of football. The second study investigated the relationship between perfectionism, burnout and depression in youth footballers over three months. Findings revealed that socially prescribed perfectionism (SPP) had a reciprocal relationship with burnout symptoms, and depressive symptoms predicted SPP. The third study sought to establish whether the coach-created climate moderated the perfectionism – ill-being relationship. Findings revealed that a disempowering climate exacerbated reduced sense of accomplishment in youth footballers exhibiting high levels of SPP and self-oriented perfectionism (SOP). In the final study, qualitative methods were used to explore former professional footballer's perceptions of being a perfectionist and how, in their view, it influenced their lives during their career. Findings illuminated the multidimensional nature of perfectionism and the football environment was thought to influence perfectionistic tendencies. In addition, findings similarly aligned with the concept of perfectionistic reactivity as participants discussed psychological, social and physical responses during

times of challenge and adversity. Collectively, these studies suggest that perfectionism can be a vulnerability factor for ill-being in athletes. However, this relationship is complex with the situational context being especially important in understanding this relationship.

Table of Contents

List of Tables

List of Figures

Chapter 1 – Introduction to the thesis

For many countries around the world sport is considered to be a valued part of society. Roberts (2016) suggests that "sport has a multitude of vocal supporters and hardly any visible opposition" (p.22). This is evidenced in a number of ways from the politicians and government that position their view of sport to be an important part of our culture, to the daily promotion of sport in the mass media, to the passionate members of sporting associations that are advocates for their activities (Roberts, 2016). As such, one only has to view the significance placed on international events such as the Olympics and the enthusiasm it generates for increasing participation in sport, particularly amongst young people. The emphasis placed on encouraging young people to take part is consistent with the view that participating in sport may lead to a number of positive short-term and long-term, physical, social and psychological outcomes.

Engaging in regular sport offers a number of benefits. For example, it affords the opportunity to enhance physical health. Taking part in physical activity such as sport can improve motor skill proficiency, physical fitness (e.g., aerobic fitness and muscular strength) and reduces adiposity (Malina, 2011). It can also improve skeletal health (e.g., bone mineral density), cardiovascular health (e.g., low blood pressure) and metabolic health (e.g., reduced insulin) (Malina, 2011). From a public health perspective, this is a key priority as sedentary behaviour and low level physical activity can have a detrimental impact on society. Particularly, as it can result in avoidable diseases (e.g., diabetes and cardiovascular disease) and premature death (Reiner, Niermann, Jekauc, & Woll, 2013).

Engaging in sport may also increase positive youth development. That is, sport is a tool to develop young people for their future. There has been considerable empirical support that has highlighted the importance of sport as a vehicle for developing psychosocial skills (Eime, Young, Harvey, Charity, & Pain, 2013). For example,

building relationships with others, promoting prosocial behaviours, and instilling leadership competency are all associated with youth sport participation (e.g., Wiersma & Fifer, 2008). There is also the potential to establish transferable life skills to deal with the demands and challenges of everyday life (Theokas, Danish, Hodge, Heke, & Forneris, 2007). Further, positive sport experiences in youth can also lead to lifelong participation (Green, 2010).

In addition to developing psychosocial skills, participating in sport may also improve psychological well-being and mental health. Regularly engaging in sport can bring a great source of enjoyment (McCarthy, Jones, & Clark-Carter, 2008). Participating in sport can also help develop athlete's emotional control so that they are equipped to deal with challenges (Eime et al., 2013). Well-being is also enhanced in a supportive environment whereby athlete's psychological needs are satisfied (e.g., Adie, Duda, & Ntoumanis, 2012). Further, regularly taking part in sport and physical activity may boost self-esteem, self-efficacy, and life satisfaction from a sense of mastery (Biddle & Asare, 2011; Biddle, Mutrie, & Gorely, 2015).

Participating in sport may also reduce psychological ill-being. Engaging in regular sport and physical activity has been found to reduce emotional distress, anxiety, depression, and suicide ideation (Biddle & Asare, 2011; Eime et al., 2013). Biddle et al. (2015) suggests that there may be a number of reasons why this occurs. Taking part in sport may be a distraction from stress in other aspects of life and it encourages social interaction reducing isolation. There may also be biological changes that improve one's mood (i.e., serotonergic changes in the brain associated with mental disorders such as depression). Thus, it appears that participating in sport provides the opportunity to improve well-being and decrease the likelihood of experiencing ill-being.

1.1 Psychological well-being and psychological ill-being

Psychological well-being and psychological ill-being has become an important focus for researchers, practitioners and policy makers, given its important influence on ones quality of life. Psychological well-being is a combination of feeling good and functioning effectively (Huppert, 2009). Experiencing and managing negative emotions is a normal part of life for sustainable well-being. Psychological well-being is also considered to be synonymous with "mental health". The World Health Organisation (2001) has defined mental health as "a state of well-being in which the individual realises his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (p.1).

Modern conceptualisations of psychological well-being are considered to be multidimensional (Diener & Tov, 2012). Psychological well-being is inclusive of both hedonic and eudaimonic elements. Hedonic well-being is traditionally referred to as subjective well-being and is centred on experiencing a pleasant life (e.g., positive emotions, life satisfaction) (Deci & Ryan, 2008). Eudaimonic well-being is centred on having a fulfilling life not just a pleasant one (e.g., self-acceptance and personal growth) (Deci & Ryan, 2008). There is debate amongst researchers regarding whether hedonic well-being and eudaimonic well-being can be conceptually and empirically independent. Waterman (2008) suggests that hedonic well-being and eudaimonic well-being co-occur and the conditions causing one are simultaneously causing another. For example, it is pleasant and emotionally satisfying to have a meaningful and self-actualising life.

Psychological ill-being, then, is not merely the absence of well-being but the presence of psychological dysfunction (Stebbings, Taylor, Spray, & Ntoumanis, 2012). However, psychological ill-being differs in meaning from mental illness or mental

disorders. Mental illness/disorders derive from psychiatry and have clinical significance (e.g., manic depressive disorder, bipolar disorder, schizophrenia and personality disorder). The Diagnostic and Statistical Manual of Mental Disorders (*DSM*-5: American Psychiatric Association, 2013) defined mental disorders as "a syndrome characterised by clinically significant disturbance in an individual's cognition, emotion regulation, or behaviour that reflects a dysfunction in the psychological, biological, or developmental processes underlying mental functioning". Instead, psychological ill-being reflects the broader nature of psychological dysfunction and can reflect vulnerability to mental health disorders (Clow & Edmunds, 2013; Ryff et al., 2006)

It is suggested that psychological ill-being and psychological well-being should be distinguished (Ryff et al., 2006). They are independent dimensions of psychological functioning and have individual composite factors that contribute to each dimension (Stebbings, Taylor, & Spray, 2015). From the hedonic perspective, psychological ill-being has typically been reflected in the manifestation of negative affect such as depressive symptoms (Stebbings et al., 2015). Psychological ill-being can also be considered from a eudaimonic perspective. As such, individuals must feel that they are engaging in activities that they believe are worthwhile and in line with their values (Deci & Ryan, 2008). Therefore concepts such as devaluation of the activity (i.e., burnout) represent this sense of detachment from an activity.

1.2 Psychological ill-being in athletes

While sport can lead to positive outcomes such as improving one's well-being and reducing ill-being, this is not the case for everyone. Some athletes may be susceptible to ill-being as a result of the pressures they face. The reality of being an athlete may often be taken for granted regarding the amount of time, effort and commitment that is required. Athletes may restrict their involvement in other life

domains and activities in their pursuit to retain athletic status (Stephan & Brewer, 2007). They must be willing to dedicate their lives to their sport and maintain peak physical and psychological condition (Durand-Bush & Salmela, 2002; Holt & Dunn, 2004). Athletes must also cope with challenges and setbacks such as expectations to perform, acquiring injuries and the inevitable career termination (Mellalieu, Neil, Hanton, & Fletcher, 2009; Samuel & Tenenbaum, 2011).

Perhaps in response to these demands, athletes are reporting psychological dysfunction more frequently. Many athletes are anecdotally revealing ill-being, including serious mental illnesses such as depression, eating disorders and suicide ideation. Specifically, high profile athletes have begun to openly discuss their experiences of ill-being in the media. In one example, Olympic hurdler and sprinter Colin Jackson discussed his experiences of suffering from an eating disorder during his career. He said, "I was never happy with how I looked... I was comparing myself to my other running colleagues…I thought the only way I could make this right is by getting really lean and really dieting down" (ITV, April, 2017). In another example, former England cricketer Jonathan Trott disclosed that he suffered from burnout when playing in the Ashes in 2014. He decided to return home early from the Ashes and said, "I just couldn't watch the ball as hard as I normally do. It just wasn't there for some reason, whether I was thinking too much about cricket off the field and burning myself out that way, or just trying too hard" (Sky Sports, March, 2014).

Depression has received a substantial amount of attention in the media. Many high profile athletes from a variety of sports have spoken out about their battle with depression such as cyclist Victoria Pendleton, tennis player Serena Williams, cricketer Marcus Trethscothic, boxer Tyson Fury, swimmer Michael Jamieson, footballer Stan Collymore, runner Kelly Holmes and many more. These athletes have discussed a number of reasons that may explain the development of their depression. For Kelly Holmes it was a "combination of not wanting to go through all the pressures and strains

of being injured and wanting to achieve the best I could as an athlete" (BBC, March, 2006). Depression can also lead to devastating consequences such as suicide. During a bout of depression whilst suffering an injury, professional footballer Clarke Carlisle attempted suicide. He said in a BBC documentary (July, 2013), "my irrational mind had made me think suicide was a rational action" as he believed that he was "no use to anyone."

Athletes openly discussing their own experiences of suffering from ill-being have helped to reduce the stigma that is often attached to ill-being. That is, the negative attitude (e.g., misinformation or prejudice) towards those experiencing ill-being (Sartorius, 2007). Consequently, a sense of stigma associated with mental health may prevent athletes from seeking the support they need. This can be driven by many factors such as sport organisations motivated to be profitable and successful, athletes expected to be successful by others and the consequences if they are not, and media outlets that glorify successful athletes and criticise unsuccessful athletes (Bauman, 2015). Therefore, awareness of stigmatisation and the emphasis on 'normalising' discussions about psychological dysfunction (e.g., through national campaigns and key figures speaking out) has been critical towards generating positive action.

This recognition of athlete vulnerability to ill-being is reflected in some key organisations taking an active role in preventing and managing ill-being. For example, the National Collegiate Athletics Association in the US (NCAA) recognises that student-athletes have to contend with additional responsibilities in comparison to their non-athlete counterparts. The NCAA acknowledges their commitment to tackling ill-being and they direct individuals to support networks (e.g., e-books, websites and support lines). Similarly, in the UK the charity Mind provides information on mental health issues in elite sport and is working in partnership with some national governing bodies. Mind addresses the stigma attached to mental health and identifies some potential causes (e.g., expectations and retiring). They also provide insight on ill-being

in different sports (rugby, football, cricket and individual sports) and direct individuals on where to access support.

Research has an important role in developing a comprehensive understanding of ill-being in athletes. Research provides the potential to advance our understanding of risk factors. Such research is also required so to develop evidence based interventions and models of care. Such understanding is paramount so to inform key stakeholders such as governing bodies, coaches, medical staff, and parents of how best to support their athletes. Although there is a developing research base investigating ill-being in athletes, the predominant focus has been on investigating physical activity and sport activities as an approach to reduce depression and other indicators of ill-being and improve well-being (Faulkner & Tamminen, 2016). As such, less emphasis has been placed on investigating the psychological dysfunction of athletes. In particular, examining the reasons why athletes are vulnerable to ill-being.

In summary, there is an increasing awareness that athletes may be vulnerable to ill-being. This awareness is demonstrated through athletes anecdotally discussing their own experiences of managing ill-being. In addition, relevant organisations are beginning to take positive action towards reducing stigma and providing support. From a research perspective, it is important to establish the predominance of ill-being and possible risk factors of ill-being among athletes, which may contribute to the development of preventative and intervening strategies. Through demonstrating what we currently know about ill-being this may highlight areas of development and indicate possible vulnerability factors.

1.3 Athlete burnout

One area that has received attention in sport psychology is athlete burnout. Burnout originally emerged from organisational psychology in which individuals

described exhaustion and lack of motivation at work (Bradley, 1969; Freudenberger, 1974). Maslach and Jackson (1981, 1986) were the first to give burnout its theoretical basis and identify it as a psychological syndrome. They defined burnout as a "syndrome of emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment" (1986, p.1) and subsequently developed the burnout inventory (MBI). In recognising the transferability of burnout and acknowledging the contextual differences, Raedeke (1997) was the first to popularise and empirically develop burnout in sport psychology.

Athlete burnout is characterised by three core symptoms: a reduced sense of accomplishment, physical and emotional exhaustion, and sport devaluation (Raedeke, 1997; Raedeke & Smith, 2001). A reduced sense of accomplishment is an athlete's perception of inadequate sporting abilities and achievement. This symptom similarly corresponds with that of Maslach and Jackson's (1981) conceptualisation of reduced sense of personal accomplishment. That is, individuals perceive themselves to be ineffective when working with clients and feel dissatisfied with their performance in their jobs. However, in sport, athletes come to believe that they are unable to reach their goals or are consistently performing below their capabilities, regardless of objective success (Raedeke, 1997; Raedeke & Smith, 2001).

Physical and emotional exhaustion is the depletion of resources beyond what would be expected from the typical demands of routine activities. Athletes feel drained from participation and have difficulty recovering a sense of vitality (Raedeke, 1997; Raedeke & Smith, 2001). In a similar way to emotional exhaustion described by Maslach and Jackson (1981), it is the depletion of emotional resources. However, the emotional demands of managing and working with difficult clients in human services are different to the emotional demands experienced by athletes. In addition, given the physicality of training and competition, physical exhaustion was also included alongside emotional exhaustion (Radeke, 1997; Raedeke & Smith, 2001).

Finally, sport devaluation is an athlete's diminished personal interest in their sport participation and their performance. While initially athletes may have enjoyed participation, athletes develop resentment towards their sport and they adopt a cynical attitude and consequently may drop out of sport (Radeke, 1997; Raedeke & Smith, 2001). This symptom differs to depersonalisation identified by Maslach and Jackson (1981). Raedeke (1997) contended that depersonalisation had little relevance to sport as it described negative attitudes and cynicism towards recipients of their services. While sport devaluation still captures cynicism, it represents an athlete's negative attitude towards their sport involvement. Consequently, the re-conceptualisation of the three symptoms of athlete burnout led to the development of Athlete Burnout Questionnaire (ABQ: Raedeke & Smith, 2001).

Although the three-dimensional construct of burnout is the one of the most prominent and favoured approaches to burnout, it has received some critique. First, current empirical evidence has not identified how the three dimensions are temporally associated (i.e., develops in parallel or stages) (Lundkvist et al., 2017). Second, it is suggested that the three dimensions were not developed from theory or clinical observation, rather the construct was empirically developed (Gustafsson, Lundkvist, Podlog, & Lundkivist, 2016; Shirom & Melamed, 2006). In addition, there have been questions surrounding why the three dimensions are often combined into one dimension (i.e., total burnout), which is yet to be theoretically addressed (Gustafsson et al., 2016; Shirom & Melamed, 2006). Thus, to understand the theoretical underpinnings of burnout a number of models have been proposed. These models have identified potential antecedents and psychological mechanisms that may explain the development of athlete burnout from differing perspectives. These models are described next.

In the Negative-Training Stress Response Model (Silva, 1990) it was suggested that burnout was stress induced. Specifically, Silva indicated that it is overtraining and inadequate rest that predispose an athlete to burnout. Although positive adaption to

physical training may occur, overtraining can deplete the body's response system leading to burnout. As a result, it was suggested that withdrawal from sport is inevitable. However, this suggestion of withdrawal has received criticism from others who contend that this is not always the case (Raedeke, 1997; Cresswell & Eklund, 2007). Cresswell and Eklund (2006) also contended that the model describes consequences rather than key characteristics of burnout. As such, there is some empirical support that has demonstrated the relationship between overtraining and burnout (e.g., Lemyre, Roberts, & Stray-Gundersen, 2007). Moreover, tenets of this model have been used in the development of more recent models that seek to distinguish overtraining from burnout (e.g., stress-recovery: Kallus & Kellman, 2000; failure-adaption: Tenenbaum, Jones, Kitsantas, Sacks, & Berwick, 2004).

In the Unidimensional Identity Development and External Control model (Coakley, 1992) the focus was on the social environment leading to the development of burnout rather than stress. Instead, Coakley proposed that stress is an outcome or symptom of burnout. In this model it is suggested that it is the way sport is structured that inhibits personal control and decision-making. As a result, this process restricts an athlete's identity as the sole focus is on success and achievement in sport (e.g., no time to participate in non-sport activities). This leads to stress, particularly when setbacks occur (e.g., injury) and eventual burnout. Although this model has received some support (e.g., Black & Smith, 2007), the model was developed from interviews with 15 young athletes who had discontinued participation in sport. Consequently, the conceptualisation of burnout was unclear as the sample was limited and convenience based (Gould, Udry, Tuffey, & Loehr, 1996a; Gustafsson, Kentta, & Hassmen, 2011).

The Sport Commitment Model (Schmidt & Stein, 1991; Raedeke, 1997) proposes that commitment may be an integral motivational factor in the development of burnout. That is, athletes with entrapment-based commitment perceive that they have to continue to participate in sport (i.e., if sport is no longer intrinsically rewarding), which

elevates the risk of athlete experiencing burnout. In comparison, those with attraction-based commitment (participation intrinsically rewarding and satisfaction with involvement) and low commitment (no desire to prolong engagement to sport) are less likely to experience burnout. There is some empirical support for the model whereby entrapment-based commitment was positively associated with burnout symptoms (e.g., Raedeke, 2004). However, it is unclear if entrapment-based commitment is an antecedent or develops as a result of burnout (Eklund & Cresswell, 2007).

An athlete's motivation and the development of burnout may also be explained by the Self-Determination Theory (SDT). SDT posits that frustration of psychological needs (autonomy, relatedness and competence) may lead to burnout (Ryan & Deci, 2000). From this perspective, athletes may be vulnerable to experiencing burnout when psychological needs are thwarted rather than being satisfied. Specifically, burnout may occur as a result of either low levels of intrinsic motivation or high levels of amotivation (Cresswell & Eklund, 2005a). There is some empirical support for this explanation which has demonstrated a negative relationship between basic psychological needs satisfaction and burnout in athletes (e.g., Hodge, Lonsdale, & Ng, 2008). As highlighted in other models, the relationship between motivation from an SDT perspective and burnout is unclear and may be a consequence rather than an antecedent (Eklund & Cresswell, 2007).

In an attempt to unify and bring clarity to the development of burnout, Gustafsson et al. (2011) proposed an integrative model of burnout. They proposed that antecedents (e.g., negative performance demands), entrapment (e.g., narrow athletic identity) and vulnerability factors (e.g., maladaptive personality traits) are all contributory factors to developing burnout. In their model, Gustafsson and colleagues acknowledged early signs of burnout such as mood disturbance and performance decrements. In addition, there is also identification of possible long-term consequences such as physical illness and withdrawal. The multifaceted nature of this model reflects

the development in the theory and research. However, without longitudinal research the direction and causality of the relationship between these factors and burnout is still unclear and requires further investigation.

Although there have been a number of proposed models, the most popular and well supported is Smith's (1986) cognitive-affective model. Smith proposed a stress-based model of burnout in sport. Therein, burnout parallels the stress process and is evident in four stages. The relationships between the stages are reciprocal. The first stage is the situational demand such as excessive expectations from important others. The second stage is cognitive appraisal of whether the athlete has the resources necessary to manage the perceived demands. In the third stage if the athlete perceives the situation as threatening they may experience physiological responses (e.g., anxiety). Finally, the fourth stage is the behavioural response of the athlete in relation to coping and the task at hand (e.g., decreased performance).

Personality and motivational factors are considered to be important in the stress and burnout process in Smith's (1986) model. Particularly as these factors frame cognitive appraisal and give personal meaning to the consequences of coping with, or failing to cope with, situational demands. Specifically, personality factors that heighten an individual's experience of stress and changes in one's motivation to participate may increase the risk of burnout. Ultimately, in this model, burnout develops as a result of perceived overload in this process whereby one's resources are continually appraised as insufficient to meet perceived demands in personally meaningful contexts. However, not all athletes that experience stress will develop burnout (Gustafsson et al., 2011; Raedeke, 1997). There are a number of studies that support this stress-based approach to burnout. This support also extends to those studies that have examined aspects of personality and motivation that contribute to the development of burnout (e.g., Hill 2013; Smith, Gustafsson, & Hassmen, 2010).

Athlete burnout has been examined extensively in sport. Goodger, Gorely, Lavallee and Harwood (2007) conducted a systematic review on burnout research in sport. In total, they examined 58 published studies, of which 27 were focused on athletes. They found that an athlete's type of motivation (amotivation), ability to cope with adversity (anxiety and stress), training load, responses to training and recovery (mood disturbance), and a high athletic identity were all related to burnout symptoms. Subsequent research has examined other factors such as the motivational climate (e.g., ego-involving climate; Smith et al., 2010), personality characteristics (e.g., perfectionism; Hill, 2013), and other perceptions of the environment (e.g., organisational stress; Tabei, Fletcher, & Goodger, 2012) and have found support for consideration of a wide array of possible antecedents. As a consequence of this research, we can understand burnout as related to a mix of personality, motivational, and stress-related factors.

1.4 Depression

Depression is another ill-being outcome that appears to be prevalent among athletes. However unlike burnout, little is known about the manifestation of depression in sport psychology. In addition, ambiguity regarding the degree of responsibility from both a researcher and practitioner perspective may exist due to the clinical roots of depression (Cogan, 2000). Clinical depression is recognised as a mood disorder and it was the development of the Diagnostic and Statistical Manuel of Mental Disorders (*DSM*: American Psychiatric Society) which led to the formal classification of mental disorders (Dziegielewski, 2010). The *DSM-III* (1980) first introduced a symptomatic and time-based criterion to diagnose depression. This development arose from a lack of definitive theory and conflicting empirical findings and has succeeded in providing a

standard of measurement that is universally adopted in psychiatry (Horwitz, Wakefield, & Lorenzo-Luaces, 2016).

Depression is broadly defined as the lowering of an individual's mood characterised by a state of sadness (Ingram, Scott & Hamill, 2009). It can be chronic, recurrent and seriously impact on quality of life (Caliyurt, 2008). Clinical depression, also known as major depressive disorder or unipolar depression, is a pathological syndrome which can last a minimum of two weeks or longer (Dobson & Dozois, 2011). The development of depression is signalled by depressive symptoms. According to the *DSM-5* (2013), symptoms include loss of interest and pleasure in activities, feelings of guilt and self-blame, decreased concentration, fatigue or loss of energy, disturbed sleep and changes in appetite/weight. The experience of depressive symptoms may last anywhere between a few weeks to years and their severity is associated with greater maladjustment (Dobson & Dozois, 2011).

Although the *DSM* has provided guidelines on the symptomology and diagnosis of depressive disorders, it is important to recognise that depression may take various forms. Depression is a broad term and can be understood as a temporary state of dejection and feelings of sadness to more moderate experiences of dysfunction, to clinical forms of depression (Dobson & Dozois, 2011). The *DSM* has been critiqued as some have contended that it may not adequately differentiate between clinical and non-clinical forms of depression and could lead to a misdiagnosis of the disorder. Specifically, Wakefield (2010) has indicated that false positives may be common in psychiatry. False positives occur when on the basis of using symptom based diagnosis, depressive disorder is incorrectly diagnosed when this is not the case. Similarly, Patten (2008) acknowledges that when depression occurs due to life stressors, *DSM* criteria cannot adequately distinguish between depressive disorder and depressive mood state.

The *DSM* overlooks contextual factors in establishing why depression develops and under what circumstances it is maintained (Horwitz et al., 2016). With this in mind,

it is important to reflect on the depressed individuals context to consider what is going on in their environment, the meaning of their circumstances (i.e., the way circumstances are interpreted), and whether their symptomatic responses are 'normal' within that context (Wakefield, 2010). Considering the adaptive functionality of depression is also suggested to help distinguish between depressive disorder and depressive mood states. That is, depression may be an evolutionary response to protect oneself from harm or danger (i.e., allostasis; Patten, 2008). Thus, the *DSM* and its symptomatic focus of depression may misrepresent diagnosis as it ignores allied disciplines such as social and cultural factors that may be valuable in understanding depression (Castiglioni & Laudisa, 2014).

There are a number of proposed theoretical models that provide alternative perspectives in understanding depression. These models have considered the biological, social and psychological antecedents and mechanisms in the development of depression. Biological models have typically focused on genetic vulnerability. Specifically, the genetic vulnerability-stress hypothesis suggests that possessing specific candidate genes may predispose individuals to depression when experiencing stress (Ingram, 2009). For example, research has identified that individuals with allelic variation in the serotonin transporter gene 5-HTTLPR may be vulnerable to depression when encountering a stressful situation (e.g., Caspi et al., 2003).

A group of biological models have also indicated that sleep dysregulation is another vulnerability factor. These models suggest that depression occurs from an imbalance between the circadian rhythm that regulates temperature, cortisol, and rapid eye movement (REM) sleep and the sleep-wake rhythm (Dobson & Dozois, 2012). One model posits that depression occurs when awakening from sleep during sensitive phases of the circadian cycles (Koenigsberg et al., 2004). Another model posits that increased REM sleep leads to depression (i.e., it is depressogenic) (Wirz-Justice, 2006). A final model suggests that changes in social rhythms such as changes in one's daily routines

impact on physiological rhythms (e.g., normal sleep regulation) (Ehlers, Frank, & Kupfer, 1988). There has been some empirical support for certain aspects of these models, particularly when there is disruption in the normal regulation of human functioning (Dobson & Dozois, 2011).

There are also a number of psycho-social models of depression. Life events (changes in the external environment; Paykel & Cooper, 1992) are often suggested to be important in the development of depression. In early research, the relationship between negative life events leading to depression appeared to be unequivocal. However, it is important to note that not all individuals that experience negative life events develop depression (Ingram et al., 2009). The stress exposure model of depression is suggested as one prominent explanation for increased vulnerability to depression when exposed to negative life events (Paykel, 2003). That is, the way life events are perceived and responded to may create stress and subsequent vulnerability to depression (Ingram, 2009). More recently, there have been developments that suggest that the relationship is reciprocal. Specifically, the stress generation model posits that depressions can also influence and generate perceived stress of future life events (Hammen, 1991). Thus, examining relevant predictors and moderators may improve our understanding of these relationships. For example, personality characteristics such as neuroticism and perfectionism have been suggested as possible factors in the precipitation of stress (Liu & Alloy, 2011).

Behavioural models of depression have typically focused on the interpersonal behaviours of the individual. A notable model by Lewinsohn (1974) proposed that depression arises as a result of a low rate of response-contingent positive reinforcement. Specifically, when an individual initiates a behavioural response (e.g., initiating a conversation) and fails to receive positive reinforcement then they will be less likely to engage in these responses. Consequently, the loss of these responses leads to a lack of pleasure and vulnerability to depression. In addition, Lewinsohn identified that those

suffering from depression may have insufficient social skills inhibiting the reinforcing properties of relationships with others. There has been some support for the basic tenets of this model, particularly in relations to an individual's social skills (e.g., Segrin & Abramson, 1994).

Coyne (1976) proposed a model of depression from another interpersonal behavioural perspective, focusing specifically on the responses of the social environment. In this way, Coyne's model complements the work of Lewinsohn (1974). This model proposed that individuals vulnerable to depression or displaying depressive symptoms, as a result of the occurrence of stressful life events, behave in ways that are irritating or frustrating to others through excessive reassurance seeking. In turn, others withdraw their support and may be less willing to provide support. Consequently, the individual perceives social rejection and this may further impact on one's depression. There has been some support for this model particularly when identifying that depressed individuals receive less social support than non-depressed individuals (Lakey & Cronin, 2011).

Cognitive models of depression indicate that an individual's thoughts may predispose them to depression. Abramson, Seligman and Teasdale (1978) proposed the theory of learned helplessness. This model suggests that those most susceptible to depression are more likely to have a negative attributional style. That is, they attribute failure to internal, stable and global attributions (e.g., I failed the test because I am stupid). As a result, the individual perceives that they are unable to change their situation and this predisposes them to depression (Abramson et al., 1978). This attributional model has received substantial empirical support in precipitating depression with respect to having a negative attributional style (e.g., Alloy et al., 2006).

Another cognitive model that has been well received is Beck's cognitive theory of depression (Beck, 1967; Beck, Epstein, & Harrison 1983). Beck referred to the cognitive triad which is the self-schema that underpin ones beliefs. Specifically,

negative beliefs are ingrained in one's mind and represent the perspectives and attitudes regarding the self (e.g., "I'm worthless"), the world ("nobody values me") and the future (e.g., "things can only get worse"). Beck also suggests that depression will likely develop if one has cognitive distortions such as all-or-nothing thinking, catastrophising and overgeneralistion pertaining to specific life events. A fundamental aspect of Beck's model proposed that depressive schemata may not be activated until stressful life events are encountered. Some elements of Beck's model have been well-supported. For example, individuals that demonstrate a negative self-schema and are exposed to stress indicate a vulnerability to depression (e.g., Scher, Ingram, & Segal, 2005).

Although these models have provided much insight into depression, in recent years models of depression have become increasingly integrative (Ingram et al., 2009). In one of the most current models, Beck and Bredemeier (2016) integrate clinical, cognitive, neurobiological and evolutionary perspectives. In this model, negative cognitive biases and biological stress reactivity provide the basis for negative beliefs. These depressogenic beliefs provide vulnerability to depression and may also be underpinned by early experiences (i.e., trauma) and genetic risk. However, it is only when negative life events or chronic stressors are appraised to have resulted in the loss of a vital resource (i.e., a resource important to the attainment of basic goals and needs such as meaningful relationships with others) then a "depression programme" is triggered.

The depression programme instigates emotions and behaviours characteristic of depression (e.g., sadness and withdrawal) and is viewed as an attempt to conserve energy following the loss of the vital resource. That is, the depression programme is considered to be an evolutionary based reaction. Unfortunately, the depressive programme is also thought to reinforce depressogenic beliefs and bring about neurobiological changes that increase risk of future depression over time (Beck & Bredemeier, 2016). This movement towards an integrative model has been well-

received. Particularly as developments in research over the past 50 years have highlighted the multifactorial elements that contribute to depression.

Unlike the models of athlete burnout, models of depression are not specific to the sport domain. Consequently, theoretical developments of depression in sport are in their infancy. However, with the developing interest and acknowledgment that athletes may be vulnerable to depression, there have been recent attempts to summarise the current research to identify possible risk factors. Some of these factors are directly related to features of the sport domain such as poor performance, injuries, overtraining and involuntary career termination. Other factors are more general and applicable beyond the sport domain such as life events, social support, unhelpful coping strategies, and various personality traits (Frank, Nixdorf, & Beckmann, 2015; Rice et al., 2016; Wolanin, Gross, & Hong, 2015). Similar to burnout, then, research suggests that depression among athletes may manifest due to unfavourable environmental conditions provided by sport or life more generally, as well as the individual characteristics of the athletes.

1.5 Burnout and depression: Considering the overlap

The relationship between burnout and depression continues to be widely debated amongst researchers. This is because the constructs are similar and interest has naturally led to researchers questioning whether burnout and depression are manifestations of the same phenomena or two distinct constructs of ill-being (Ahola & Hakanen, 2014). In a recent systematic review by Bianchi, Schonfeld, and Laurent (2015), they sought to investigate the conceptual and empirical overlap of burnout and depression. They examined 92 studies and found that burnout and depression are highly correlated and the two constructs are conceptually and empirically precarious. In particular, the review indicated that it was unclear how the

end stage of burnout differs from clinical depression. Despite these issues, the authors did find evidence of two distinct constructs when examining the factor analyses.

The review by Bianchi et al. (2015) demonstrates the similarity and complexity of these constructs. Ahola and Hakenen (2014) have suggested that overlap will typically occur between burnout and depression due to the similarity in some symptoms such as fatigue, loss of pleasure in activities, low self-esteem, and negative attitude. Although this overlap exists, one of the main theoretical arguments for distinguishing between the two constructs relates to the context. That is, burnout appears to develop because of the demands of one's context whereas depression is considered to be context free and more pervasive (Maslach, Schaufeli, & Leiter, 2001). For example, an individual may be burned out at work but may be able to function effectively in other life domains. However, if an individual is depressed it would consume their life irrespective of the domain (Freudenberger & Richelson, 1980).

1.6 Aims of the thesis

The broad aim of this thesis is to investigate potential correlates and antecedents of psychological ill-being in athletes.

In line with this broad aim, the first study of this thesis will present a comprehensive systematic review of the quantitative research that has examined depression in athletes. Anecdotally, it appears that athletes may be vulnerable to depression as a consequence of their circumstances such as pressure to perform. Thus, research is important to establish the predominance of depression and its possible risk factors among athletes. However, at present, little is known about the development of depression in comparison to our understanding of other ill-being outcomes in sport.

Therefore, this review will examine the recorded prevalence, identify psychosocial correlates and risk factors, and identify possible moderators of depression in athletes.

The second study of this thesis will examine the relationship between perfectionism and athlete ill-being over time in youth football players. This will be investigated by conducting a longitudinal survey based design to examine the relationship between perfectionism and burnout symptoms and depressive symptoms over a three month period in youth football players. The dominant model in the perfectionism research has been the vulnerability model (perfectionism as a predictor of ill-being). However, the testing of other models may provide additional insight into this relationship. Specifically, three models (vulnerability model, complication/scar model and reciprocal relations model) will be tested to examine the direction of the personality – ill-being relationship.

The third study of this thesis will investigate the relationships between perfectionism, the coach-created climate and ill-being and examine the moderating roles of the coach-created motivational climate on the perfectionism – ill-being relationship in youth football players. Although, it is suggested that the motivational climate may be a possible moderator of perfectionism – ill-being, there is currently no empirical support for this relationship. Using a cross-sectional survey-based design, this study will investigate how the perceptions of either an empowering climate or disempowering climate may buffer or exacerbate the relationship between perfectionism, burnout symptoms and depressive symptoms. This may offer insight into where practitioners can intervene to reduce the likelihood of athletes experiencing ill-being.

The final study of this thesis will investigate former professional footballers' perceptions of being a perfectionist and how, in their view, it influenced their lives during their career. Through adopting a qualitative interview design, this can provide us with detailed insight into their perceptions of being a perfectionist and the complex ways perfectionism may influence their lives in an environment that is personally

meaningful. This can be difficult to capture using reductionist quantitative methods. Specifically, this study aimed to explore former professional footballers' perceptions of being a perfectionist during their career, identify how the environment may influence footballers' perfectionistic tendencies and explore their perfectionistic responses, particularly during times of challenge and adversity.

Chapter 2 – Prevalence, psychosocial correlates and risk factors, and moderators of depression in athletes: A systematic review

2.1 Introduction

As outlined in the previous chapter, athletes may be susceptible to depression as a result of the demands placed on them to achieve. This is endorsed by a number of high profile athletes openly discussing their experiences of depression in the media and the progressive development from some sport and charity organisations towards better psychological support for athletes. Consequently, there appears to be a growing interest towards a better understanding of depression in sport. However, the field is still in its infancy and it is not known how many athletes may be suffering from depression and what factors may influence the development and maintenance of depression in sport. Thus, the purpose of the first study of the thesis was to investigate the prevalence, psychosocial correlates and risk factors, and moderators of depression in athletes. A description of the research on prevalence, correlates and risk factors, and moderators of depression beyond the sport environment is presented next. This is followed by an overview of the current research on depression in sport and the rationale for the study. The chapter concludes with a comprehensive systematic review of the current research on depression in athletes.

2.1.1 Prevalence, risk factors and moderators of depression

Depression is considered to be heterogeneous but is broadly defined as the lowering of an individual's mood and is typically characterised by feelings of sadness (Dobson & Dozois, 2011; Ingram et al., 2009). Depression is considered to be one of the leading causes of disease burden worldwide (Ferrari et al., 2013). Thus, it can seriously impact on ones quality of life (Gotlib & Hammen, 2014). In addition, from a societal

perspective, depression can be especially costly. Consequently, depression has received much empirical attention and research has typically focused on prevalence, correlates, and risk factors of depression.

The proportion of the population that have depression at any given time (prevalence) varies depending on the aspects of depression being estimated. These estimates also vary depending on sample and measurement methods (Ingram et al, 2009). Annual and point prevalence of major depression across the general population is 4% to 5% (see Dobson & Dozois, 2011; Kessler & Bromet, 2013). Prevalence has been reported to be higher among some groups such adolescents (20%; Thaper, Collishaw, Pine, & Thaper, 2012), women (i.e., around 50% more likely than in men) (see Abate, 2013; Kessler, 2003) and those with a previous history of depression (80%; Kessler, 2002). It is important to note that there are discrepancies between the measures used and how these measures are interpreted with regards to indicating the severity of depression (e.g., subsyndromal depression and major depression)(Kessler et al., 2014).

The terms correlates and risk factors are often used interchangeably. However, correlates are variables that are simply associated with the outcome whereas risk factors are variables (or correlates) that have been demonstrated to precede an outcome (i.e., establishing temporal precedence) and indicate an increased probability of developing a given condition (Kraemer, Stice, Kadzin, Offord, & Kupfer, 2001). Risk factors of depression have been examined extensively and from multiple perspectives. In Dobson and Dozois' (2011) conceptual model they identify risk factors to be biological, psychological and social. These risk factors similarly correspond with the models of depression outlined in the first chapter (e.g., genetics, sleep regulation, life events, cognitive and behavioural models).

Examining psychosocial correlates and risk factors of depression are important because they are modifiable and amenable to change through the individual, group, organisation, community and policy interventions (Hall, 2017). There have been a vast

number of reviews that have examined psychosocial risk factors of depression (e.g., Bonde, 2008; Hall, 2017; Recto & Champion, 2017). In one review of 25 studies, correlates and risk factors were identified for chronic depression (Holzel, Harter, Reese, & Kriston, 2011). Correlates were psychological (e.g., anxiety), interpersonal factors (e.g., negative social interaction) and substance use. Risk factors were adolescent onset of depression, longer duration of depressive episodes and previous family history (Holzel et al., 2011).

As adolescents have been identified as being especially vulnerable to depression there has been a number of studies and subsequent reviews examining risk factors. One review examined modifiable risk factors of depression in adolescents (Cairns, Yap, Pilkinton, & Jorm, 2014). They included 113 studies and all studies included in the review used a longitudinal design. Cross-sectional studies were excluded. They found that risk factors were substance use (e.g., alcohol), changes in diet/weight and negative coping strategies. They also found protective factors to be sleep and a healthy diet. Through identifying modifiable risk and protective factors we can help inform preventative strategies such as education and community health promotion.

Moderators of depression have been studied to a much lesser extent than correlates and risk factor. As a result, there have been few reviews that have examined moderators. Moderators are factors that change the direction and/or strength of the relationship between a correlate or risk factor and depression (Baron & Kenny, 1986). It is often acknowledged that the development of depression is complex and may be multifactorial as observed in the models of depression. Therefore, it is important to investigate moderating variables as they can delineate the complexity of relationships, experiences and behaviour pertaining to depression (MacKinnon, 2011). Although moderators of depression are examined to a lesser degree than risk factors and correlates, this is an important area of research. This is because moderators may indicate

possible avenues of treatment for depression (Kaslow, Petersen-Coleman, & Alexander, 2014).

Moderators have typically been identified as biological, psychological and social factors of the psychosocial risk factor and depression relationship. Moderators of the stress (stressors and stressful life events) and depression relationship have received some empirical attention. In particular, moderating factors such as social support (basic social needs satisfied by others), coping behaviour (cognitive and behavioural ways of reducing emotions), attachment (strong ties with caregiver) and neuroendocrine activity (hormonal changes) have received some empirical attention (Harkness, 2008). A person's cognitive style may also be a moderator of the stress and depression relationship. Specifically, cognitive styles such as negative attributions (negative inferences about why the event occurred), dysfunctional attitudes (negative thoughts about events) and perceived control (belief that one can influence outcomes) are identified as moderators of the relationship between stress and depression (Dulin, Hanson, & King, 2013; Lakdawalla, Hankin, & Mermelstein, 2007). The stress and depression relationship has also been found to be moderated by gender, indicating that females are more susceptible to depression (Mezulis, Funasaki, Charbonneau, & Hyde, 2010).

Moderating factors of the personality and depression relationship have also received some empirical attention. There is evidence to suggest that moderators of personality may include gender, early adversity and life stress (Klein, Dougherty, Laptook, & Olino, 2008). Studies have typically investigated specific personality characteristics. For example, in one study, physical limitations (e.g., chronic illness), social factors (e.g., low social support) and low socio-economic status (e.g., low income) moderated increases in the relationship between neuroticism and depression (Vittengl, 2017). In another study, coping moderated (either buffered or exacerbated

depending on the strategy) the relationship between sociotrophy and depression (Connor-Smith & Compas, 2002).

2.1.2 Depression in athletes: What do we currently know?

Depression in sport has received less attention in comparison to other domains. However, three reviews have outlined current knowledge in this area. Wolanin, Gross and Hong (2015) published a narrative review with the aim of providing an overview of studies that had investigated the prevalence and risk factors associated with depression among athletes. As it was a narrative review, the authors did not create inclusion/ exclusion criteria for including studies. Prevalence rates of depression were reported from two studies to be between 16% and 21% in college athletes. The risk factors of depression were sports injuries, career termination and poor athletic performance. Wolanin and colleagues concluded that athletes are vulnerable to developing depression, and may be more likely to be at risk due to the unique stressors they encounter in sport.

In a second review, Frank, Nixdorf and Beckmann (2015) aimed to identify the prevalence rates of elite athletes that were currently competing. A further aim was to identify the psychological risk factors that may contribute to the development of depression among elite athletes. The authors took a structured approach more akin to a systematic review when collating studies (i.e., literature search strategy and inclusion criteria were explicit). In total, nine studies were reviewed. The prevalence rates of depression in these studies were reported to be between 1% and 33.5%. Six of these studies identified psychological risk factors. The psychological risk factors were stress/stressors unique to athletes (e.g., performance failure), unhelpful coping strategies, exercise stress/overtraining, personality traits (e.g., perfectionism) and relationships with others (e.g., social connectedness).

In the most recent review, Rice et al. (2016) conducted a systematic review of mental ill-health among athletes. The aim of the review was to identify the prevalence

and nature of mental ill-health (including substance use) and psychological well-being among elite athletes. Depression was included as part of these outcomes. This review took a more rigorous approach in line with the expectations of a systematic review with explicit inclusion criteria, data extraction, literature search, and quality appraisal processes described in detail. Sixty studies were identified from the literature search. The prevalence of depression was reported to be between 4% and 34% from 5 studies. Only risk factors for overall mental ill-health were reported, not for depression specifically. These risk factors included retirement, performance failure, life events and low social support.

2.1.3 Rationale for this study

While the three reviews have provided a timely overview of research examining depression, an additional review would be beneficial for several reasons. First, two of the three reviews that have directly investigated prevalence and risk factors of depression have taken a narrative and unsystematic approach (Frank et al., 2015; Wolanin et al., 2015). In Wolanin and colleagues' review, evidence was obtained from self-selected studies. In Frank et al.'s review although a systematic approach was followed for assessing prevalence, the authors took a narrative approach when examining psychological risk factors. Although narrative reviews may be useful in providing a snapshot of the risk factors of depression, they lack clarity, validity and auditability (Booth, Sutton, & Papaioannou, 2012). These two reviews are difficult to interpret without a clear methodology and explicit descriptions of the methods (i.e., literature search strategy, inclusion/exclusion criteria, number of studies included/excluded and data extraction). As a result, this can implicate reproducibility and the studies chosen are subject to selection bias when summarising relevant evidence (Mulrow & Cook, 1997). In addition, without transparency as to how studies were selected it is difficult to establish the credibility of their conclusions (Booth et al., 2012).

Second, two of the three reviews were too narrow in terms of their inclusion criteria. In Frank and colleagues' review (2015) they only included studies that explicitly reported prevalence rates (9 studies in total) in athletes that were currently competing. Studies that had examined injured athletes were excluded from their review, although injury has been identified to be a risk factor of depression in other reviews (see Putukian, 2017). In Rice et al.'s (2016) review the primary aim was to provide an overview of the prevalence and risk factors of mental health and well-being in elite athletes, rather than on depressive symptoms specifically. Studies were also only included in their review if they reported that participants were competing at professional to Olympic level and athlete mean age was 18 years and above. Sub-elite athletes (e.g., college/school athletes) and heterogeneous samples were excluded (i.e., mixed samples: elite and non-elite athletes). As a result, those athletes aspiring to reach elite status were not included in the review. It is important to include these athletes as they may still experience the same stressors and strains as those considered elite such as injury, career termination and performance pressure.

Third, the previous reviews did not explicitly differentiate between correlates and risk factors of depression. Without temporal precedence (a correlate that precedes an outcome) it cannot be considered a risk factor (Kraemer et al., 2001). However, it is important to identify correlates in the cross-sectional studies as they provide the justification, background and rationale to design subsequent longitudinal studies (Kraemer, Yesavage, Taylor, & Kupfer, 2000). By distinguishing between those studies that were cross-sectional (correlates) and those that were longitudinal (possible risk factors) we can provide a clearer picture of the current state of the literature. That is, we can identify variables considered to put athletes at risk and also identify correlates that may be worth examining longitudinally to assess whether they are indeed risk factors.

Finally, the three reviews did not examine moderators of the relationship between correlates/risk factors and depression. Risk factors inform us about processes

involved in the onset, maintenance or reoccurrence of depression (Dobson & Dozois, 2011), whereas moderators help to explain inconsistencies across findings. Moderators indicate the complexity of behaviour, experiences and relationships. They are critical for the generalisability of subgroups and are important when testing theoretical assumptions, where an effect is expected in one group in comparison to another (MacKinnon, 2011). In addition, moderators may be useful in identifying avenues for interventions/treatments of athletes (Rumbold, Fletcher, & Daniels, 2012).

2.1.4 The purpose of study one

The purpose of this study was to conduct a comprehensive systematic review of depression in athletes to date. The specific aims were to (a) assess the recorded prevalence of depression in athletes, (b) identify psychosocial correlates and risk factors that may influence the relationship between athletes and depression and (c) identify moderators that may alter the direction or strength of the relationship between risk factors and depression.

2.2 Method

2.2.1 Search strategy

The search strategy must be comprehensive and include explicit reproducible criteria to ensure all potentially relevant articles are selected for further screening (Cook, Mulrow, & Haynes, 1997). A preliminary search was conducted to identify relevant databases, test out the search terms and preview the literature to determine whether the systematic review was justifiable. To retrieve appropriate studies the search strategy must be extensive (Centre for Reviews and Dissemination: CRD, 2009). Thus, the search strategy utilised two approaches. In the first approach relevant databases were searched (without a limit on publishing date). Six EBSCOhost databases were inspected: PsycINFO; Child Development & Adolescent Studies; CINAHL;

PsycARTICLES; SPORTDiscus; MEDLINE. A subsequent search was conducted using Google Scholar and ZETOC. The word stems "depress*", "athlet*" and "sport*" were entered into the databases. In the second approach reference lists and citations of key papers were searched for additional papers (CRD, 2009). This search was conducted between September 2016 and February 2017.

2.2.2 Inclusion criteria

For papers to be included in the review they had to meet the following criteria: (1) an empirical study published in a peer-reviewed journal; (2) the study clearly stated that participants were considered to be athletes who trained and competed regularly in organised sport; (3) the study assessed depression/depressive symptoms; (4) if a study examined moderators these were based on theoretical assumptions and this was identifiable in the introduction; (5) bivariate correlations were presented in correlational studies; (6) the study was published in English; (7) the study used a quantitative design. Studies were excluded from the review if: (1) the study did not clearly specify athlete samples or solely focused on recreational sport, exercise or physical activity as opposed to competitive sport; (2) studies that had only focused on a biological theoretical basis to examine correlates/risk factors of depression; (3) the study was available in abstract form only; (4) the study used a qualitative design.

2.2.3 Data extraction

Research papers were initially assessed by their title and abstract. If these papers satisfied the inclusion criteria they were then examined at full paper. Studies were excluded from the sifting process if the inclusion criterion were not satisfied. A data extraction template was designed. The following information was extracted from full papers and coded from each study: purpose, demographics, study design, depression measures, prevalence, correlates, risk factors and moderators. Appraisal tools were not necessary for the purpose of this review. These tools have typically been designed to

assess risk of bias of clinical interventions studies and specifically appraise randomised controlled trials in healthcare. A narrative synthesis of the quantitative studies was deemed to be the most suitable approach due to the diversity and heterogeneity of studies collected and the variability in measures used to assess depression/depressive symptoms.

2.3 Results

2.3.1 Study characteristics

Fifty-nine quantitative studies were included in this review. Of those, six included data sets that were used in other studies and were therefore combined (see figure 2.1). The study designs were predominantly cross-sectional ($n = 35$; 66%). In terms of sample sizes, 22 (41%) recruited between 1-100 participants, 19 (36%) recruited between 101-300 participants and 12 (23%) recruited over 300 participants. In terms of gender, 34 (64%) studies included both female and male participants, 11 (21%) included male only, 5 (9%) included female only and 3 (6%) did not report on gender. Regarding the age (years) of participants within studies, 8 (15%) reported a mean age between 13-17 years, 23 (43%) reported a mean age between 18-21 years, 8 (15%) reported a mean age between 22-30 years, 5 (10%) reported a mean age of 31 years and over, and 9 (17%) did not report mean age.

Athletes participated in a variety of different sports. Of those, 19 (36%) studies included athletes from team sports, 8 (15%) included athletes in individual sports, 22 (41%) included athletes from a combination of both individual and team sports and 4 (8%) did not report the type of sport. In terms of athletes competitive levels, 25 (47%) were non-professional (i.e., club, collegiate, regional and national), 8 (15%) were professional (i.e., elite and international), 19 (36%) were a combination of competitive levels, and 1 (2%) did not clearly specify the competitive level of athletes.

In total ten different instruments were used to assess depressive symptoms or clinical depression. These were the Center for Epidemiological Studies Depression Scale (CES-D: Radloff, 1991), Profile of Mood States-Depression (POMS-D: McNair, Droppleman, & Lorr, 1971), Depression Anxiety Stress Scale (DASS: Lovibond & Lovidbond, 1995), Becks Depression Inventory (BDI: Beck & Steer, 1993), General Health Questionnaire-Depression (GHQ: Goldberg & Williams, 1988), Patient Health Questionnaire-Depression (PHQ: Spitzer, Kroenke, & Williams, 1999), Symptoms Checklist-90-Revised (SCL-90-R; Derogatis, 1983), von Zerssen's Depression Scale (von Zerssen, 1976), Zung Depression Scale (Zung, 1965), and Personality Assessment Inventory-Depression (PAI-D; Morey, 1991).

Different variations of these instruments were also used. There included shortened versions of the CES-D, POMS-D, BDI, GHQ, PHQ and SCL-90-R (Brief Symptom Inventory, BSI: Derogatis & Melisaratos, 1983). In addition, revised versions of instruments were also used such as the BDI-II (Beck, Steer, & Brown, 1996) and Wakefield Depression Scale (Revised from Zung Depression Scale: Snaith, Ahmed, Mehta, & Hamilton, 1971). Some studies used clinical interviews to assess participants. These were derived from the Diagnostic and Statistical Manual of Mental Disorders-Depression (*DSM*-IV: American Psychiatric Association, 2000) and the Hamilton Depression Scale-Structured Interview Guidelines (SIGH-D; Williams, 1988). Of these measures, the CES-D was most commonly used, followed by the POMS-D, SCL-90-R, BDI (II), and GHQ.
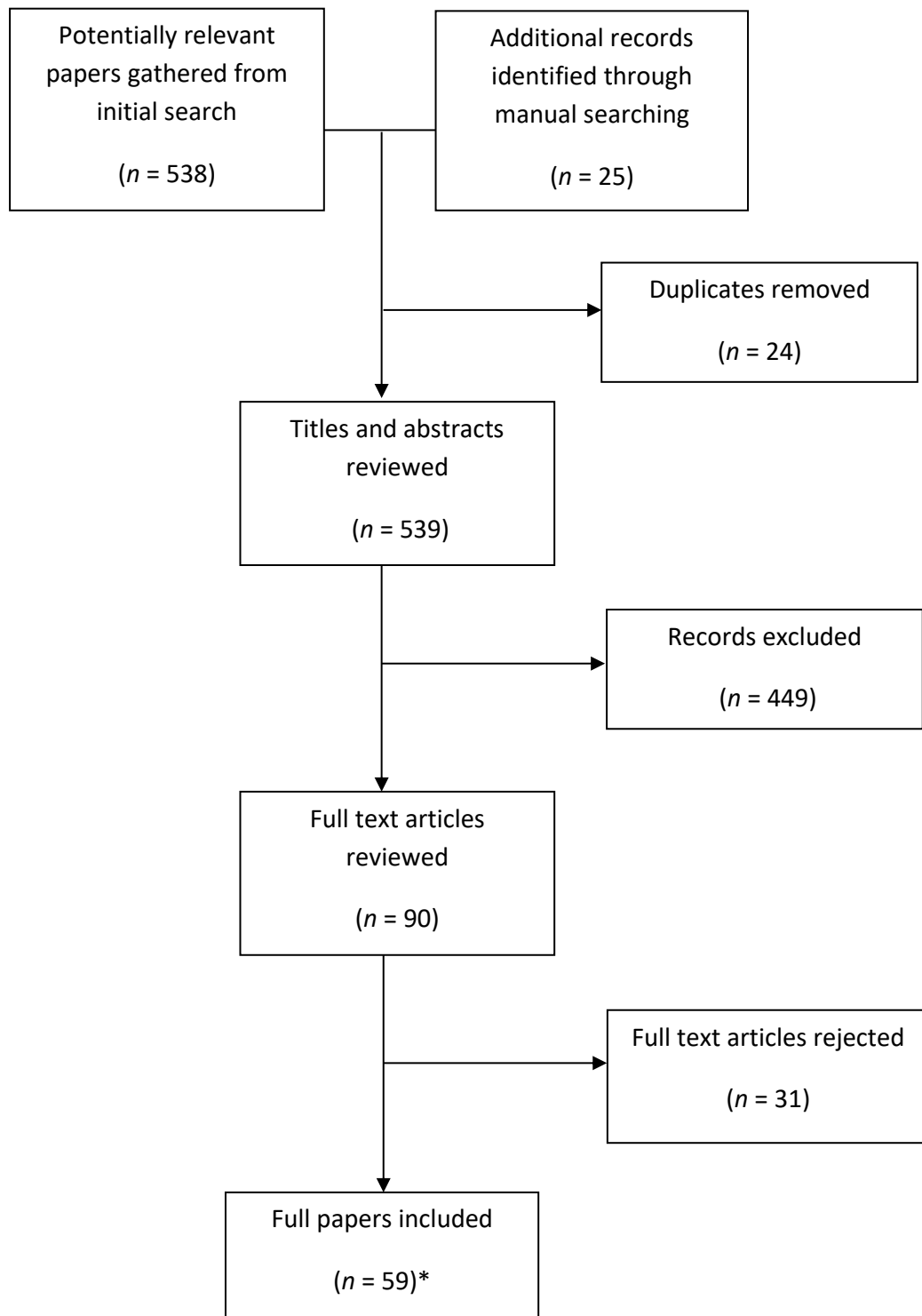
Figure 2.1 Flow diagram of systematic review study selection

*Six of these studies used the same data set in another study

2.3.2 Prevalence

Twenty-four studies reported prevalence of depression (see table 2.1). Prevalence was reported in studies that had used the CES-D (10 studies), GHQ-12 (6 studies), BDI (II) (3 studies), SIGH-D/DSM-IV clinical interviews (3 studies), Zung Depression scale (1 study), PAI (1 study) and Wakefield Depression Scale (1 study). As a result, there were large variations in prevalence rates for athletes and these were reported as mild, moderate and major depressive symptoms and clinical depression. Of those studies that had used the CES-D, prevalence was reported to be between 10.6% and 57.5% for mild to major depressive symptoms. The mean depression prevalence of these studies was 24.5% for mild to major symptoms (Armstrong & Oomen-Early, 2009; Gulliver et al., 2015; Junge & Feddermann-Demont, 2016; Nixdorf et al., 2013; Prinz et al., 2016; Proctor & Boan-Lenzo; Roiger et al., 2015; Wolanin et al., 2016; Yang et al., 2007,2014).

The GHQ-12 was assessed as a combination of depression and anxiety prevalence. These values ranged between 20.7% and 54.5% (Blakelock et al., 2016; Gouttebarge et al., 2015a, 2015b, 2015c, 2016a, 2016b, 2016c; Ramele et al., 2017). The BDI (II) assessed mild to major depressive symptoms and these ranged between 13% and 51% (Hammond et al., 2013; Leddy et al., 1994; Manuel et al., 2002). In the Wakefield Depression Scale, prevalence was reported as mild to major depressive symptoms at 16.8% (Weigand et al., 2013). In the Zung Depression Scale, prevalence was reported as clinical depression at 22% (May et al., 1985). In the PAI, prevalence was also reported as clinical depression at 13.5% (Storch et al., 2005). When using clinical interviews, prevalence ranged between 3.6% and 34% (Appaneal et al., 2009; Hammond et al., 2013; Schaal et al., 2011). The mean clinical depression prevalence was 16%. In addition, Hammond et al. (2013) reported prevalence over 36 months to be 68% and Schaal et al. (2011) reported lifetime prevalence to be 11.3%.

Prevalence was differentiated by various factors such as country, sport type and history of depression. Gender and athlete status (i.e., competitive level and current/former athlete) were the most common way to differentiate between prevalence. Seven studies differentiated between gender. Females had a higher prevalence of depression than males. In five studies, mild to major depressive symptoms in females were reported to be between 13% and 37% and in males were reported between 9% and 23.6% (Gulliver et al., 2015; Hammond et al., 2013; Junge & Feddermann-Demont, 2016; Wolanin et al., 2016; Yang et al., 2007). In two studies, clinical levels of depression for females were reported as 4.9% and 9.8% and for males were reported as 2.6% and 3.7% (Schaal et al., 2011; Storch et al., 2005).

Two studies differentiated prevalence between competitive levels. Those at a lower competitive level reported higher depressive symptoms. Nixdorf et al. (2013) reported higher prevalence of major depressive symptoms in amateurs (29%), in comparison to professionals (15%) and junior professionals (20%). In Junge and Fedderman-Demont's (2016) study, under 21 male footballers had a higher prevalence of mild to major depressive symptoms (15.1%) than football league players (6.6%). Three studies differentiated prevalence between current and former athletes. Gouttebarge et al. (2015a) reported higher prevalence of depression/anxiety in former athletes (39%) in comparison to current athletes (26%). In contrast, Weigand et al. (2013) reported higher prevalence of mild to major depressive symptoms in current athletes (16.8%) in comparison to former athletes (8%). Similarly, Prinz et al. (2016) reported that athletes had higher major depressive symptoms during their career (32.3%) in comparison to athletes within the first two years of retirement (8.5%). When investigating individual groups, Blakelock et al. (2016) reported that athletes that were imminently deselected from their respective clubs reported depression/anxiety to be 35% after the first decision and 54.5% after the second decision. In retired athletes, Gouttebarge et al. (2016a, 2016c; Ramele et al., 2017) reported prevalence of

depression/anxiety to be 28.4% (2016a) and 35.3% (29% at 12 months; 2016c; Ramele et al., 2017).

A number of studies also reported the prevalence of depression in injured athletes. Two studies reported prevalence of depression over time in injured athletes. In the initial onset of injury depression was higher. Appaneal et al. (2009) reported clinical levels of depression to be 9.6% at one month and 4.4% at three months post-injury. In addition, Manuel et al. (2002) reported mild to moderate depressive symptoms to be 27% at injury onset, 21% at three weeks, 17% at six weeks and 13% at twelve weeks. Three studies also reported prevalence in injured and recovering athletes. Leddy et al. (1994) reported mild to major depressive symptoms to be 51% and of those 12% reported major depressive symptoms. Roiger et al. (2015) reported mild to major depressive symptoms to be 14.2% in injured athletes. Yang et al. (2014) reported mild to major depressive symptoms to be 22.2% when returning from injury.

2.3.3 Correlates and risk factors

Forty-nine studies had examined correlates of depression and thirteen studies had examined risk factors of depression. In these studies socio-demographic factors, life events, performance and career satisfaction, individual differences, interpersonal relationships and support, and psychological well-being and ill-being were identified as potential correlates and risk factors of depression. See table 2.1.

2.3.3.1 Socio-demographic factors

Socio-demographic factors were identified as correlates of depression. These were gender, age, race, type of sport, position of play and athlete status. Of the studies that examined gender, eight studies found that women experienced higher depressive symptoms/depression than men (Appaneal et al., 2009; Dorsch et al., 2016; Gerber et al., 2011; Hammond et al., 2013; Schaal et al., 2011; Shanmugam et al, 2011; Storch et al., 2005; Wolanin et al., 2016). Three studies did not find a significant difference for

gender (Nixdorf et al., 2013; Smith et al., 1993; Yang et al., 2007) and one study by Wolanin et al. (2016) found a non-significant difference in gender for athletes reporting moderate to major depressive symptoms.

Five studies examined age in relation to depression. Junge & Feddermann-Demont (2016) found that age was negatively correlated with depressive symptoms. Similarly, younger student athletes (freshman) reported higher depressive symptoms than older student athletes (Dorsch et al., 2016). However, age was positively correlated in Gerber et al.'s (2011) study. Schaal et al. (2011) also found that older athletes had higher levels of depression (i.e., 2.2% over 21, 0.8% in 18-21, and 0.3% in under 18's). Two studies found there was no correlation with age (Nixdorf et al., 2013; Prinz et al., 2016). In terms of race, Dorsch et al. (2016) found that minority student athletes reported higher levels of depressive symptoms than non-minority athletes. However, Yang et al. (2007) found a non-significant difference between white and minority athletes.

Characteristics of sport were examined in relation to depression. Six studies examined the type of sport that athletes participated in. Nixdorf et al. (2013, 2016) found that athletes participating in individual sports had higher depressive symptoms than those competing in team sports. In terms of specific sports, Schaal et al. (2011) identified that athletes in aesthetic or fine motor skills sports had higher levels of clinical depression than those in other sports (i.e., racquet, team ball, racing, contact and high risk sports). In Wolanin et al.'s study (2016) they found that those in track and field had higher depressive symptoms than those in other sports (i.e., cheerleading, rowing, tennis and team ball sports). However, when Wolanin et al. examined moderate to major depressive symptoms there were no significant difference in type of sport. Two studies found that there was no significant difference in type of sport (Smith et al., 1993; Yang et al., 2007). In terms of position of play, two studies found that attackers in football had higher depressive symptoms than other positions (Junge & Feddermann-

Demont, 2016; Prinz et al., 2016). In addition, Junge and Feddermann-Demont found that playing more than one position was associated with higher depressive symptoms.

The competitive levels of athletes were examined in relation to experiencing depression. Three studies identified that athletes competing at lower competitive levels had higher depression/depressive symptoms than those competing at a higher level (Junge & Fedderman-Demont, 2016; Mahoney, 1989; Martin et al., 2011). In contrast, Hammond et al. (2013) found that swimmers ranked in the top 25% experienced higher clinical depression than the other 75% of swimmers. In a study by Prinz et al. (2016), athletes competing in the 2nd highest or 2nd lowest league in women's football experienced higher depressive symptoms than those at other levels of play. Level of participation was non-significant in one study (Smith et al., 1993).

When examining differences between athletes and non-athletes, three studies identified that athletes had lower levels of depression than non-athletes (Armstrong & Oomen-Early, 2009; Gerber et al., 2011; Proctor & Boan-Lenzo, 2010). Klinkowski et al. (2008) also found that anorexia patients had higher depression than athletes and school students. When Klinkowski et al. compared athletes and school students there was no significant difference. Similarly, Storch et al. (2005) found no significant difference between athletes and non-athletes. Conversely, Junge and Fedderman-Demont (2016) found that male under 21 (age) football players had higher depressive symptoms than the general population.

2.3.3.2 Life events

Life events were identified as correlates and risk factors of depression. These were relocation, release/retirement, injuries, surgeries and general life events. Two studies examined athletes relocating for sport and found a non-significant relationship (Gulliver et al., 2015; Yang et al., 2007). Studies that examined release/retirement from sport investigated different aspects of this process. Prinz et al. (2016) found that athletes

with no plans or vague plans for the future after their career experienced higher

depressive symptoms than those with concrete plans. In a study that compared current

and former athletes, Weigand et al. (2013) found that current college athletes

experienced higher depressive symptoms than former graduated athletes.

Two studies longitudinally examined the process of athletes being released from

their team. Blakelock et al. (2016) found that footballers released from their club had

higher depression/anxiety than those that retained their position. Over time, there was

no significant difference in depression/anxiety scores for released footballers, whereas

those that were retained had a significant reduction in their depression/anxiety scores

from pre-decision (7-14 days before) to post decision (21 days), suggesting that

deselection may be a risk factor. Similarly, Wippert and Wippert (2010) found that

national skiers that involuntarily retired experienced higher depression at 10 days after

than those that had voluntarily retired. At 5.5 months there was no significant difference

between groups. However, for the involuntary retired group over time, there was no

significant difference in depression between 10 days and 5.5 months suggesting that

there was no change in depression.

Injuries were extensively examined in relation to depression and depressive

symptoms. Seven studies were cross-sectional and eight studies examined injuries

longitudinally. There was a non-significant association in six cross-sectional studies that

had examined the number of injuries sustained, being currently injured and history of

injuries in current/former athletes (Gouttebarge et al., 2015a, 2015b, 2016c; Nixdorf et

al., 2013; Prinz et al., 2016; Yang et al., 2007). One study found that injured athletes

experienced higher depressive symptoms than non-injured athletes (Gulliver et al.,

2015). In another study, injuries were found to predict depression/anxiety (Gouttebarge

et al., 2015b). In addition, Yang et al. (2007) found that those self-reporting that they

experienced pain had higher depressive symptoms than those without. Four studies by

Gouttebarge and colleagues examined number of surgeries on depression/anxiety in

male team sports. These were non-significant among both current and former athletes (Gouttebarge et al., 2015a, 2015b, 2016b, 2016c).

Of the eight studies that examined injuries and depression/depressive symptoms longitudinally, one study found that there was a non-significant difference in injured and non-injured athletes across two weeks (Hutchinson et al., 2009). Three studies found a significant difference between injured and non-injured athletes over a period of one or two months (Appaneal et al., 2009; Leddy et al., 1994; Mainwaring et al., 2010). Three studies found that suffering from injuries led to an increase in depression/depressive symptoms over time (Gouttebarge et al., 2016b; Roiger et al., 2015; Smith et al., 1993). After an initial increase at onset of injury in depression/depressive symptoms, two studies found that scores decreased over a period of three months (Manuel et al., 2002; Roiger et al., 2015). These findings suggest that injury may be a risk factor of depression.

General life events were examined in seven studies. In these studies they used the Social and Athletic Readjustment Rating Scale (Bramwell, Masuda, Wagner, & Holmes, 1975), which collectively examines life events such as death of a loved one, change in financial situation and change in residence. Recent life events were significantly associated with depressive symptoms in four studies (Gouttebarge et al., 2015a, 2016a, 2016c; May et al., 1985). Conversely, recent life events were non-significant in three studies (Gouttebarge et al., 2015b, 2016b; Ramele et al., 2017). Life events that took place more than 6/12 months ago were not significantly associated with depression/anxiety (Gouttebarge et al., 2015a, 2016a, 2016c).

2.3.3.3 Performance and career satisfaction

Performance and career satisfaction were correlates of depression. Seven studies examined specific features of performance. In particular, feeling prepared for competition (Aruzza et al., 2009), feeling satisfied with performance (Arruza et al.,

2009; Felton & Jowett, 2015), individual aspects of sport performance (i.e., batting performance in cricket; Plante & Booth, 1997) and an examination of more successful athletes (i.e., a change in performance for the top 25% of athletes; Hammond et al., 2013) were negatively correlated with depressive symptoms and clinical depression. Three studies found a non-significant relationship with specific features of performance, which pertained to individual aspects of sport performance (i.e., fielding and pitching performance in cricket; Plante & Booth, 1997) and changes in performance or ranking (Hammond et al., 2013; Schofield et al., 2004).

When comparing more successful performances and less successful performances, two studies found that athletes experiencing performance decrements reported higher depressive symptoms than those that were not (Jones & Sheffield, 2007; Schmikli et al., 2011). Career satisfaction represented satisfaction with success in career and satisfaction about sporting ability. Three studies found a negative correlation between career satisfaction and depressive symptoms (Dorsch et al., 2016; Gouttebarge et al., 2015b, 2016a). In contrast, three studies found a non-significant association between career satisfaction and depressive symptoms (Gouttebarge 2016b, 2016c; Jowett & Cramer, 2009).

2.3.3.4 Individual differences

Individual differences were identified as correlates of depression. These were coping strategies, experiential avoidance, conditional goal setting, self-confidence, intrinsic religiosity, attribution of failure and personality characteristics. Some coping strategies were negatively correlated with depressive symptoms. These were positive self-instruction (encouragement), situation control (Nixdorf et al., 2013) and task-oriented coping (Proctor & Boan-Lenzo, 2010). However, reaction control was non-significant (Nixdorf et al., 2013). Self-confidence was a negative predictor of depressive symptoms (Schofield et al., 2002, 2004). In addition, one study found that intrinsic

religiosity (i.e., religion as a framework for their life) was negatively associated with depressive symptoms (Storch et al., 2002). Some coping strategies were found to be positively correlated with depressive symptoms. These were escaping the situation, resignation, self-pity (Nixdorf et al., 2013) and emotion-oriented coping (Proctor & Boan-Lenzo, 2010). In addition, experiential avoidance (avoidance of thoughts, feelings, physical sensations and memories) (Zhang et al., 2014), conditional goal setting (Schofield et al., 2002, 2004) and negative attribution to failure (internality, stability and globality) (Nixdorf et al., 2016) positively correlated with depressive symptoms.

Personality characteristics were also correlates of depressive symptoms. Neuroticism (Petito et al., 2016) and trait anxiety (Yang et al., 2007) were found to be positive correlates with depressive symptoms. In addition, dimensions of perfectionism correlated with depressive symptoms. Shanmugam et al. (2011) found personal standards/self-expectations positively correlated with depressive symptoms. However, this relationship was non-significant in three studies (Shanmugam et al., 2012, 2013; Stirling & Kerr, 2009). Self-criticism, another dimension of perfectionism, was identified as a positive correlate of depressive symptoms in two studies (Shanmugam et al., 2011, 2014b). When examining interpersonal dimensions of perfectionism, expectations from others (Nixdorf et al., 2016) and parent and coach expectations (Stirling & Kerr, 2009) were positively correlated with depressive symptoms. However, other athletes' expectations, significant others' expectations, and expectations of others were non-significant (Stirling & Kerr, 2009).

2.3.3.5 Interpersonal relationships and support

Interpersonal relationships and support were identified as correlates of depression. These were attachment, basic psychological needs thwarting/satisfaction, quality of relationships, support from others (coaches, coaching staff, parents,

teammates and partners), seeking professional support and group cohesiveness/sense of belonging. Of those studies that examined attachment style, anxious and avoidant attachment positively correlated with depressive symptoms (Felton & Jowett, 2015; Shanmugam et al., 2011, 2012). In contrast, secure attachment negatively correlated with depressive symptoms (Felton & Jowett, 2015). Athletes' basic psychological needs (autonomy, relatedness, and competence) were examined with regards to whether these were satisfied or thwarted in their sport. There was a negative correlation between needs satisfaction and depressive symptoms in one study (Bartholomew et al., 2011). For needs thwarting, two studies found a positive correlation for depressive symptoms (Bartholomew et al., 2011; Felton & Jowett, 2015).

A number of studies examined the relationship between the coach and the athlete. Coach support (Shanmugam et al., 2011, 2013), autonomy supportive coaches (Bartholomew et al., 2011; Shanmugam et al., 2014b) and coach involvement (interest in athletes career) was negatively related with depressive symptoms. In terms of the negative aspects of this relationship, coach control (Bartholomew et al., 2011), psychological needs thwarting coaches (Felton & Jowett, 2015) and coach conflict (Shanmugam et al., 2011, 2012) were positively correlated with depressive symptoms. However, Gouttebarge et al., (2015a) found a non-significant association between low social support from the coach and depressive symptoms. One study examined the role of other coaching staff. In this study, Yang et al. (2014) identified that athletes that were dissatisfied with support from their athletic trainers (staff active in the prevention and treatment of injuries) experienced more depressive symptoms than those satisfied with support from athletic trainers.

A number of studies examined the relationships between athletes and their parents. Parent support (Dorsch et al., 2016; Shanmugam et al., 2011) and athletes' perceptions of their parents athletic engagement (Dorsch et al., 2016) negatively correlated with depressive symptoms. However, parent support was a non-significant

correlate in one study (Shanmugam et al., 2013). Contact with parents (i.e., frequency) and emotional and functional independence from parents was non-significant (Dorsch et al., 2016). When examining individual parents, perception of fathers' autonomy support and involvement were both negatively correlated with depressive symptoms. Perception of Mothers' autonomy support and involvement were non-significant correlates of depressive symptoms (Shanmugam et al., 2014b). When examining the negative aspects of the parent-athlete relationship, Shanmugam et al. (2011, 2012) found that parent conflict was positively correlated with depressive symptoms.

Two studies examined the relationship between athletes and their teammates. Gouttebarge et al. (2015a) found a significant association between low social support from teammates and higher depressive symptoms. Interestingly, Shanmugam et al. (2011) found a positive relationship between teammate social support and depression. Two studies examined the relationship between athletes and their partners. Jowett and Cramer (2009) found a positive relationship between negative spillover (negative interference of sport on relationship) and depressive symptoms. Whereas, interpersonal trust, interpersonal commitment, hostile interaction and communication quality with partner were non-significant. In addition, Nixdorf et al. (2013) found that there was no significant difference between those that had a partner and those that did not on depressive symptoms. In terms of professional support, two studies found that those who wanted counselling and psychotherapy experienced higher depressive symptoms than those who did not need or had less need for professional support (Nixdorf et al., 2013; Prinz et al., 2016). However, there was a non-significant difference between those that had counselling and those that did not, when examining depressive symptoms (Nixdorf et al., 2013).

Three studies examined group cohesion and depressive symptoms. One study found that when athletes perceived a moderate group integration-task (i.e., team closeness around tasks) experienced higher depressive symptoms than those perceiving

a high/low group integration-task. There were no significant differences for group integration-social (i.e., social team bonding), individual attraction to group-task (i.e., task involvement) and individual attraction to group-social (i.e., social involvement) (Henderson et al., 1998). In two studies cohesion was negatively related to depressive symptoms (Nixdorf et al., 2016; Terry et al., 2000). Social connectedness (i.e., sense of belongingness) was also negatively related to depressive symptoms (Armstrong & Oomen-Early, 2009) and loneliness was positively related to depressive symptoms (Shanmugam et al., 2014b).

2.3.3.6 Psychological well-being and psychological ill-being

Psychological well-being and psychological ill-being were identified as correlates and risk factors of depression. Well-being measures were self-esteem, vitality, life satisfaction, general well-being and mood state (vigour). Ill-being measures were negative affect, chronic stress, excessive worry and anxiety, mood states (tension, fatigue, anger and confusion), previous depression, risky behaviours and eating disorders pathology. In terms of well-being, self-esteem negatively correlated with depressive symptoms (Armstrong & Oomen-Early, 2009; Shanmugam et al., 2011, 2012, 2013). However, in one study this relationship was non-significant (Shanmugam et al., 2014b). Vitality (Bartholomew et al., 2011), life satisfaction (Felton & Jowett, 2015) and general well-being (i.e., satisfaction with life, cheerfulness, physical health and emotional control: May et al., 1985) were also negatively correlated with depression. In addition, vigour was negatively correlated with depressive symptoms in Terry et al.'s (2000) study, but this relationship was non-significant in Schmikili et al.'s (2011) study.

In terms of ill-being, negative affect (Felton & Jowett, 2015), chronic stress, (Nixdorf et al., 2013), excessive worry (May et al., 1985), state anxiety (Yang et al., 2007), social anxiety (Shanmugam et al., 2014), cognitive anxiety and somatic anxiety

(Schofield et al., 2002, 2004) were positively correlated with clinical depression and depressive symptoms. The mood states fatigue and tension were positively correlated with depressive symptoms in two studies (Schmikili et al., 2011; Terry et al., 2000). Terry et al. (2000) also found a positive relationship with anger and confusion, however, the relationship between anger and depressive symptoms was non-significant in Schmikili et al.'s (2011) study. Those with a previous history of clinical depression experienced higher depressive symptoms than those without (Yang et al., 2007). In addition, Prinz et al. (2016) found that athletes with depression during their career had higher scores in the first two years after their career than others who did not. Risky behaviours (i.e., regarding alcohol, drugs and sex) were not found to be significantly related to depressive symptoms (Dorsch et al., 2016).

In comparison to other ill-being measures, eating disorders pathology and its association with depressive symptoms was extensively examined. Giel et al. (2016) found that athletes with eating disorder pathology had higher depressive symptoms than those without. Eating disorder pathology was also positively correlated with depression (Bartholomew et al., 2011; Shanmugam et al., 2011, 2012, 2013, 2014b). However, Bravata et al. (2003) found a non-significant relationship for problematic eating patterns. However, when examining gender separately, female's problematic eating patterns were positively correlated with depressive symptoms. Whereas male's problematic eating patterns were negatively correlated with depressive symptoms (Bravata et al., 2003). One study examined eating disorder pathology longitudinally. Shanmugam et al. (2014a) found that initial eating disorder pathology positively predicted depressive symptoms six months later (controlling for baseline depressive symptoms), suggesting that this is a risk factor of depression.

2.3.4 Moderators

Moderators were examined in four studies and these were socio-demographic factors, life events and individual differences. Of these studies, only one significant moderating relationship was identified. Brewer et al. (1993) found that injury status (i.e., injured or non-injured) moderated the relationship between athletic identity and depressive symptoms. Injured athletes with a high athletic identity predicted higher levels of depression than uninjured athletes with a high athletic identity. However, injury status did not moderate the relationship for physical self-efficacy or stressful life events when predicting depression. In Manuel et al.'s (2002) study, coping ability and social support (two-way interactions) did not moderate the relationship between injury severity and depressive symptoms. In Gerber et al.'s (2011) study, athlete status (i.e., athletes or non-athletes) and sleep quality (two-way and three-way interactions) did not moderate the relationship between stress and depression. Finally, Terry et al. (2002) found that type of sport (i.e., rugby, rowing and netball) did not moderate the relationship between group cohesion and depressive symptoms. See table 2.1.

Table 2.1 Summary of studies examining prevalence, correlates, risk factors and moderators of depression

Authors/ date	Sample (*N*)	Design	Depression Measures	Prevalence (%)	Correlates	Risk Factors	Moderators
Appaneal et al. (2009)	164 athletes (84 Injured/ 80 healthy) (56F/108M)	Longitudinal Quasi-experimental	CES-D POMS-D SIGH-D interview	9.6% at 1 month 4.4% at 3 months post injury (clinical)	Females > males (SIGH-D) Injured > non injured (SIGH-D) Injury or gender (POMS/ CES-D)(nonsig)	Injured > non injured over 1 month (SIGH-D only)	
Armstrong & Oomen-Early (2009)	104 athletes (123 non-athletes) (136F/91M)	Cross-sectional Quasi-experimental	CES-D	33.5% athletes and non-athletes (major)	Athletes < non-athletes. Self-esteem (-), social connectedness (-) (groups combined)		
Arruza et al. (2009)	11 athletes (3F/8M)	Longitudinal Non-experimental	POMS-D	Not reported	Perceived development of competition plan (-), global self-evaluation of performance (-)		
Bartholomew et al. (2011) (study 1)	303 athletes (F only)	Cross-sectional Non-experimental	DASS	Not reported	Coach autonomy support (-), coach control (+), need satisfaction (-), need thwarting (+), disordered eating (+), vitality (-)		
Blakelock et al. (2016)	91 athletes (14 released at T2/11 at T3) (M only)	Longitudinal Quasi-experimental	GHQ-12	35.7% deselected at T2 54.5% deselected at T3 (depression/ anxiety)	Released players > retained players (post selection T2 at 7 days after and T3 at 21 days after)	Pre- and post-decision (all) (nonsig) Pre- and post-decision for released players (nonsig) Retained players scores reduced (T1-T3) (sig)	

Bravata et al. (2003)	57 athletes (39F/18M)	Cross-sectional Non-experimental	BDI-II	Not reported	Problematic eating patterns (nonsig) Problematic eating patterns for males (-) and females (+)	
Brewer (1993) Study 4	90 athletes (15 injured/75 uninjured) (M only)	Cross-sectional Quasi-experimental	BDI POMS-D	Not reported		Athletic identity x injury (sig) (BDI only) Physical self-efficacy x injury(nonsig) Life events x injury(nonsig)
Dorsch et al. (2016)	514 athletes (275F/237M)	Cross-sectional Quasi-experimental	CES-D short	Not reported	Males < females White student athletes < minority student athletes. Freshman > seniors Parental support (-), parental athletic engagement (-), athletic satisfaction (-) Contact with parents, emotional independence, functional independence, attainment of adult, risky behaviours (nonsig)	
Felton & Jowett (2015)	241 athletes (154F/87M)	Cross-sectional Non-experimental	BSI	Not reported	Anxious attachment (+), avoidant attachment (+), secure attachment (-), performance satisfaction (-), life satisfaction (-), negative affect (+), autonomy/ competence/ relatedness thwarting coach (all +), and autonomy, competence and relatedness thwarting sport (all +)	
Gerber et al. (2011)	258 athletes (176 non-athletes) (278F/156M)	Cross-sectional Quasi-experimental	Von Zerssen's Depression Scale	Not reported	Athletes < Non-athletes Males < females (groups combined) Age (+) (groups combined)	Athletic status x stress x sleep(nonsig)

Study	Sample	Design	Measure	Prevalence	Findings	Findings (cont.)
Giel et al. (2016)	1138 athletes (500F/638M)	Cross-sectional Quasi-experimental	PHQ-4	Not reported	Athletes with eating disorder pathology > athletes without eating disorder pathology	
Gouttebarge et al. (2015a)	253 athletes (149 current/ 104 former) (M only)	Cross-sectional Non-experimental	GHQ-12	26% current 39% former (depression/ anxiety)	Current players: Life events less than 12 months & Low social support from teammates (sig OR) Former players: Life events less than 12 months (sig OR) Severe injuries, surgeries, life events more than 12 months, and low social support from coaches/other staff (nonsig OR)	
Gouttebarge et al. (2015b & 2015c)	607 athletes (540 in 2015c) (M only)	Cross-sectional Non-experimental	GHQ-12	37.9% (2015b) 36.7% (2015c) (depression/ anxiety)	Severe injuries (+), career satisfaction (-) Surgeries and life events (nonsig) Career dissatisfaction (sig OR) Severe injuries and life events (nonsig OR) Life events less than 6 month (+) and career satisfaction (-) in Finland and Sweden only (findings from 2015c)	
Gouttebarge et al. (2016a)	295 former athletes (M only)	Cross-sectional Non-experimental	GHQ-12	28.4% (depression/ anxiety)	Career satisfaction (-) Life events (nonsig) Life events less than 6 months (OR sig) Life events more than 6 months (OR nonsig)	
Gouttebarge et al. (2016b)	204 athletes (108 at T2) (M only).	Longitudinal Non-experimental	GHQ-12	47.8% 20.7% at 6 months (depression/ anxiety)		Severe injury (sig OR) (6 months). Surgeries, recent life events and career dissatisfaction (nonsig OR).
Gouttebarge et al. (2016c) & Ramele et al. (2017)	219 former athletes (212 at T1/ 194 at T2 & T3) (M only)	Cross-sectional & Longitudinal Non-experimental	GHQ-12	35.3% 29% at 12 months (depression /anxiety)	Life events less than 6 months (sig OR) Severe injuries, surgeries, life events more than 6 months and career dissatisfaction (nonsig OR)	Life events (nonsig OR) (Ramele et al. 2017)

Gulliver et al. (2015)	224 athletes (118F/106M)	Cross-sectional Non-experimental	CES-D	27.2% F:30.5% M:23.6% (mild-major)	Injured athletes > non-injured athletes Relocating for sport (nonsig)	
Hammond et al. (2013)	50 athletes (22F/28M)	Cross-sectional Quasi-experimental	DSM-IV Interview BDI-II	34% (clinical) 22% (mild) 4%(moderate) F: 37% M: 18% (mild-moderate)	Females > males Top 25% swimmers > other 75% (interview only) Change in ranking and change in performance time (nonsig) Change in performance (-) (top 25% on interview only)	
Henderson et al. (1998)	20 athletes (F only)	Cross-sectional Quasi-experimental	POMS	Not reported	Moderate group integration- task > low/high group integration- task Group integration-social, individual attraction group-task/social (nonsig)	
Hutchinson et al. (2009)	34 injured athletes (19 non-athletes) (20F/33M)	Longitudinal Quasi-experimental	POMS	Not reported	Injured and non-injured (nonsig)	Difference between injured and non-athletes over two weeks (nonsig)
Jones & Sheffield (2007)	66 athletes (8F/58M)	Longitudinal Pre-experimental	POMS-short GHQ	Not reported	Win < loss (POMS)	
Jowett & Cramer (2009)	87 athletes (48F/39M)	Cross-sectional Non-experimental	SCL-90-R	Not reported	Negative spillover (+) Interpersonal trust, interpersonal commitment, hostile interactions, communication quantity and sport satisfaction (nonsig)	

Junge & Feddermann-Demont (2016)	471 athletes (182F/289 M)	Cross-sectional Quasi-experimental	CES-D	7.6% (mild-moderate) 3% (major) F: 13% M: 9% (mild-major)	Age and number of matches (-) Number of injuries in the previous 12 months (nonsig) Male league players < male U-21 and female league players Injured > uninjured Male U-21 > general population. Attackers > other positions. Playing more than one position> one position Highest level of play < lower levels of play	
Klinkowski et al. (2008)	51 athletes (55 anorexia patients/53 students) (F only)	Cross-sectional Quasi-experimental	SCL-90-R	Not reported	Anorexia patients > athletes/students Athletes and school students (nonsig)	
Leddy et al. (1994)	343 athletes (77 Injured/ 68 recovered/ 110 non-injured/ 58 late injured) (M only)	Longitudinal Pre-experimental	BDI	51% post-injury (mild-major) 12% post-injury (major)		Injured group/recovered > non-injured /late injured (post injury) Injured/late injured > non-injured/ recovered athletes (follow up)
Mahoney (1989)	50 athletes (28 elite/22 non-elite) (19F/48M)	Cross-sectional Quasi-experimental	SCL-90-R POMS	Not reported	Elite athletes < non-elite athletes (on SCL-90-R not POMS)	
Mainwaring et al. (2010)	51 athletes (16 concuss/7 ACL/ 28 healthy) (Gender N/A)	Longitudinal Quasi-experimental	POMS-D	Not reported	At baseline injured and non-injured groups (nonsig)	Injured > non-injured (post-injury)

Manuel et al. (2002)	97 athletes (56F/41M)	Longitudinal Pre-experimental	BDI	27% injury onset 21% at 3 weeks 17% at 6 weeks 13% at 12 weeks (mild-moderate)		Decrease in depression scores from onset (of injury) to 6 weeks and from onset to 12 weeks (sig)	Injury severity x social support (nonsig) Injury severity x coping (nonsig)
Martin et al. (2011)	25 athletes (12 selected /13 not selected) (F only).	Cross-sectional Quasi-experimental	POMS-D	Not reported	Paralympic members < non-members (those not selected)		
May et al. (1985)	73 athletes (35F/38M)	Cross-sectional Non-experimental	Zung Depression Scale	22% (clinical)	Life events (+), excessive worry (+) and general well-being (-)		
Nixdorf et al. (2013)	162 athletes (58F/104M)	Cross-sectional Quasi-experimental	CES-D	19% 15% professionals 20% junior professionals 29% amateurs (major)	Individual sports > team sports Those that desired (more) counselling > those who had less desire for (more) (nonsig for those with counselling) Chronic stress (+), negative coping strategies (escape, resignation, self-pity) (+), coping (positive self-instruction, situation control) (-) Gender, age, injury status, reaction control relationships with partner (nonsig)		
Nixdorf et al. (2016)	199 athletes (Gender N/A)	Cross-sectional Non-experimental	CES-D	Not reported	Individual sports > team sports. Perfectionism- expectations from others (+), negative attribution after failure (+), cohesion (-)		

Petito et al. (2016)	133 athletes (M only)	Cross-sectional Non-experimental	POMS DSM-IV interview	Not reported	Neuroticism (+) (POMS)	
Plante & Booth (1997)	40 athletes (M only)	Cross-sectional Non-experimental	SCL-90-R	Not reported	Batting performance (-) Fielding performance, pitching performance coaches ratings (nonsig)	
Prinz et al. (2016)	157 athletes (F only)	Cross-sectional Quasi-experimental	CES-D PHQ-2	During career: 32.3% (major) 25.2% (mild-moderate) 8.5% 2 years after career (major)	Attackers/goalkeepers > other positions. 2nd highest or 2nd lowest level > other levels More reasons (injury/ stress/ performance decline) > those with less reasons Want psychotherapy > not want psychotherapy Injuries (+) and depression during career (+) Those with clear career plans < those that did not Age, number of injuries, duration of football career or time since end of the football career (nonsig)	
Proctor & Boan-Lenzo (2010)	66 athletes (51 non-athletes) (M only)	Cross-sectional Quasi-experimental	CES-D	15.6% (mild-major)	Student-athletes < non-athletes (controlling for task-oriented/emotion-oriented coping strategy) Emotion-oriented coping (+), task-oriented coping (-) (groups combined)	
Roiger et al. (2015)	21 athletes (7 concuss/7 other injured/ 7 noninjured) (Gender N/A)	Longitudinal Quasi-experimental	CES-D	14.2% injured (mild-major)	At baseline injured and non-injured groups (nonsig)	Increase for injured groups between baseline and 1 month (sig) At 3 months (nonsig)

Schaal et al. (2011)	2067 athletes (723F/1345 M)	Cross-sectional Quasi-experimental	DSM-IV interview	3.6% F:4.9% M: 2.6% Lifetime: 11.3% F: 16.3% M: 8.7% (clinical)	Females > males Age (2.2% over 21, 0.8% in 18 -21, and 0.3% in under 18's) (sig) Aesthetic and aiming/fine motor skills sports > other sports (racquet, ball, racing, contact, risk sports)	
Schmikli et al. (2011)	15 athletes (8 perform decrement / 7 controls) (Gender N/A).	Cross-sectional Quasi-experimental	POMS-D short	Not reported	Performance decrements group > control group Fatigue (+) and tension (+) (performance decrement group only) Vigour and anger (nonsig)	
Schofield et al. (2002)	223 athletes (43F/180M)	Cross-sectional Non-experimental	CES-D	Not reported	Conditional goal setting (+), somatic anxiety (+), cognitive anxiety (+), self-confidence (-)	
Schofield et al. (2004)	58 athletes (33F/25M)	Cross-sectional Non-experimental	CES-D	Not reported	Somatic anxiety (+) cognitive anxiety (+) and self-confidence (-), conditional goal setting (+) Performance (nonsig)	
Shanmugam et al. (2011, 2012, 2013 & 2014a)	588 athletes (411 in 2012&2013/ 122 in 2014) (346F/242M)	Cross-sectional & longitudinal Non-experimental	SCL-90-R	Not reported	Females > males (2011) Avoidant attachment (+), anxious attachment (+), parental conflict (+), coach conflict (+), parental support (-), coach support (-), teammate support (+), teammate conflict (+), personal standards perfectionism (+), self-criticism perfectionism (+), eating psychopathology (+), self-esteem (-) Personal standards perfectionism (nonsig in 2012/2013), parental support (nonsig in 2013)	Eating psychopathology (+) depressive symptoms 6 months later (2014a)

Shanmugam et al. (2014b)	152 athletes (147 non-athletes) (94F/58M)	Cross-sectional Non-experimental	SCL-90-R	Not reported	Fathers' autonomy (-), fathers' involvement (-), coach autonomy (-), coach involvement (-), social anxiety (+), self-criticism perfectionism (+), loneliness (+), eating disorders (+) Mothers' autonomy, mothers' involvement and self-esteem (non sig)	
Smith et al. (1993)	276 athletes (36 injured) (38 F/238 M)	Longitudinal Quasi-experimental	POMS	Not reported	Preinjury gender differences, level of participation and type of sport (nonsig)	Pre-injury < post-injury
Stirling & Kerr (2006)	44 athletes (24F/20M)	Cross-sectional Non-experimental	POMS	Not reported	Perfectionism dimensions: parental expectations (+), coaching staffs' expectations (+) Self-expectations, other athletes' expectations, significant others' expectations, expectations of other athletes, and total perfectionism (nonsig)	
Storch et al. (2002,2005)	105 athletes (51F/54M) (293 non-athletes in 2005)	Cross-sectional Non-experimental/ Quasi-experimental	PAI	13.5% F:9.8% M:3.7% (clinical) (2005)	Intrinsic religiosity (-) (2002) Female athletes > male athletes and non-athletes (2005) Athlete/non-athlete status (nonsig) (2005)	
Terry et al. (2000)	415 athletes (Gender N/A)	Cross-sectional Quasi-experimental	POMS	Not reported	Attraction to group-task (-), attraction to group-social (-), group integration-task (-), group integration-social (-), tension (+), anger (+),vigor (-), fatigue (+), confusion (+)	Team cohesion x sport type (nonsig)
Weigand et al. (2013)	280 athletes (163 former /117 current) (152F/120M)	Cross-sectional Quasi-experimental	Wakefield Depression Scale	16.8% current 8% retired (mild-major)	Current college athletes > former graduated athletes	

Wippert & Wippert (2010)	42 athletes (4 voluntary/ 17 involuntary retired) (23 F/ 19 M)	Longitudinal Quasi-experimental	SCL-90-R	Not reported	Involuntary retired group > voluntary retired at 10 days after At 5.5 months after (nonsig)	Difference between 10 days and 5.5 months for involuntary retired group (nonsig)
Wolanin et al. (2016).	465 athletes (263F/199M)	Cross-sectional Quasi-experimental	CES-D	23.7% F: 28.1% M:17.5% (mild-major) 6.3% F:7.5% M:4.8% (moderate- major)	Females > males Track and field athletes > other sports (cheerleading, rowing and team sports) Gender and sport type at moderate-major symptoms (nonsig)	
Yang et al. (2007)	257 athletes (90F/167M)	Cross-sectional Quasi-experimental	CES-D	21.4% F:25.6% M:19.2% (mild-major) 6.2% (moderate) 3.1% (major)	Previous history of clinical depression > no history Pain > no pain Gender, race, residence status, sport type, history of injury, history of depression, pain, college years (nonsig/nonsig OR) State anxiety (+), trait anxiety (+) pain (+)	
Yang et al. (2014)	594 injured athletes (131F/256M)	Longitudinal Non-experimental	CES-D	22.2% return after injury (mild-major)	Athletes satisfied with social support from athletic trainers (AT) < with athletes who were dissatisfied with the social support from ATs Those who did receive social support from ATs and those who did not (nonsig)	
Zhang et al. (2014) (study 2 & 3)	330 athletes (177F/153M)	Cross-sectional Non-experimental	BDI POMS-D short	Not reported	Experiential avoidance (+)	

Note. <> indicate direction of significant difference of depressive symptoms between groups. (+) or (-) indicates the significant relationship with depression. Nonsig = nonsignificant relationship. Sig = significant relationship. OR = odds ratio. F = females. M = males.

2.4 Discussion

This study provided the first comprehensive review of depression in athletes. The systematic review examined the prevalence, psychosocial correlates and risk factors, and moderators of depression. Fifty-nine studies met the inclusion criteria (six studies used the same data set) and were included in the review. Prevalence was variable among athletes. This was dependent on the instruments that were used, differences in the reported severity of depression and consideration of contextual factors such as gender or competitive level. The majority of studies examined psychosocial correlates of depression as most studies used a cross-sectional design. In contrast, few studies had examined psychosocial risk factors of depression (temporal precedence). In line with other research examining depression, very few studies in sport have investigated moderators of depression.

2.4.1 Prevalence of depression in athletes

Prevalence of depression was reported in 24 studies. The severity of depression was differentiated by depressive symptoms (i.e., mild to major) and clinical depression. This distinction was dependent on the instruments used and how the authors chose to report depression. Seven different instruments were used to examine prevalence of depressive symptoms. Of those that reported overall mild to major depressive symptoms, values ranged from 11% to 58%. The CES-D was the most commonly used measure of depressive symptoms and the calculated mean prevalence for mild to major symptoms was 25%. At present, little is known about the prevalence of depressive symptoms in the general population and therefore little comparison can be made. However, it is generally accepted that the severity of depressive symptoms is a strong indication of vulnerability to clinical depression (i.e., major depressive disorder) (Fergusson, Horwood, Ridder, & Beautrais, 2005).

Four different instruments were used to examine prevalence of clinical depression. Of the studies that examined clinical depression the reported prevalence values ranged from 4% to 34% (average prevalence was 16%). In comparison, prevalence of major depression across the general population is typically reported to be 4% to 5% (Dobson & Dozois, 2011; Kessler & Bromet, 2013). Consequently, it appears that athletes may be experiencing higher than average clinical levels of depression. This is also supported by relatively high levels of depressive symptoms (i.e. up to 58%). However, the range in reported prevalence is larger and more widespread than other reviews in sport have found (1%-33.5%, Frank et al., 2015; 4-34%, Rice et al., 2016; 16%-21%, Wolanin et al., 2015). In these reviews, there was no explicit differentiation between symptoms and clinical levels of depression. With this in mind, caution should be taken when interpreting these findings as there are methodological differences which may account for some variability. In addition, it is important to consider contextual factors that may also explain the variability in reported prevalence in athletes.

Age and gender may be two factors to consider when examining prevalence in athletes. Adolescents have a higher prevalence of clinical depression (up to 20% by late adolescence) attributed to biological and social changes that occur in this period (Thaper et al., 2012). In this review half of the studies that reported prevalence recorded a mean age of 13 to 21 years. As such, peak competitive years for athletes overlap with adolescent years and may account for higher prevalence rates (Gulliver, Griffiths, & Christensen, 2010, 2012). Regarding gender, females reported a consistently higher prevalence of depressive symptoms and clinical depression than males (13%-37% depressive symptoms and 5%-10% clinical levels versus 9%-23% depressive symptoms and 3%-4% clinical levels) in seven studies. Research consistently demonstrates that females experience higher levels of depression than men, which has been attributed to differences in biological responses, self-concept and coping styles (Abate, 2013; Kessler, 2003).

There were also sport specific discrepancies in prevalence pertaining to competitive level. Specifically, athletes competing at a lower level had a higher prevalence of depression than athletes competing at higher level. There were also differences in prevalence between current and former athletes. However, prevalence was mixed with current athletes reporting higher prevalence in some cases and former athletes reported higher prevalence in others. There were also differences in the prevalence of depression in injured athletes. Specifically, depression prevalence typically decreased over time after injury onset. These sport specific differences may help to explain the variability in reported prevalence. Consequently, it may be important to consider any situational differences as well as socio-demographic differences when reporting prevalence of depression in athletes.

2.4.2 Correlates and risk factors of depression in athletes

Forty-nine studies examined correlates of depression. Correlates of depression were identified as socio-demographic factors, life events, performance and career satisfaction, individual differences, interpersonal relationships and support, and psychological well-being and ill-being. 'Protective' correlates (e.g., inverse relationship with depression) of depression were also reported in some cases where studies had examined them. Thirteen studies examined risk factors of depression. Thus, relatively few studies used a longitudinal design. As such, risk-factors were identified in two of the themes which were life events (injuries and released/involuntary retirement) and psychological ill-being (eating disorder pathology).

2.4.2.1 Correlates

Socio-demographic factors. These were identified as gender, age, race, type of sport, position of play, and athlete status (athlete vs non-athlete). Across all socio-demographic factors there was mixed evidence (i.e., some non-significant findings). This may be because socio-demographic factors should be considered to be 'setting

conditions' as they serve as distal factors (Dobson & Dozois, 2011). Specifically, it is acknowledged that some of these factors are clearly related to depression (e.g., gender). However, on their own, socio-demographic factors provide little explanation as to why these associations exist and we need to know more about the psychological, social and biological processes associated with these setting conditions (Dobson & Dozois, 2011).

Life events. These were identified as relocation, release/retirement, injuries, surgeries and general life events. There was mixed evidence in studies investigating the relationship between life events and depression. This may be because not all individuals that encounter negative life events will experience depression (Ingram et al., 2009). It is the way these events are perceived which may expose individuals to stress and depression may develop (i.e., stress exposure model of depression). Life events present a psychological threat up to 14 days following the event and have etiological relevance to the onset of depression up to 38 weeks prior to the event (Harkness, 2011). Thus, studies that examine the impact of significant life events over time will be particularly compelling.

Performance and career satisfaction. These were identified as correlates of depression. Performance satisfaction, feeling prepared for competition, and career satisfaction were protective in some studies. Athletes experiencing performance decrements had higher depression scores than those that were not. In a similar way to life events, there was mixed evidence and this may be dependent on the degree to which performance failure creates stress and the importance placed on one's athletic identity (Doherty et al., 2016). With this in mind, to fully understand the association between performance and career satisfaction it is important to investigate a number of moderating factors that may help to explain this relationship particularly over time. For example, examining maladaptive psychological factors such as an athlete's attributional style to perceived failure may provide further insight (Abramson et al, 1978; Rees, Ingledew, & Hardy, 2005).

Individual differences. These were coping strategies, experiential avoidance, conditional goal-setting, self-confidence, intrinsic religiosity, attribution to failure and personality characteristics. Self-confidence and intrinsic religiosity (belief systems) were found to be negative correlates of depression. Some coping strategies were also found to be negatively correlated with depression (i.e., positive self-instruction, situation control and task-oriented). Conversely, other coping strategies were found to be positively correlated with depression (i.e., avoidance, emotion-focused, self-pity and resignation). Conditional goal setting and negative attribution to failure were also identified as positives correlates of depression. These findings are consistent with others as there is much support theoretically and empirically for the association between maladaptive cognitions and behaviours and the development of depression (Alloy et al., 2011). Personality characteristics neuroticism, trait anxiety and some dimensions of perfectionism were also identified as correlates of depression. Personality and its relationship with depression have received much attention outside of sport research (Klein, Kotov, & Bufferd, 2011). Specifically, it is suggested that some personality characteristics are fundamental in generation of stress and subsequent depression. Although these findings appear promising, few studies have investigated these relationships and therefore require further examination in sport, particularly over time.

Interpersonal relationships and support. These were attachment style, basic psychological needs, quality of relationships and support from others, seeking professional support and group cohesiveness/sense of belonging. Secure attachment, psychological needs satisfaction and support/engagement from coaches and parents, group cohesion and social connectedness were protective correlates. Anxious and avoidant attachment, basic needs thwarting, coach conflict, coach control, dissatisfaction with coaching staff support, parental conflict, and loneliness were identified as correlates of depression. Studies examining the relationships with teammates and partners on depression and seeking professional help provided mixed

evidence and therefore it is difficult to draw conclusions at this stage. However, there is theoretical and empirical support which suggests that relationships, including working relationships, are important in the development of depression in the general population (Battams et al., 2014; Dobson, Quigley, & Dozois, 2014). Specifically, social support may buffer the effects of depression and perceiving rejection/low social support from others may be harmful both prior to onset and during the depressive period (Lakey & Cronin, 2011). Like individual differences, this appears to be a fruitful area for future investigation to understand the role interpersonal relationships and support plays in the development and sustainability of depression in athletes.

Psychological well-being and psychological ill-being. Psychological well-being was identified as protective correlates. These were self-esteem, vitality, life satisfaction, and general well-being. The absence of well-being is associated with higher risk of depression and it is suggested that promoting well-being and positive psychological functioning may be a useful preventative strategy (Rashid & Anjum, 2008). In contrast, psychological ill-being was identified as correlates of depression. These were stress, worry/anxiety, previous depression, fatigue, anger, confusion, and eating disorder pathology. It is generally accepted that experiencing ill-being such as stress and history of previous depression is a vulnerability factor of depression (Ingram et al., 2009). However, without examination over time it is not clear whether ill-being is an antecedent or consequence of depression.

2.4.2.2 Risk Factors

Injuries. When examining life events, injuries had received the most empirical attention. In total, eight studies had examined injuries over time. In seven of these studies, findings suggested that injury may be a risk factor of depression. These studies demonstrated differences between injured and non-injured athletes and other studies demonstrated an increase in depression after injury onset. This increase in depression

after initial injury onset has been attributed to a sudden lack of sport involvement and feeling left out of activities (Gulliver et al., 2012; Johnston & Carroll, 1998). There was also a decrease in depression after a period of time and this may be because athletes become motivated to train and remain part of the team as they progress through rehabilitation (Carson & Polman, 2008; Gulliver et al., 2012).

Released/involuntary retirement. Athletes released from their club or involuntary (unplanned) retirement was another life event that was identified as a possible risk factor of depression. In total, two studies had examined athletes that were released or involuntary retired over time. Specifically, athlete depression remained high over a period of time after these events had occurred. Like injuries, unplanned events such as being released may be a risk factor of depression because athletes who strongly identify with the athletic role may be more vulnerable to depression when their athlete status is under threat (Doherty, Hannigan, & Campbell, 2016; Brown & Potrac, 2009). Consequently, when life events are perceived as being outside one's control this may be especially problematic to one's psychological health (Liu & Alloy, 2011).

Eating disorder pathology. One longitudinal study examined the relationship between eating disorder pathology and depression and found it to be a possible risk factor (Shanmugam et al., 2014a). Specifically, eating disorder pathology predicted depression over a six month period. Research outside of sport has also evidenced this relationship in a systematic review (Puccio, Fuller-Tyszkiewicz, Ong, & Krug, 2016). In this review, the authors' suggested that failure to control eating habits and achieving idealised standards may contribute to depression. Although the findings indicated that depression did not predict eating disorder pathology over time in this study, testing the reciprocal relationship (rather than uni-directional relations) may be an avenue for future research. This is because reciprocal relationships between eating disorders and depression have been found in non-athlete adolescent samples (e.g., Ferreiro, Wichstrom, Seoane, & Senra, 2014).

2.4.3 Moderators of depression in athletes

Four studies examined moderators of the risk factor-depression relationship. One study found a significant moderating relationship of injury status (i.e., injured/non-injured) on athletic identity when predicting depression (Brewer et al., 1993). Specifically, having a high athletic identity and sustaining an injury predisposes athletes to depressive symptoms. Having a strong attachment with sport and experiencing a life event (e.g., injury) which threatens one's sporting career is thought to increase the likelihood of depression (Doherty et al., 2016). Injury status did not moderate physical efficacy or stressful life events in this study. Nor was injury severity moderated by coping ability or social support (Manuel et al., 2002). In the other studies, sleep quality and athlete status did not moderate stress (Gerber et al., 2011) and type of sport did not moderate group cohesion (Terry et al., 2002) when examining depression.

With so few studies investigating moderating factors in sport there is an opportunity to develop our understanding and provide further insight into the vulnerability of depression in athletes. This is particularly important given that depression may develop as a result of multiple causal chains (Kraemer et al., 2001). Based on the current body of research outside of sport, examining cognitive factors (e.g., dysfunctional attitudes) and social factors (e.g., interpersonal relationships) as moderators in the stress-depression relationship and personality-depression relationship indicate worthy avenues of investigation (Harkness, 2008; Klein et al., 2008). Consequently, examining moderators can help to uncover the complexity of behaviour, experiences, and relationships and may indicate possible avenues of intervention (MacKinnon, 2011; Rumbold et al., 2012).

2.5 Conclusion

This study is the first comprehensive systematic review to investigate prevalence, psychosocial correlates and risk factors, and moderators of depression in athletes. The current findings suggest that prevalence of depression in athletes is variable (i.e., 11% to 58% depressive symptoms; 4% to 34% clinical depression) and may be dependent on a number of factors such as methodological or contextual differences. Correlates of depression were socio-demographic factors, life events, performance and career satisfaction, individual differences, interpersonal relationships and support, and psychological well-being and psychological ill-being. Risk factors of depression were identified as life events (injuries and deselection/retirement) and psychological ill-being (eating disorder pathology). As few studies examined possible risk factors, longitudinal designs will help towards establishing temporal precedence and indicate possible risk factors of depression in athletes. Finally, few studies examined moderators. Moderators were injury status, athlete status, sleep quality, coping ability, social support and sport type. However, only injury status moderated the relationship between athletic identity and depressive symptoms. Thus, examining moderating factors of depression in athletes can help to uncover the complexities of these relationships.

Chapter 3 – Perfectionism and its relationship with psychological ill-being

The findings from study one provides evidence that athletes may be vulnerable to depression. The systematic review indicated that prevalence of depression in athletes is variable and there may be a variety of factors that contribute to depression. In the review, personality characteristics were identified as correlates of depressive symptoms. Perfectionism was one personality characteristic that was found to be a positive correlate of depression in athletes. Perfectionism is also known to be associated to other ill-being outcomes such as burnout in athletes and other populations (Hill & Curran, 2016). With this in mind, perfectionism was selected as a primary focus for the remainder of the thesis. The purpose of this chapter was to provide an overview of perfectionism and research that has examined it. First, a conceptualisation of perfectionism is presented. This is followed by a review of research that has examined perfectionism and ill-being outside of sport. The final part of the chapter provides a brief overview of research examining perfectionism and ill-being in sport.

3.1 Conceptualising perfectionism

Over the years, researchers have made many attempts to define perfectionism. However, there is still little agreement on its precise defining characteristics and this was demonstrated by Flett and Hewitt (2002) who observed more than 20 different definitions of perfectionism. Although opinion is divided on which specific characteristics an individual must exhibit to be identified as a perfectionist (Hall, Hill, & Appleton, 2013), it is broadly accepted that perfectionism is a multidimensional trait which encompasses the pursuit of exceedingly high standards accompanied by overly critical evaluations (Frost, Marten, Lahart, & Rosenblate, 1990). Some researchers believe that perfectionism can exist in both adaptive and maladaptive forms (Rice,

Ashby, & Slaney, 1998; Stoeber & Otto, 2006; Terry-Short, Owens, Slade, & Dewey,

1995). Others have contended that while it does elicit some positive aspects (e.g.,

favourable performance outcomes and high standards), perfectionism is fundamentally

dysfunctional as there is always the possibility of underlying cognitions associated with

perfectionism, leading to psychological distress (Flett & Hewitt, 2002; Greenspon,

2000; Hall, Hill, & Appleton, 2012).

A number of researchers have provided historical overviews of perfectionism

(e.g., Hall et al., 2012; Hewitt, Flett, & Mikail, 2017; Hill, 2016). As described by these

researchers, early conceptualisations of perfectionism originated from the clinical and

counselling contexts. Historically, perfectionism has been regarded as a debilitating

personality characteristic. Alfred Adler and Karen Horney were among the first to

express views on perfectionism. Adler (1956, 1958) suggested that those who

continually compare themselves against a perfect ideal are prompted to continue in this

quest by their own sense of inferiority. Horney (1950) recognised that we are

bombarded with messages about an "ideal life" and she suggested that perfectionism

developed from the distorted beliefs of defective relations with others that can be

overcome by striving for flawlessness.

In subsequent theorists' view of perfectionism, this relentless pursuit of

demanding flawlessness and high personal standards from the self was considered a key

characteristic (Burns, 1980). In addition to this pursuit of perfectionistic standards,

perfectionism was also driven by irrational beliefs and dysfunctional attitudes

(Weissman & Beck, 1978). Ellis (1962) believed that these irrational beliefs originated

from thoughts that we should be competent and achieving in all respects, rather than

accepting that we have imperfections. In Pacht's (1984) work, he identified that

perfectionism was a recurrent theme among his clients. He stated that "perfection per se

does not exist in reality, but it is the striving for the non-existent perfection that keeps

people in turmoil" (p. 386).

Early researchers favoured a unidimensional approach to perfectionism. This was because perfectionism was largely viewed as a maladaptive construct centred on self-related dysfunctional attitudes, distorted beliefs or cognitions. However, most thoughts and ideas about perfectionism were based on the personal experiences of clinicians and theorists. This led to the development of unidimensional instruments which measured self-defeating attitudes associated with depression and anxiety (e.g., Burns Perfectionism Scale, BPS: Burns, 1980; Eating Disorders Inventory, EDI: Garner, Olmstead, & Polivy, 1983). Although these measures were beneficial for the development of the field they predominantly focused on cognitive factors (i.e., beliefs and attitudes) and intrapersonal dimensions (Hewitt & Flett, 1991; Flett & Hewitt, 2002).

3.1.1 Multidimensional perfectionism

Our contemporary understanding of perfectionism has since developed. It is now widely accepted that perfectionism is a multidimensional personality construct. Frost et al. (1990) and Hewitt and Flett (1991) were the first to identify perfectionism as multidimensional. They recognised that perfectionism encompassed a number of dimensions and have been highly influential in our understanding of perfectionism and the advancement of this field. Over the past 25 years, Hewitt and Flett have continued to develop the conceptualisation of perfectionism through their research and clinical work. As a result, their theoretical perspective of perfectionism has a solid and substantiated foundation (Flett & Hewitt, 2002). This has led to the recent introduction of the Comprehensive Model of Perfectionistic Behaviour (CMPB) which integrates the multilevel and multifaceted components of perfectionism (Hewitt et al., 2017).

The CMPB depicts the intrapersonal and interpersonal nature of perfectionism and incorporates traits, self-presentational facets, and automatic thoughts of perfectionistic behaviour. Perfectionism traits are identified as self-oriented

perfectionism, socially prescribed perfectionism and other-oriented perfectionism (Hewitt & Flett, 1991). Self-oriented perfectionism (SOP) is self-directed and involves the requirement of perfectionism from the self. Those high in SOP set their own high personal standards and adopts a harsh self-critical style to enable them to meet those standards. SOP is more than wanting to do well. The emphasis is on the importance of attaining perfection in domains that are highly significant to the individual. Self-evaluations of success and failure are typically guided by social comparisons (Hewitt et al., 2017).

Socially prescribed perfectionism (SPP) is an individual's perception of unrealistically high standards they believe others expect of them. That is, they believe that perfectionistic standards are imposed on them. If these standards are not met they perceive that they will be subjected to harsh criticism from others (e.g., friends, family, colleagues or strangers). SPP can also capture the societal pressures to be perfect that exist. Interpersonal needs are particularly relevant to this dimension as the individual seeks acceptance and affection, and wants to avoid rejection from others. Although an individual will aim to achieve success, they also perceive that achieving success will bring higher expectations and demands from others (Hewitt et al., 2017).

Other oriented perfectionism (OOP) is externally directed. It is the unrealistic expectations that people place on others (e.g., friends, family, colleagues or strangers). That is, the importance is placed on others as the individual high in OOP expects others to attain perfection or function at the perfect level. When these standards are not met this leads to harsh and stringent evaluation and criticism of other people. Consequently, those in contact with individuals high in OOP receive little reward or praise and feel that they can never please them. In addition, those high in OOP expect loyalty and support and will view others dichotomously as either supportive or antagonistic (Hewitt et al., 2017).

In most cases, the trait dimensions are positively correlated and individuals may vary as to whether they are high in one, two or all three dimensions. To measure the trait dimensions Hewitt and Flett (1991) developed the 45 item Multidimensional Perfectionism Scale (HMPS). The HMPS includes the three subscales of perfectionism that capture SOP, SPP and OOP. Since the development of HMPS, shortened versions of this measure have become preferable. This is because the factor analytic research conducted by Cox, Enns and Clara (2002) tested the HMPS and demonstrated strong support for the three-factor model, although good fit was determined by a number of reduced items (15 items). As a result, Cox and colleagues noted that a reduced set of items which focused on the salient items would be more appropriate.

Although the trait dimensions of perfectionism are of predominant focus, it is also important to highlight the intrapersonal (cognitive) and interpersonal components (self-presentational) of perfectionism. This is because these components also contribute unique elements to the overall construct of perfectionism (Hewitt et al., 2017). In addition, considering these components also demonstrate the heterogeneity between people and the multifaceted and multilevel nature of perfectionism (Hewitt et al., 2017). Perfectionistic cognitions are the intrapersonal component and reflects automatic thoughts and images involving the need to be perfect (Flett, Hewitt, Blankstein, & Gray, 1998). Specifically, this component captures the cognitive elements that are central to perfectionism such as processing evaluative information and being critical of the self. It is the preoccupation with the need to be perfect through one's internal dialogue which results in automatic thoughts (i.e., discrepancy between the actual self and the ideal self) (Hewitt et al, 2017).

Perfectionistic self-presentation is the interpersonal component of perfectionism and reflects the drive to display one's perfection or conceal one's imperfection (Hewitt et al., 2003). It is considered a dynamic interpersonal style comprising of three facets of perfectionistic self-presentation. These are perfectionistic self-promotion, non-display of

imperfection and nondisclosure of imperfection. Perfectionistic self-promotion is displaying and proclaiming perfection to others. These individuals aim to demonstrate to others that they are competent and successful and this communicated through their behaviour and actions. Non-display of imperfection is the concealment of imperfections. These individuals aim to avoid showing others their imperfections and may choose not to participate in activities that may expose their perceived flaws. Non-disclosure of perfection is the avoidance of verbal admission to imperfection. These individuals avoid discussing topics such as expressing their personal thoughts or emotions where they may be viewed negatively by others (Hewitt et al., 2017).

Together the perfectionism traits, self-presentational styles and cognitions reflect the multidimensional perfectionism construct. Specifically, the components of the CMPB are considered to interact with one other and help to explain the various combinations of perfectionism and individual differences depending on the context. Although these individual components have been found to overlap, they also predict the unique variance in outcomes (e.g., Flett et al., 1998; Flett et al., 2003). That is, they should be considered to be independent of one another. In sum, the CMPB helps to explain the functionality of perfectionism and demonstrates the different levels of perfectionistic behaviour (Hewitt et al., 2017).

3.1.2 Approaches to perfectionism

Although Hewitt and Flett (1991; Flett & Hewitt, 2002) have provided a multidimensional theoretical perspective of perfectionism, there is an ongoing and unresolved debate amongst researchers regarding how we should measure and best understand perfectionism. These debates have been especially focused towards labelling and typologies of perfectionism. As these debates are important and provide a backdrop for research examining perfectionism, the next section of this chapter will address the

different approaches that have been taken to understand perfectionism and then provide concluding remarks on the theoretical approach taken in this thesis.

3.1.2.1 Adaptive and maladaptive perfectionism

One of the most contentious issues in the conceptualisation of perfectionism is the idea that perfectionism assumes both adaptive and maladaptive forms (i.e., healthy and unhealthy perfectionism). This has been reflected in combining the dimensions of the HMPS (Hewitt & Flett, 1991) and dimensions of Frost and colleagues' (1990) multidimensional Perfectionism Scale (FMPS) and then disaggregating the subscales to separate the maladaptive features from adaptive features. Adaptive perfectionism includes the facets of SOP from the HMPS, and high personal standards from the FMPS. Maladaptive perfectionism typically includes the facets of SPP from the HMPS and concern over mistakes, doubts about actions and parental criticism dimensions from the FMPS (Blankstein & Dunkley, 2002). Some researchers have also suggested that the FMPS and HMPS originated from a dysfunctional perspective of perfectionism used with clinical populations. This has since led to the development of new instruments to reflect a dual nature of perfectionism (e.g., Positive and Negative Perfectionism Scale: Terry-Short et al., 1995).

Before the development of psychometric instruments, Hamachek (1978) was the first to explicitly describe two independent forms of perfectionism: "neurotic" (i.e., negative) and "normal" (i.e., positive). These forms of perfectionism were based on clinical experience and anecdotal evidence, and focused on healthy and unhealthy striving to reach high standards. Neurotic perfectionists are characterised as striving for unreachable standards, driven by a fear of failure and never feeling satisfied with the outcome leading to negative emotions, behaviours and cognitions. Whereas normal perfectionists take satisfaction in striving for high standards, accept their mistakes, and set realistic targets leading to positive emotions, behaviour and cognitions.

Others have challenged the concept of a positive perfectionism and likened Hamachek's (1978) "normal" perfectionism to conscientiousness and achievement striving (Hall et al., 2012; Hewitt & Flett, 2006; Greenspon, 2000). Greenspon (2000) was particularly vehement in his views and criticised Hamachek's conceptualisation. He stated that it is inappropriate to label perfectionism as normal because the description of normal perfectionism is misleading "as it does not refer to perfectionism in any way" (p. 198). Moreover, he stated that what Hamachek is actually describing is the difference between perfectionists and non-perfectionists. While it is widely accepted that perfectionism does include adaptive qualities and also has the potential to lead to positive consequences (e.g., good performance), it is a maladaptive construct that can lead to dysfunctional patterns of achievement striving bringing about psychological distress (Hewitt & Flett, 2006).

3.1.2.2 The tripartite model of perfectionism

The categorical structure of classifying perfectionism as types has since developed. Popularised by Stoeber and Otto (2006), the tripartite model is a model that differentiates between three subtypes: adaptive perfectionism, maladaptive perfectionism, and non-perfectionism. These were based on two broader dimensions termed perfectionistic strivings (PS) and perfectionistic concerns (PC) that reflect the individual features of both HMPS, FMPS and sometimes other perfectionism measures (i.e., PS typically includes SOP and high personal standards and PC typically includes SPP, concern over mistakes, doubts about actions and parental criticism dimensions). Adaptive perfectionists are high in personal strivings but low in evaluative concerns. Maladaptive perfectionists are high in both personal strivings and evaluative concerns. Non-perfectionists are low in personal strivings.

Stoeber and Otto (2006) reviewed 35 studies that measured both adaptive and maladaptive perfectionism. When these subtypes were compared maladaptive

perfectionists demonstrate negative characteristics which are considered to be the most psychologically debilitating. Conversely, adaptive perfectionists demonstrate positive characteristics which are considered a good psychological adjustment compared to the other two subtypes. However, when conducting this review they controlled for overlap between PS and PC. Consequently, partialling PS from PC conceptually changes the construct which no longer measures what was originally intended (Hill, 2014). This may not be a natural representation of perfectionism as it suppresses the interactive nature of these dimensions and may discredit the multidimensionality of the construct.

Another concern with the tripartite model and those that have measured the two types of perfectionism is labelling. Using adaptive/healthy and maladaptive/unhealthy to describe perfectionism may be unhelpful and misleading. These terms presuppose the effects of perfectionism (e.g., health promoting effects), misconstruing adaptive and maladaptive to be fixed and permanent (Hill 2016). This is particularly relevant as the central tenet of the tripartite model is to distinguish between types of perfectionism. However, it is it is not clear how these labels truly represent the lives and experiences of individuals. At present, there is little evidence to support the notion that these typologies of perfectionism exist beyond the descriptive structures imposed on participants (Hill & Madigan, 2017).

3.1.2.3 The 2 x 2 model of perfectionism

The 2 x 2 model of perfectionism is a more recent development in the literature (Gaudreau & Thompson, 2010; Gaudreau, 2012; Gaudreau & Verner-Filion, 2012). This is an extension of the tripartite model in many ways as it is a categorical approach but this model differentiates between four different sub dimensions. In addition, Gaudreau and colleagues use different labels to ensure they do not presume the adaptive or maladaptive nature of perfectionism. The model is based on two dimensions: personal standards perfectionism (PSP or PS: e.g., SOP, OOP, organisation and personal

standards) and evaluative concerns perfectionism (ECP or PC: e.g., SPP, concern over mistakes, doubts about action and parental pressure). These are used to differentiate between the four sub dimensions: non-perfectionism, pure personal standards perfectionism, pure evaluative concerns perfectionism and mixed perfectionism.

Non-perfectionists have low levels of PSP and ECP, therefore are unaffected by perceived internal or external pressures to pursue high standards. Pure personal standards perfectionists have high levels of PSP but low levels of ECP and refer to individuals who internally strive to meet their high personal standards. Pure evaluative concerns perfectionists have low levels of PSP and high ECP which reflects those that perceive pressure to come from external sources to achieve high standards rather than inwardly. This is considered the most maladaptive of the four subtypes. Mixed perfectionists are high in both PSP and ECP, and perceive pressure from not only their social environment but also personally endorse a need to achieve high standards. The model aims to emphasise the multidimensional nature of perfectionism. In addition, Gaudreau and colleagues state that ECP and PSP coexist to varying degrees which is acknowledged by the four sub dimensions.

Hill and Madigan (2017) have recently claimed that the 2 x 2 model has rendered the use of the tripartite model as obsolete. This is because the 2 x 2 model does not aim to classify perfectionism as 'adaptive' or 'maladaptive' and recognises that PSP is not always a beneficial feature. Specifically, the model emphasises the within-person combinations rather than 'types' of perfectionist as indicated in the tripartite model. In addition, the empirical evidence has primarily supported the 2 x 2 model of perfectionism. The 2 x 2 offers a quadripartite framework to understand these combinations and provides four specific hypotheses that should be tested. Although Hewitt et al. (2017) have not advocated the use of the 2 x 2 model of perfectionism, they have recognised the importance of examining combinations of perfectionism traits to develop our understanding of perfectionism and the nature of outcomes experienced.

3.1.3 Concluding remarks

After presenting an overview of the available conceptualisations of perfectionism it is important to clarify and provide a rationale for adopting Hewitt and Flett's CMPB in this thesis. Unlike many other models of perfectionism, Hewitt and Flett (1991) offer a complete theoretical framework that explains the development of perfectionism, the components and mechanisms of perfectionism, and associating psychological factors. The CMPB provides a multidimensional way of conceptualising perfectionism (i.e., intrapersonal and interpersonal dimensions). In addition, it acknowledges that perfectionism is broad, complex, and multifaceted. Consequently, Hewitt and Flett's theoretical perspective has been one of the most prominent over the course of 25 years.

The CMPB was also developed from a clinical perspective. That is, perfectionism is considered to be a vulnerability factor that predisposes individuals to ill-being with the view that managing perfectionism can alleviate suffering from ill-being (Hewitt et al., 2017). Therefore, their model does not seek to focus on the distinction between adaptive and maladaptive elements of perfectionism like other models. The relationships between trait dimensions of the CMPB and ill-being are also well supported in empirical research. In addition, Hewitt and Flett's applied clinical work has been influential in shaping their theoretical perspectives of perfectionism (Hewitt et al., 2017). Thus, the CMPB aligns with the aims of the thesis to investigate the perfectionism – ill-being relationship.

Finally, the CMPB offers a theoretical framework that is compatible and useful within the sport domain. Flett and Hewitt (2005, 2014) suggest that athletes face internal and external pressures to be perfect and can be subject to frequent evaluation from the self or others regarding their performance. Athletes performing in public may also feel that they must portray a perfect image of themselves and can experience perfectionistic

cognitions associated with being perfect and avoiding making mistakes in competition (Flett & Hewitt, 2014). There is also empirical support for the use of CMPB, particularly the trait dimensions of perfectionism, with athlete samples. Research has demonstrated the relationships between dimensions of perfectionism and other psychological factors such as athlete burnout (e.g., Hill, Hall, & Appleton, 2010; Hill, Hall, Appleton, & Kozub, 2008).

Based on the theoretical, empirical and applied support for the CMPB, the dimensions SOP and SPP are used to investigate trait perfectionism in study two and study three. Specifically, in study two SOP and SPP are examined longitudinally to investigate their relationship with burnout symptoms and depressive symptoms in youth footballers. In study three, the moderating role of the coach-created motivational climate on different combinations of SOP and SPP are investigated in relation to experiencing burnout symptoms and depressive symptoms in youth footballers. In study four, taking an interpretivist approach, qualitative methods are used to investigate former professional footballers that self-identify as perfectionists during their career. In this way, the broader and more complex nature of perfectionism as indicated in the CMPB can be explored.

3.2 Perfectionism and ill-being

The debilitating nature of perfectionism has been investigated over many years and continues to be a growing area of interest. Anecdotal work has highlighted the destructive nature of perfectionism (e.g., Burns, 1980; Pacht, 1984). In Blatt's (1995) seminal paper he identified three individuals who were highly successful in their respective fields of work. They were consumed by extreme amounts of distress which led to their suicide. These individuals were reported to be highly perfectionistic and self-critical gaining little satisfaction from their achievements. Although speculative,

these examples demonstrate the debilitating effects of perfectionistic tendencies. Subsequently, interest has continued to increase to determine the role perfectionism plays in relation to ill-being. It is broadly accepted that perfectionism can reduce one's well-being and incur or exacerbate mental illness such as mood disorders, eating disorders and suicidal behaviour (Hewitt et al., 2017).

To explain the mechanisms and processes that contribute to psychological dysfunction, Hewitt and Flett (2002) suggest that perfectionism sits within a diathesis-stress framework. Perfectionists have a tendency to appraise events negatively and have an ability to make events stressful through their behaviour and attitude. Given the perception of imposed perfectionistic standards from the self or others accompanied by critical evaluation, it is likely that perfectionism will create a great source of stress. Consequently, ill-being may be activated through four distinct mechanisms: stress generation, stress anticipation, stress perpetuation, and stress enhancement. Stress generation is the pursuit of unrealistic goals and engaging in behaviours that create stress. Stress anticipation is a pessimistic orientation about the future and an anticipation of failure. Stress perpetuation is the maladaptive tendencies that maintain and prolong stress. Stress enhancement is the self-defeating styles of cognitive appraisal that magnify stress. Perfectionism may contribute to distressing failures which trigger the anticipation of future failure and, in turn, continues to perpetuate a maladaptive cycle (Hewitt & Flett, 2002).

Individuals with high levels of perfectionism may exhibit deficient forms of coping when dealing with stress. That is, the impact of stressors may be magnified by the individual through their inability to cope effectively eliciting behaviour such as avoidant coping and some types of emotion focused coping (e.g., venting and aggression) (Hewitt & Flett, 2002; Ingram, 2009). Research examining perfectionism and coping styles have provided support for this notion. SPP has been consistently positively associated with forms of coping such as emotion-oriented and avoidant

coping styles (Flett, Druckman, Hewitt, & Wekerle, 2012; Dry, Kane, & Rooney, 2015).

However, research examining SOP and coping styles has been mixed. There is some

evidence to suggest that SOP is positively associated with differing coping styles such

as emotion oriented-coping, task and problem focused strategies (Hewitt, Flett, &

Endler, 1995; Dry et al., 2015). Consequently, perfectionism and maladaptive coping

increase the likelihood of experiencing mental illness, especially individuals exhibiting

SPP (e.g., Dry et al., 2015; Flett et al., 2012; Hewitt et al., 1995).

There have been a number of studies that have examined the relationship

between perfectionism and ill-being. Limburg, Watson, Hagger, and Egan (2016)

conducted a meta-analysis to examine this relationship. Specifically, they reviewed 284

studies (2,047 effect sizes; 18 longitudinal studies) that had investigated perfectionism

and clinical disorders (depression, anxiety disorders, obsessive-compulsive disorder,

and anorexia/bulimia nervosa), symptoms of disorders (e.g., depressive symptoms,

anxiety, OCD symptoms, eating pathology, and drive for thinness) and outcomes related

to psychopathology (i.e., suicide ideation and general psychological distress) in clinical

and non-clinical samples. In these studies, perfectionism was measured using a variety

different instruments including SOP and SPP. SOP and SPP were examined individually

when investigating the relationship with clinical disorders. The higher order dimensions

perfectionistic strivings (PS) and perfectionistic concerns (PC) were also created from

all measures that were included.

In this meta-analysis, SPP positively predicted clinical disorders. Specifically,

SPP displayed a large/very large positive significant relationship with depression ($r =$

.50), anxiety disorders ($r =$ .53), and anorexia nervosa ($r =$ .78). For obsessive

compulsive disorder (OCD), SPP displayed a small to medium positive significant

relationship ($r =$ .26). When examining the higher order dimension PC, the effect sizes

of the symptoms of disorders and outcomes related to psychopathology were also

included. PC displayed a medium to large positive significant relationship with

psychological disorders. For symptoms of disorders, PC displayed a small to large positive significant relationship. For outcomes related to psychopathology, PC displayed a medium positive significant relationship with suicide ideation and psychological distress. These findings indicate that SPP and PC are consistently identified as vulnerability factors to ill-being (Limburg et al., 2016).

SOP was found to positively predict clinical disorders although the sizes of the relationships were smaller than SPP in most cases. Specifically, SOP displayed a very large positive significant relationship with anorexia ($r = .83$) and a small to medium positive significant relationship with depression ($r = .26$). However, SOP displayed a small positive nonsignificant relationship with anxiety disorders ($r = .08$) and OCD ($r = .16$). When examining the higher order dimension PS, the effect sizes of the symptoms of disorders and outcomes related to psychopathology were also included. PS displayed a small to large positive significant relationship with psychological disorders. For symptoms of disorders, PS displayed a small to medium positive significant relationship, except for social phobia where the relationship was nonsignificant. For outcomes related to psychopathology, PS displayed a small significant positive relationship with suicidal ideation and psychological distress. Consequently, these findings indicate that SOP and PS are identified as vulnerability factors to ill-being in most cases (Limburg et al., 2016).

3.3 Perfectionism and ill-being in sport

In sport, perfectionism is also suggested to be a maladaptive factor that may elicit maladjustment (Flett & Hewitt, 2005). This may be because sport provides a compatible domain for perfectionism to thrive as athletes must manage a number of specific stressors unique to the sport domain (Flett & Hewitt, 2014). However, research investigating the relationship between perfectionism and ill-being in athletes is limited.

Perfectionism has been associated with psychological outcomes in sport such as achievement related anxiety (e.g., Hall, Kerr, & Matthews, 1998), self-esteem (e.g. Koivula, Hassmen, & Fallby, 2002), and symptoms of eating disorders in athletes (e.g., Haase, Prapavessis, & Owens, 1999). Regarding depression, the systematic review conducted in chapter one identified that there has been a small number of studies that have examined dimensions of perfectionism and depression in sport (Nixdorf et al., 2016; Shanmugam et al., 2011, 2012, 2013, 2014b; Stirling & Kerr, 2009). Specifically, there was support for the intrapersonal dimension self-criticism predicting depressive symptoms (Shanmugam et al., 2011, 2014b). Regarding the interpersonal dimensions of perfectionism, expectations from others (i.e., parents' and coaches' expectations) positively predicted depressive symptoms (Nixdorf et al., 2016; Stirling & Kerr, 2009). With so few studies to summarise, there is much to learn about the perfectionism-depression relationship in athletes.

Athlete burnout has received much more empirical attention. Findings have indicated that there is a relationship between perfectionism and burnout in athletes (see Hill & Curran, 2016). In addition, recent longitudinal research has indicated that perfectionism is a risk factor for burnout in athletes (Madigan, Stoeber, & Passfield, 2015, 2016a, 2016b). From these studies, it is apparent that perfectionism is risk factor of burnout and research has begun to examine the possible underpinning processes (i.e., mediators and moderators) of the perfectionism-burnout relationship in athletes. For example, coping has been identified as a potential mediator in the perfectionism-burnout relationship (Hill et al., 2010). In another example, the moderating roles of achievement goals (task and ego) were investigated on the perfectionism-burnout relationship (Appleton, Hall, & Hill, 2009). This research is reviewed and discussed in more detail in subsequent chapters.

Chapter 4 – Perfectionism, burnout and depression in youth football players: A longitudinal study

4.1 Introduction

As outlined in the previous chapter, perfectionism is conceptualised as a multidimensional personality characteristic. It is suggested that perfectionism sits within a diathesis-stress framework, whereby perfectionists have the ability to make events more stressful through their behaviour and attitude (Hewitt & Flett, 2002). Consequently, perfectionists may be vulnerable to ill-being. The trait dimensions SOP and SPP have been identified as positive predictors of ill-being in clinical and non-clinical samples. In sport, there is some supporting research that suggests perfectionism may exacerbate ill-being, however, this has been limited and predominantly cross-sectional. Thus, the purpose of the second study of this thesis was to investigate the relationship between perfectionism and ill-being (i.e., depression and burnout) over time in youth footballers. First, an overview of football participation in the UK is described and is accompanied by research findings that indicate youth male footballers may be at risk from depression and burnout. This is followed by an overview of research that has examined perfectionism, depression and burnout and the introduction of three perfectionism – ill-being models in the rationale. The chapter concludes with a test of these models to investigate the nature of the relationship between perfectionism and ill-being in youth footballers.

4.1.1 Participating in football and reaching professional status: Youth footballers' susceptibility to ill-being

Football is one of the most popular sports in England. It has strong historical roots and is as an important part of contemporary society today. This is not only

observable from the media attention football receives and the growing revenue of professional clubs (Platts & Smith, 2010), but also the 1.2 million young people participating in football (Sport England, 2016). While having considerable intrinsic appeal, it is also attractive to many youngsters. This is because it represents a route to a highly sought after career (Green, 2009). Thus, becoming a professional footballer features as a popular career choice for many young boys (Archer & DeWitt, 2017).

In the UK, there are around 4,000 professional footballers with a career length of typically around 8 years (Roderick & Schumaker, 2016). Those at the top level (i.e., premier league) can earn on average £25,000 per week with the opportunity to receive bonuses (Goddard & Sloane, 2014). There are also opportunities to participate in commercial activities such as endorsing products. Therefore, becoming a professional footballer can be financially rewarding. This acquired wealth affords them to lead an exciting and extravagant lifestyle which is presented both in the mass media and social media, and receives much exposure. As a result, there is an opportunity to craft a celebrity profile (Cashmore & Parker, 2003). Although for many young boys this career appears to be highly appealing, the reality of becoming a professional footballer is especially challenging and highly competitive.

Boys can join development centres within football academies of professional clubs from 5 years old. They are formally registered to the club at the age of 9 and, thereafter, undergo an ongoing registration process where they are released on a yearly basis if they do not play to the requisite standard. The next key point in the process is the age of 16, when boys will need to secure a scholarship to continue at the academy. Again, the selection process can continue up until the age of 23 when it must be decided whether they are to join the professional first team squad or be released (Premier League: Elite Player Performance Plan, 2011). Of the minority of players that do secure a scholarship at the age of 16, approximately 98% are no longer playing by the age of 21 and, in total, it is estimated that less than 1% of youth players reach the professional

ranks (Gernon, 2016; Green, 2009). For these reasons, the football academy environment can be intense, fiercely competitive, and for some it can be perceived as unsupportive and marginalizing (Roderick, 2006).

Perhaps as a result of the circumstances that youth football players may face there is an increased risk of ill-being (Brown & Potrac, 2009). In support of this possibility, a small number of studies have highlighted youth football player's susceptibility to burnout and depression. For example, in a qualitative study conducted by Tabei et al. (2012), youth football players described how the organisational stressors they faced (e.g., hard training, position insecurity, deselection and pressure due to injury) led to feelings of burnout. Likewise, in a study by Junge and Feddermann-Demont (2016), youth football players reported higher depressive symptoms in comparison to those playing professional football and the general public. However, as there are few studies examining burnout and depression in youth football, research is sorely needed to both better understand the antecedents of burnout and depression in football academies and to safeguard youth players from the potential negative consequences of pursuing a career in football. Perfectionism may be one possible antecedent that is pertinent to this achievement domain.

4.1.2 Perfectionism and athlete burnout

There is strong evidence from research for a relationship between perfectionism and burnout in athletes. In a meta-analysis, Hill and Curran (2016) identified 19 studies that had examined perfectionism and burnout in sport. Eighteen of these studies had examined this relationship in youth athletes. Two of these studies examined the relationships between perfectionism and athlete burnout in youth football players and provided findings consistent with the wider research (Hill et al., 2008; Hill, 2013). They found that PS had a small negative or non-significant relationship with total athlete burnout and burnout symptoms. By contrast, PC had small-to-medium positive

relationship with total athlete burnout and burnout symptoms. In all, the findings of existing research suggest that PC, but not necessarily PS, may be important to the onset of burnout in youth athletes and youth football players.

Particularly noteworthy for the current study are four studies that have examined the relationship between perfectionism and athlete burnout longitudinally. All four studies examined youth athletes. The first study was conducted by Chen, Kee, and Tsai (2009). In their study, 188 student athletes completed perfectionism and burnout measures at two time points across a three month period. Findings revealed a nonsignificant relationship between PS and PC dimensions and the three burnout symptoms (i.e., reduced accomplishment, devaluation and exhaustion). This nonsignificant relationship was attributed to the time lag between data collection not being long enough to detect effects. In addition, data was collected during the off-season in the summer period and it was thought that athletes may be less likely to be experiencing burnout during this period. They also suggested that the relationship may be more complex than anticipated and possibly reciprocal in nature.

Madigan, Stoeber, and Passfield (2015) sought to replicate Chen and colleagues' study. Specifically, they examined athletes that were in active training and investigated reciprocal effects of perfectionism using a cross-lagged panel design. In their study, 101 student athletes completed perfectionism and burnout instruments at two time points across a three month period. Findings revealed that PC predicted increases in total burnout and PS predicted decreases in total burnout across three months. In this way, PC was considered a risk factor of burnout whereas PS was considered a protective factor against burnout. These findings also demonstrated that effects can be detected across a three month period.

In another study by Madigan, Stoeber and Passfield (2016b), perfectionism and total burnout were examined over a six month period. The primary aim was to investigate the mediation effects of motivation. In their study, 141 student athletes

completed instruments over two waves across the six months. Findings revealed that PC predicted increases in total burnout and PS predicted decreases in total burnout across six months. These findings aligned with those in their previous study (Madigan et al., 2015). That is, PC was considered a risk factor of burnout whereas PS was considered a protective factor against burnout.

In a third longitudinal study by Madigan, Stoeber, and Passfield (2016a), perfectionism and the individual burnout symptoms were examined over three months. The primary aim was to examine interactive effects of perfectionism. In this study, 111 university and club athletes completed perfectionism and burnout instruments over the two waves across three months. PC predicted increases in reduced sense of accomplishment and PS predicted decreases in reduced sense of accomplishment. PS also predicted decreases in devaluation. Neither PS nor PC predicted changes in exhaustion. Again, these findings align with those of the previous study (Madigan et al., 2015, 2016a). However, these findings highlight that there may be differences when examining the individual burnout symptoms. Specifically, they demonstrated that PC is a risk factor and PS is a protective factor in some but not all burnout symptoms.

4.1.3 Perfectionism and depression

In comparison to burnout, there are few studies that have examined the relationship between perfectionism and depression in sport. In contrast, there have been a considerable number of studies examining the relationship between perfectionism and depression outside of sport. Drawing on Limburg and colleagues' (2016) meta-analysis examining clinical disorders and symptoms, both PS and PC were positively related to clinical depression (5 studies) and depressive symptoms (80 studies) in clinical and non-clinical samples, although the size of the relationship is larger and more consistent for PC than PS. Notably, Smith et al. (2016) conducted a meta-analysis of 10 longitudinal studies that had also examined clinical and non-clinical samples. They also found that

both PC and PS displayed a positive relationship with depression. When controlling for the relationship between PS and PC, the relationship between PS and depression became non-significant, suggesting again that PC is more important to the development of depression.

Of particular relevance are the cross-sectional studies that were identified in study one's systematic review of depression in athletes. In a study by Stirling and Kerr (2009), perfectionism and depressive symptoms were examined in 44 student athletes. They used similar constructs to the HMPS to investigate perfectionism in athletes. However, this instrument was not clearly and reliably validated. They found mixed support for dimensions similar to SPP. Parents and coaching staffs' expectations positively predicted depressive symptoms. When examining significant others and other athlete's expectations there was a nonsignificant relationship with depressive symptoms. For self-expectations (i.e., similar to SOP), there was also a non-significant relationship.

Shanmugam, Jowett and Meyer (2011, 2012, 2013, 2014b) conducted a battery of studies that examined perfectionism and depression. Their primary aim was to investigate how these constructs were implicated in athletes eating psychopathology. Of these 4 studies, three used the same subsample of 588 mixed ability athletes (Shanmugam et al., 2011, 2012, 2013). In these studies, they examined the intrapersonal dimensions of PS and PC (i.e., high personal standards and self-criticism) and depressive symptoms. Findings were mixed for PS revealing a non-significant relationship with depressive symptoms in two studies (2012, 2013) and a significant positive relationship in one study (2011). However, PC was positively associated with depressive symptoms in all studies. In Shanmugam et al.'s (2014b) final study, 152 mixed ability athletes only completed the intrapersonal dimension of PC. As observed in their other studies, findings demonstrated that PC was positively associated with depressive symptoms.

In the most recent study, Nixdorf, Frank, and Beckmann (2016) examined perfectionism and depression in 199 junior elite athletes. Their primary aim was to examine whether psychological processes (i.e., perfectionism) mediated the relationship between sport type and depressive symptoms. In this study, Nixdorf and colleagues examined an interpersonal dimension of PC (i.e., others expectations) and depressive symptoms. Findings revealed that PC was positively associated with depressive symptoms. Taking into consideration the collective findings from the studies examining perfectionism and depressive symptoms in athletes, it appears that others expectations and self-critical tendencies (i.e., PC) are particular vulnerability factors for depression.

4.1.4 The three models of personality–ill-being and rationale for this study

The current study seeks to build on the aforementioned research in a number of ways. Firstly, while there have been four studies that have examined perfectionism and burnout over time in youth athletes, three studies have examined total burnout and only one has examined individual burnout symptoms (Madigan et al., 2016b). Moreover, as that study found dimensions of perfectionism predicted some burnout symptoms over time but not others, these relationships are worthy of revisiting. Secondly, to date there has been no studies examining the relationship between perfectionism and depression in athletes over time. Therefore, while perfectionism and depression may be related, it is not clear if perfectionism predicts changes in depression or if there is any reciprocal effects (i.e., depression predicting perfectionism). Thirdly, only one of the studies that examined perfectionism and burnout over time examined reciprocal effects between perfectionism and total burnout, and this study did not examine burnout symptoms (Madigan et al., 2015). With this in mind, there is evidence that the relationships between perfectionism, burnout, and depression may be complex and include reciprocal relationships. The final extension to existing work, then, is to test three alternative

models of the relationship between perfectionism, burnout symptoms and depressive symptoms in sport: a vulnerability model, a complication/scar model, and reciprocal relations model.

A vulnerability model suggests that personality traits put individuals at risk of ill-being (Bagby, Quilty, & Ryder, 2008). This model is the most dominant in the perfectionism literature. There is substantial empirical support for this model as evidenced by the findings of Smith et al.'s (2016) meta-analysis as well as individual studies that have directly tested the model by assessing reciprocal effects. For example, Sherry, Richards, Sherry and Stewart (2014) found that PC predicted depression in students over 12 months with no reciprocal effects evident. In sport, Madigan et al.'s (2015) study can also be considered to support this model in that PC predicted athlete burnout over three months with, again, no reciprocal effects evident.

In contrast to a vulnerability model, a complication/scar model proposes that ill-being, especially depression, contributes to changes in personality (Bagby et al., 2008). This is based on the idea that psychopathology may alter or impair key areas of functioning (e.g., psychological, biological or social) and change personality related patterns of behaviour, cognitions, emotional regulation and perceptions (Lewinsohn, Steinmetz, Larson, & Franklin, 1981; McGrath et al., 2012). As such, perfectionism may be a consequence of ill-being or at least responsive to changes in ill-being (e.g., PC increases as a result of ill-being). Changes in perfectionism may be temporary and responsive when symptoms are alleviated (i.e., complication effect) or may be more long lasting and remain after ill-being symptoms subside (i.e., scar effect). One study that supports this model is provided by Gautreau, Sherry, Mushquash and Stewart (2015), who found that social anxiety positively predicted self-critical perfectionism in students over 12 months with no reciprocal effects evident. In another study, Asseraf and Vaillancourt (2015) also found support for a complication/scar model in that depressive symptoms positively predicted SPP in adolescents over a two year period.

There does not appear to be any evidence from longitudinal studies in sport that support a complication/scar model.

Finally, a reciprocal relations model suggests that a vulnerability model and complication/scar model should not be viewed as mutually exclusive. Rather, they operate in tandem. Perfectionism may contribute to changes in ill-being and vice versa (Judd, Schettler, & Akiskal, 2002). Like the other models, there is some support for this model. For example, McGrath et al. (2012) found reciprocal effects between PS, PC and depression in students across three weeks. Specifically, PC positively predicted depression and vice versa, whereas PS negatively predicted depression and depression positively predicted PS across three waves. Shahar, Blatt, Zuroff, Kuperminc, and Leadbetter (2004) also found a positive reciprocal relationship between PC and depression in adolescent females over a one year period. Again, there does not appear to be any studies in sport that has provided support for a reciprocal relations model.

4.1.5 The purpose of study two

The purpose of this study was to examine the relationship between perfectionism and both burnout symptoms and depressive symptoms over time in youth football players. In doing so, the study provides the first test of three possible models of these relationships in sport: vulnerability model, complication/scar model, and reciprocal relations model. Based on previous findings in sport and elsewhere, it was hypothesised that perfectionism would positively predict changes in burnout symptoms but not the reverse (vulnerability model) and that perfectionism and depressive symptoms would positively predict changes in each other (reciprocal relations model).

4.2 Method

4.2.1 Participants

A sample of youth male football players ($N = 162$ in total and $N = 108$ complete cases for both time points) were recruited from professional football academies in England. Players average age was 16.15 years $(SD = 1.84$, range $14 - 21)$. Within the academy system players are categorised into three pathways dependent on their age: Foundation Phase (under 9's to under 11's), Youth Development Phase (under 12's to under 16's) and Professional Development Phase (under 17's to under 21's). Participants had joined an academy at around 11.75 years old ($SD = 2.89$) and spent an average of 3.65 years at their current club ($SD = 2.95$). Participants rated their participation in football as extremely important in comparison to all other activities they take part in ($M = 9.6$, $SD = 0.65$, $1 = $ *not at all important* to $10 = $ *extremely important*).

4.2.2 Procedure

The study was approved by the University's ethics committee and informed consent was obtained from all participants (see appendix A.1, B.1, B.3). Parental consent was obtained for all participants below the age of 18 (see appendix B.2). Questionnaires were distributed in a training session on two occasions over a three month period (time 1 and time 2) and a debrief sheet was given to participants at the end of data collection (see appendix B.4). Time 1 measurement was taken across November/December 2015 and Time 2 measurement was taken across February/March 2016. The timing of the measurement was selected to coincide with activities of the academies. In particular, season length and decision on release/retention of players (particularly around February/March time). In addition, research has found a similar three-month interval is sufficient to observe how perfectionism predicts changes in burnout (Madigan et al., 2015, 2016b).

4.2.3 Instruments

4.2.3.1 Multidimensional perfectionism

The Hewitt and Flett (1991) Multidimensional Perfectionism Scale brief version (HMPS: Cox, Enns & Clara, 2002) was used to assess self-oriented perfectionism (SOP) and socially prescribed perfectionism (SPP). Other oriented perfectionism (OOP) was not assessed in this study (see appendix C.2). Each subscale of the brief HMPS contains 5 items, and each item is measured on a seven point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*). The stem was adapted to ensure that participants focussed on the statements in relation to their football participation (e.g., "In football…"). The SOP subscale reflects exceedingly high standards from one's self, accompanied by harsh self-criticism (e.g., "I strive to be as perfect as I can be."). The SPP subscale reflects the perception of exceedingly high standards from others and individuals perceive they will be exposed to critical evaluation from others (e.g., "I feel that people are too demanding of me."). Evidence to support the validity and reliability of this instrument has been provided by Cox et al. (2002). The brief MPS has also demonstrated adequate internal consistency in youth football players (Hill, 2013).

4.2.3.2 Athlete burnout

The Athlete Burnout Questionnaire (ABQ: Raedeke & Smith, 2001) was used to assess burnout (see appendix C.4). The ABQ is a 15 item measure with three subscales of 5 items that assess reduced sense of accomplishment (RA: e.g., "I am not performing up to my ability in football."), emotional and physical exhaustion (EE: e.g., "I am exhausted by the mental and physical demands of football.") and sport devaluation (D: e.g., "The effort spent in football would be better spent doing other things."). Each item is measured on a 5 point Likert scale (1 = *almost never* to 5 = *almost always*). Evidence to support the validity and reliability of this instrument has been provided by Raedeke

and Smith (2001). The ABQ has also demonstrated adequate internal consistency with other youth athlete samples including football (e.g., Gustafsson, Hill, Stenling, & Wagnsson, 2015).

4.2.3.3 Depressive symptoms

The Center for Epidemiological Studies Depression Scale (CES-D: Radloff, 1977) was used to measure the incidence of depressive symptoms (see appendix C.5). The CES-D comprises 20 items whereby participants are asked to reflect on their feelings/behaviours over the past week (e.g., "My sleep was restless", "I felt depressed", and "I did not feel like eating; my appetite was poor.") on a four point Likert scale (0 = *rarely or none of the time* to 3 = *most or all of the time*). A higher score indicates greater frequency and number of depressive symptoms; the cut off for mild to major depressive symptoms on the CES-D is a score $\geq$ 16. However, this instrument should not be used as a clinical diagnosis of depression (Radloff, 1991). Evidence to support the validity and reliability of this instrument has been provided by Radloff (1977, 1991). The CES-D has also demonstrated adequate internal consistency with other youth athlete samples (e.g., Nixdorf, Frank, & Beckmann, 2016).

4.3 Results

4.3.1 Preliminary analysis

The data was screened prior to analyses to check for errors, missing values and outliers (see Tabachnick & Fidell, 2013, for details of this procedure). Twelve univariate outliers (z > 3.29) were removed from the data before analysis. No multivariate outliers were identified as no participant showed a Mahalanobis distance larger than the critical value of χ^2 (12) = 32.91, p < .001. Depressive symptoms and devaluation deviated from normal (positive skewness). This was expected based on non-clinical populations reporting lower depression and participants reporting that football

was highly meaningful, hence lower devaluation. Positive skewness is also reported by others for burnout and depression in similar circumstances (e.g., De Francisco, Arce, Pilar Vilchez, & Vales, 2016; Madigan et al., 2015, 2016a). Following the removal of outliers, the analysis proceeded with multivariate analysis as Byrne (2009) has suggested that the maximum likelihood estimators in SEM are sufficiently robust to cope with small/moderate deviations from normality in the data. Descriptive statistics, Cronbach's alpha and bivariate correlations are displayed in Table 4.1.

4.3.2 Descriptive statistics and bivariate correlations

Participants demonstrated high SOP scores and medium levels of SPP at both time points. The mean scores of depressive symptoms and burnout were generally low. Scores on all variables were similar at times 1 (T1) and 2 (T2). SOP had slightly decreased at T2 whereas SPP had slightly increased. Depressive symptoms (DS), reduced accomplishment (RA) and exhaustion (EE) had marginally increased at T2, except for devaluation (D) which decreased slightly. Of particular note is that, at T1, 24% of the sample reported mild to major depressive symptoms (CES-D $\geq$ 16) and 11% reported major depressive symptoms (CES-D $\geq$ 23). At T2, 33% of the sample reported mild to major depressive symptoms (CES-D $\geq$ 16) and 16% reported major depressive symptoms (CES-D $\geq$ 23). In regards to the bivariate relationship, SOP and SPP displayed a small relationship with each other and over time. At T1 SOP displayed a small-to-medium negative relationship with depressive symptoms and burnout symptoms at T1 and T2. SPP at T1 displayed a small-to-medium positive relationship with depressive symptoms and burnout symptoms and this was consistent at T2.

Table 4.1 Descriptive statistics, Cronbach's alpha and bivariate correlations

Variable	1	2	3	4	5	6	7	8	9	10	11	12
Time 1												
1. SOP												
2. SPP	-.03											
3. DS	-.20*	.27**										
4. BO: RA	-.25**	.27**	.51**									
5. BO: EE	-.32**	.24**	.44**	.57**								
6. BO: D	-.40**	.16	.44**	.54**	.51**							
Time 2												
7. SOP	.62**	-.14	-.09	-.09	-.22*	-.25**						
8. SPP	-.06	.63**	.33**	.23*	.18	.33**	.01					
9. DS	-.23*	.27**	.66**	.47**	.34**	.40	-.16	.40**				
10. BO: RA	-.16	.16	.48**	.67**	.52**	.37**	-.17	.09	.65**			
11. BO: EE	-.20*	.27**	.38**	.35**	.64**	.22*	-.16	.26**	.40**	.51**		
12. BO: D	-.18	.27**	.37**	.36**	.38**	.44**	-.19*	.27**	.53**	.60**	.55**	
M	5.49	3.60	0.55	2.16	2.05	1.55	5.27	3.65	0.62	2.18	2.02	1.52
SD	0.71	0.93	0.40	0.64	0.70	0.51	0.83	0.94	0.47	0.64	0.75	0.61
α	.64	.63	.86	.75	.84	.68	.75	.70	.89	.68	.86	.76

Note. T1 = Time point 1. T2 = Time point 2. SOP = self-oriented perfectionism. SPP = socially prescribed perfectionism. DS = depressive symptoms. BO =burnout. RA = reduced accomplishment. EE = exhaustion. D = Devaluation. * = $p < .05$, ** $p < .01$ (two-tailed).

4.3.3 Cross-lagged panel analysis

To test the three theoretical models (i.e., vulnerability model, complication/scar model and reciprocal relations model), cross-lagged panel analysis was used. Cross-lagged panel analysis is a path analysis model that enables the researcher to establish the causality of bi-directional relationships over time (Kenny, 2005). Cross-lagged effects compare the relationships between variable X (e.g., perfectionism) at time 1 and variable Y at time 2 (e.g., burnout) and the relationships between variable Y (e.g., burnout) at time 1 and variable X (e.g., perfectionism) at time 2 (Kearney, 2017). In using this method of analysis, this enables us to determine the direction of the theoretical relationships. Specifically, whether (a) perfectionism predicts burnout and depressive symptoms, (b) burnout and depressive symptoms predicts perfectionism, or (c) the relationship is reciprocal.

Cross-lagged models consist of three types of correlations (Campbell & Stanley, 1963). Synchronous correlations measure relationships between variables at each time point which indicates the size and direction of the cross-sectional relationship (e.g., the relationship between perfectionism at T1 and depressive symptoms at T1). Autocorrelations measure the relationship between the same variable at T1 and T2 (e.g., the relationship between depressive symptoms at T1 and T2), which provides an indication of stability over time. Finally, cross-lagged correlations provide a test of the relationships between variables over time. They are depicted by the diagonal relationships in the model between one variable on another over time (e.g., the relationship between perfectionism at T1 on depressive symptoms at T2).

Two cross-lagged models of perfectionism with (1) burnout symptoms and (2) depressive symptoms were examined. Four comparison models were tested for each one so to provide a comparison of the three alternative models (vulnerability model, complication/scar model, and reciprocal relations model). Model 1 included

synchronous correlations and autocorrelations only. Model 2 tested a vulnerability model and included cross-lagged paths from perfectionism at T1 to burnout/depressive symptoms at T2 (testing a vulnerability model). Model 3 tested a complication/scar model and included cross-lagged relationships from burnout/depressive symptoms at T1 to perfectionism at T2. Finally, model 4 included all cross-lagged paths (reciprocal relations model).

IBM SPSS AMOS (version 20; Arbuckle, 2011) was used to examine two cross-lagged models. The analysis was conducted with measured variables and full information likelihood estimation (FIML). To evaluate model fit the comparative fit index (CFI), Tucker-Lewis Index (TLI) and root mean square error of approximation (RMSEA) were used. Adequate fit was indicated if CFI >.90, TLI>.90, RMSEA <.08 (Hu & Bentler, 1999). Chi-square difference tests were used to compare the fit between nested models.

4.3.3.1 Cross-lagged effects of perfectionism and burnout symptoms

Model fit indices and model comparisons are reported in table 4.2.

Model 1 provided adequate fit to the data. Perfectionism had high stability: SOP T1 to T2 β = .62 and SPP T1 to T2 β = .62, $ps < .001$. Burnout symptoms had medium-to-high stability: RA T1 to T2 β = .64, EE T1 to T2 β = .57 and D T1 to T2 β = .44, $ps < .001$.

Model 2 provided adequate fit to the data. The model provided some support for the cross-lagged effects of perfectionism on burnout symptoms. Specifically, SPP at T1 significantly predicted EE and D at T2: SPP T1 to EE T2 β =.16 and SPP T1 to D T2 β =.17, $ps <.05$). No other cross-lagged effects in this model were statistically significant ($ps > .05$).

Table 4.2 Fit indices and model comparisons for perfectionism and ill-being

							Model Comparisons			
Model (M)	χ^2	df	p	CFI	TLI	RMSEA [95% CI]		$\Delta\chi^2$	Δdf	p
Burnout symptoms										
M1: Stability Coefficients Only	35.06	20	.02	.97	.92	.07 [.03, .11]				
M2/VM: Perfectionism T1 → BO T2	25.99	14	.03	.98	.90	.07 [.03, .12]	M1 vs. M2	9.08	6	.17
M3/SCM: BO T1 → Perfectionism T2	22.06	14	.08	.98	.94	.06 [.00, .11]	M1 vs. M3	13.00	6	.04
M4/RM: Reciprocal Effects	13.42	8	.10	.99	.92	.07 [.00, .12]	M1 vs. M4	21.64	12	.04
							M2 vs. M4	12.56	6	.05
							M3 vs. M4	8.64	6	.20
Depressive symptoms										
M1: Stability Coefficients Only	11.73	6	.07	.97	.89	.08 [.00, .14]				
M2/VM: Perfectionism T1 → DS T2	7.14	4	.13	.98	.91	.07 [.00, .15]	M1 vs. M2	4.59	2	.10
M3/SCM: DS T1 → Perfectionism T2	6.37	4	.17	.99	.93	.06 [.00, .15]	M1 vs. M3	5.36	2	.07
M4/RM: Reciprocal Effects	2.17	2	.34	1.00	.99	.02 [.00, .16]	M1 vs. M4	9.55	4	.05
							M2 vs. M4	4.96	2	.08
							M3 vs. M4	4.19	2	.12

Note. M1-M4 = the four different models tested. *df* = degrees of freedom; CFI = comparative fit index; TLI = Tucker- Lewis index; RMSEA = root mean square error of approximation; CI = confidence interval. VM = vulnerability model; SCM = Scar/complication model; RM = Reciprocal model. BO = Burnout Symptoms; DS = Depressive Symptoms.

Model 3 provided adequate fit to the data. The model also provided some support for the influence of burnout symptoms on perfectionism. Specifically, D at T1 significantly predicted SPP T2: D T1 to SPP T2 β =.28, p <.01. No other cross-lagged effects of burnout symptoms on perfectionism in this model were statistically significant ($ps > .05$).

Model 4 provided adequate fit to the data. The model also provided support for reciprocal cross-lagged effects between perfectionism and burnout symptoms. Specifically, SPP at T1 significantly predicted D T2 and EE T2: SPP T1 to EE T2 β = .16 and SPP T1 to D T2 β = .17, $ps < .05$. In addition, D T1 significantly predicted SPP T2: D T1 to SPP T2 β = .28, $p < .01$. There were no other statistically significant cross-lagged effects ($ps > .05$).

In terms of comparing fit of the models, model 3 (complication/scar model) and model 4 (reciprocal relations model) provided significantly better fit than the baseline model (p <.05). However, model 2 (vulnerability model) did not provide significantly better fit than the baseline model (p >.05). Model 4 did not provide significantly better fit than model 2 or model 3 (p >.05). Based on an assessment of fit, model 3 and model 4 both offer tenable models. However, the presence of two small-to-medium significant cross-lagged effects of SPP on burnout symptoms in model 4 (EE and D) means that model 4 is the most informative in terms of the relationship between perfectionism and burnout over time. Model 4 is presented in Figure 4.1.

4.3.3.2 Cross-lagged effects of perfectionism and depressive symptoms

Model fit indices and model comparisons are reported in table 4.2.

Model 1 provided adequate fit (though it is noted that TLI was below the desirable threshold) fit to the data. Perfectionism had high stability: SOP T1 to T2 β =

.63 and SPP T1 to T2 $\beta = .59$, ($ps < .001$). Depressive symptoms had high stability: DS T1 to T2 $\beta = .62$, $p < .001$.

Model 2 provided adequate fit to the data. The model did not provide support for the influence of perfectionism on depressive symptoms. Specifically, SOP T1 to DS T2 $\beta = -.11$ and SPP T1 to DS T2 $\beta = .12$ were not statistically significant ($ps > .05$).

Model 3 provided adequate fit to the data. The model provided support for the influence of depressive symptoms on perfectionism. Specifically, DS at T1 significantly predicted SPP T2 $\beta = .17$, $p < .05$. The cross-lagged effect of DS T1 on SOP T2 was non-significant $\beta = .04$ ($p > .05$).

Model 4 provided adequate fit to the data. The model provided support for the cross-lagged effects between depressive symptoms and perfectionism. Specifically, DS T1 significantly predicted SPP T2 $\beta = .17$, $p < .05$. There were no other statistically significant cross-lagged effects ($ps > .05$).

In terms of comparing fit of the models, only model 4 (reciprocal relations model) provided significantly better fit than the baseline model ($p = .049$). Model 2 (vulnerability model) and model 3 (complication/scar model) did not provide significantly better fit than the baseline model ($p > .05$). Model 4 did not provide significantly better fit when compared to model 2 ($p = .084$) or model 3 ($p = .12$). Based on an assessment of fit, model 4 offers the most tenable model. However, in estimating this model it is noteworthy that the only significant cross-lagged effects were between DS T1 to SPP T3, supporting a complication/scar model. Model 4 is presented in figure 4.2 which depicts all cross-lagged pathways.
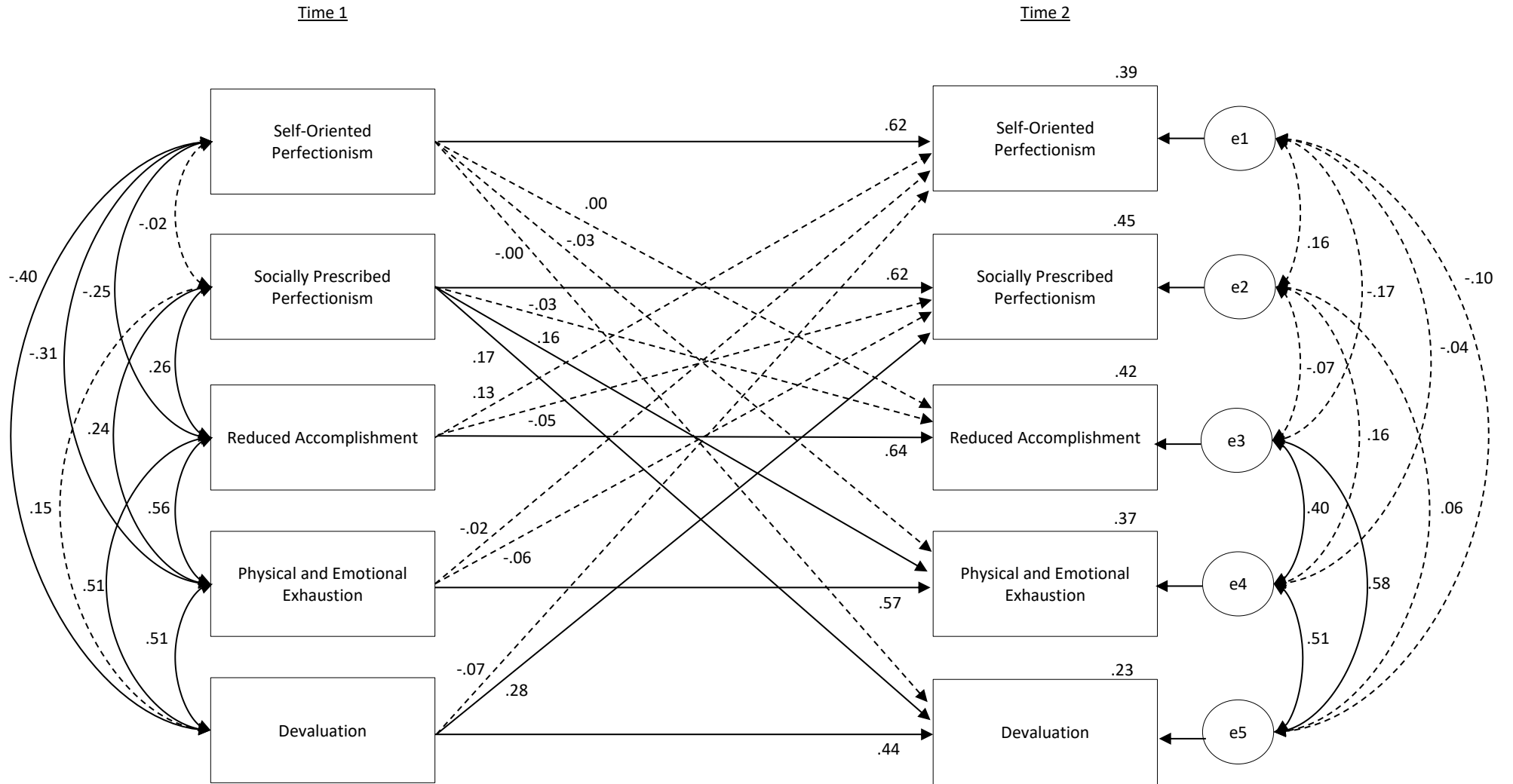
Figure 4.1 Perfectionism and burnout cross-lagged model with standardized coefficients (M4)

Dashed lines depict nonsignificant pathways (*p* > .05)
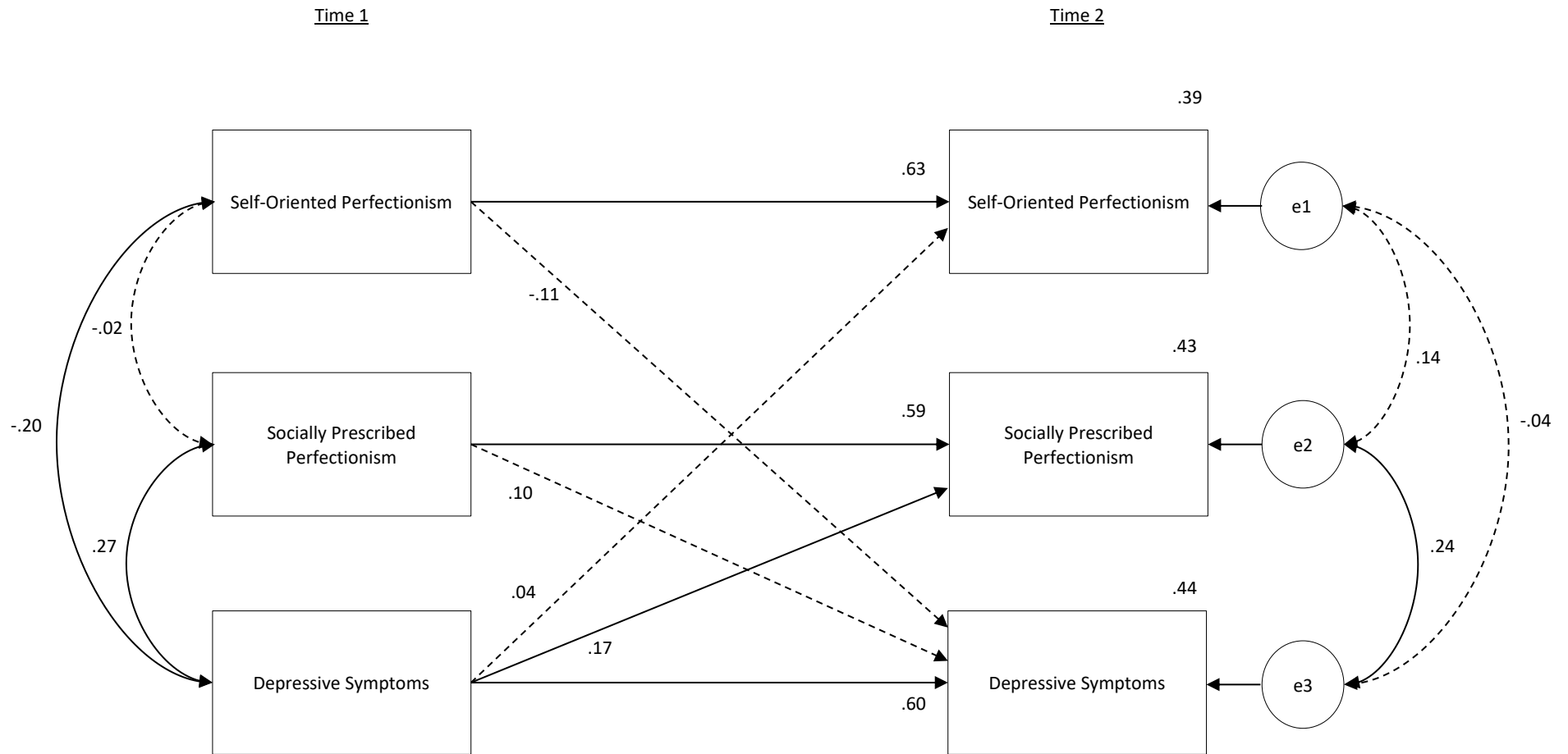
Figure 4.2 Perfectionism and depressive symptoms cross-lagged model with standardized coefficients (M4)

Dashed lines depict nonsignificant pathways (*p* > .05)

4.4 Discussion

The relationships between perfectionism, burnout symptoms and depressive symptoms in youth football players were examined over a three month period. In doing so, a vulnerability model (perfectionism predicting burnout and depression), a complication/scar model (burnout and depression predicting perfectionism), and a reciprocal relations model (perfectionism predicting burnout and depression, and the reverse) were tested. It was hypothesised that perfectionism would positively predict changes in burnout symptoms but not the reverse (vulnerability model) and perfectionism and depressive symptoms would positively predict changes in each other (reciprocal relations model). Cross-lagged panel analysis revealed that SPP positively predicted increases in exhaustion (vulnerability model) and also revealed a positive reciprocal relationship between SPP and devaluation (reciprocal relations model). SPP did not predict depressive symptoms over time but depressive symptoms did predict increases in SPP over time (complication/scar model). SOP did not predict, nor was it predicted by, burnout symptoms or depressive symptoms over time.

4.4.1 The relationship between perfectionism and burnout

The finding that SPP predicts increases in exhaustion over time is in line with the well-established vulnerability model of perfectionism and ill-being. In the only other longitudinal study to examine a similar relationship in sport, Madigan et al. (2016b) found the relationship between PC and exhaustion to be non-significant. However, because the overall difference in the size of the relationship between the two studies is quite small ($\beta = .12$ vs .16), we are inclined to consider the two relationships comparable and indicative of the possibility that SPP, and PC generally, is likely to have a small positive influence on the development of exhaustion over time for youth athletes and youth football players. In regards to why this is the case, others have suggested that

self-worth contingent on the attainment of external standards and a disposition to higher levels of anxiety may partly explain this relationship (Hill et al., 2008). It is easy to imagine how, over time, such factors will have an exhaustive toll, particularly when external standards are perceived to be uncontrollable and unrealistic or when the external environment reinforces the need to meet high standards to obtain approval, as is the case in football academies.

One of the most interesting findings of the current study is that SPP predicted changes in devaluation and at the same time devaluation predicted changes in SPP. The first part of the reciprocal relationship was expected. As with SPP and exhaustion, the relationship between SPP and devaluation was not statistically significant in Madigan et al.'s (2016b) longitudinal study but was very similar in size (β = .16 vs .17). Therefore, again, the findings of the two studies are consistent in identifying SPP, and PC generally, as possible risk factors for this burnout symptom in youth athletes and youth football players. It seems that in addition to an exhaustive toll, SPP may also contribute to increases in a more negative attitude towards football participation. This may reflect stress-related processes whereby, over time, SPP prompts greater distancing from the sport as a means of coping with stress. This idea is supported by research that has found SPP to be related to the use of avoidance coping strategies such as denial (Hill, Hall, Appleton, 2010). The finding may also reflect a motivational process whereby SPP promotes a progressive shift from intrinsic motivation (i.e., playing football for enjoyment) to amotivation (i.e., the absence of motivation; Vallerand, 2001). These processes have been described by athletes reporting burnout symptoms (e.g., Gustafsson, Hassmen, Kentta, & Johansson, 2008) and are consistent with models of burnout (e.g., Lonsdale, Hodge, & Rose, 2009).

The second part of the reciprocal relationship was unexpected. As it is the first time the influence of devaluation on SPP has been examined over time there are also no studies to directly compare with. However, a study by Martinent Decret, Guillet-Descas

and Isoard-Gautheur (2014) found something similar in that devaluation predicted increases in external motivation (behaviour regulated by rewards and fear of punishment/coercion; Vallerand, 2001) and amotivation over two months in youth athletes. External regulation and amotivation are characteristic of SPP. This is because SPP encompasses perceptions of externally imposed goals, a desire to validate one's self-worth through the approval of others, and subsequent feelings of helplessness (Appleton & Hill, 2012). In explaining their findings, Martinent et al. (2014) proposed that athletes in intensive training centres who have a negative attitude towards sport will still have a sense of obligation to participate and, because they lack intrinsic reasons for doing so, they may well eventually become more dependent on external direction for motivation (e.g., coach or parental approval). It is possible that what is being observed in the current study is similar, with negative attitude towards sport increasing external types of motivation, or at least making external pressures more apparent, in manner consistent with the externally focused SPP.

The only instance in which SPP did not predict a burnout symptom, or was not predicted by a burnout symptom, was for a reduced sense of accomplishment. This relationship is evident in Madigan et al.'s (2016b) study. For this particular difference, there may be possible contextual differences between our sample and the sample in Madigan et al.'s study. Football academies include players that have continually demonstrated exceptional performance and have met the required standards to remain in the academy. This is not the same environment described in Madigan et al.'s study, which included student athletes from university teams that compete alongside their studies or with local sport clubs at a range of levels. Therefore, put simply, those that perceived their accomplishments to be short of desired standards may be absent or underrepresented in our sample (i.e., sample/contextual differences may moderate the SPP- reduced accomplishment relationship). Alternatively, the difference in findings may reflect the different measures of perfectionism used in the two studies. Here, SPP

was used whereas Madigan et al. used a combination of sub dimensions from other instruments to capture PC (concern over mistakes and negative reactions to mistakes). As such, it is possible that SPP may be less important to a reduced sense of accomplishment than the more general PC. However, given broader findings regarding the especially corrosive influence of SPP relative to other sub dimensions of PC, this may be less likely (Limburg et al., 2016). Therefore, examination of moderating factors in the PC-reduced accomplishment relationship may be the most fruitful avenue for future research seeking to reconcile the findings here and those of Madigan et al. (2016b).

Unlike SPP, SOP did not predict any burnout symptoms over time nor was it predicted by any burnout symptoms. There was no evidence of any protection or resiliency offered by SOP in regards to the development of burnout symptoms over time. This is the perhaps the most notable difference between the findings of the current study and Madigan et al.'s (2016a) study in which PS negatively predicted both a reduced sense of accomplishment and devaluation over time. Again, the different measures of perfectionism used in the two studies may explain these findings. Here, we used SOP and Madigan et al. used a combination of sub dimensions from other instruments to capture PS (personal standards and striving for perfection). SOP is a particularly complex dimension of perfectionism that is considered a vulnerability factor for psychological and motivational difficulties (Flett & Hewitt, 2006). It is not clear whether the instruments used by Madigan et al. have similar complexity. Based on the difference in findings, PS may capture something more beneficial for youth athletes to possess. As recommend by Madigan et al., it is important to compare the relationship between different sub dimensions of perfectionism with burnout symptoms, particularly to clarify whether SOP or PS holds any benefits in terms of burnout symptoms over time. In addition, by examining the moderating processes this may explain when some

dimensions of perfectionism may be related to burnout symptoms over time and when they may not be.

4.4.2 The relationship between perfectionism and depression

The relationship between perfectionism and depressive symptoms was more ambiguous than for burnout. As expected, based on a comparison (i.e., model fit) of the three models, a reciprocal relations model was the most tenable. However, contrary to expectations, based on the presence of significant cross-lagged effects, the relationship between perfectionism and depression was best represented by a complication/scar model. This is because the only statistically significant cross-lagged effect was depressive symptoms to SPP. This is a finding that directly replicates another study testing a reciprocal relations model between SPP and depression (Asseraf & Vaillancourt, 2015). On the basis of these findings, it is tentatively suggested that the current study provides the first evidence of a complication/scar model to explain the relationship between perfectionism and depression in youth football players. However, this novel finding requires further scrutiny for a number of reasons. Firstly, as described earlier, comparison of models indicated that while the cross-lagged effects of perfectionism to depressive symptoms were not statistically significant, they are also best not considered zero. Secondly, there is a considerable amount of research that has examined the relationship between SPP and depression which supports a vulnerability model (e.g., Smith et al., 2016).

These issues notwithstanding, support for a complication/scar model has been provided by others and suggests that this model is worthy of further examination (e.g., Asseraf & Vaillancourt, 2015; Gautreau et al., 2015). In speculating on why depressive symptoms might precede increases in SPP, Asseraf and Vaillancourt argued that depression may increase prominence of negative schemas and attitudes (e.g., negative thoughts about self and others) or intensify concerns associated with SPP (e.g., mistakes

equate to absolute failure). In addition, depression may contribute to dysfunctional behaviours such as seeking out negative feedback or criticism that will affirm perceptions embedded within SPP. It is also interesting to note that Asseraf and Vaillancourt suggest that the relationship between perfectionism and depression may vary across childhood, adolescence and adulthood. They argue that SPP may be a complication of depression (complication/scar model) in childhood and adolescence but as perfectionism becomes engrained it becomes a risk factor for depression in adulthood (vulnerability model) and eventually come to act on each other (reciprocal relations model). These suggestions offer interesting explanations for the findings observed here and align well with Beck and Bredemeier's (2016) model of depression in which depressogenic beliefs (e.g., "nobody values me") are proposed to be reinforced by the experience of depression.

In a similar manner to SOP and burnout symptoms, SOP did not predict depressive symptoms over time. To our knowledge, no other study has examined the relationship between SOP and depression in youth athletes. However, meta-analytical evidence has found SOP to have a small positive correlation with depression that disappeared when controlling for PC or baseline depression (Limburg et al., 2016; Smith et al., 2016). These findings are consistent with this research. Specifically, after controlling for the influence of SPP and baseline depression, SOP has little association with depression three months later. This is an important finding because within Time 1 and Time 2 SOP had a small negative correlation with depressive symptoms. As described by Smith et al. (2016), cross-sectional evidence appears to cloud the ambiguous relationship between PS and depression. Examining the factors that buffer and exacerbate the SOP-depression relationship over time offers the next step in this line of research and a means of better understanding if and when SOP will be problematic for youth football players.

4.4.3 Critically reflecting on the rationale for examining personality change and reciprocal relationships between perfectionism and ill-being

It is often thought that personality traits are stable rather than changeable. This may bring about some debate in the context of the current findings and therefore requires some acknowledgement. Many theoretical models and definitions of personality conceive that personality characteristics and temperament are typically enduring (Tickle, Heatherton, & Wittenburg, 2001). Consequently, research examining the stability of personality traits has been a key area of interest over many years. Longitudinal research examining the stability of personality traits have found support for the stability of personality and have also found some evidence for the plasticity of personality (e.g., Hampson & Goldberg, 2006; Harris, Brett, Johnson, & Deary, 2016). Thus, it is suggested that whilst personality traits can be described as stable, they cannot be described as rigid (Matthews, Deary, & Whiteman, 2009). This notion of personality corresponds to the current findings. Perfectionism was highly stable over three months but some ill-being symptoms demonstrated the possible plasticity of perfectionism.

There may be a number of explanations as to why perfectionism may be malleable. One possible explanation may be the age of participants as most were adolescents in this study. Large reviews have shown that there is a great deal of evidence for plasticity of personality traits from adolescence through to middle age as traits typically become more stable over time, particularly after age 50 (Roberts & DelVecchio, 2000). It has also been suggested that significant life events and one's environment can influence personality (Klein et al., 2011). This notion corresponds with research that has found perfectionism to be attributed to both genetic and environmental factors in three studies (i.e., Iranzo-Tatay et al., 2015; Tozzi et al.,

2004; Wade & Bulik, 2007). This may be why perfectionism is higher in some personally meaningful domains rather than others but also why perfectionism scores correlate across domains (e.g., Dunn, Gotwals, & Causgrove Dunn, 2005; Stoeber & Stoeber, 2009). As ill-being has an environmental influence and ill-being, particularly depression, may have a genetic influence, the theoretical models of personality – ill-being examined in this study have offered an opportunity to examine the plasticity of perfectionism. Thus, this study theoretically and empirically contributes to the growing body of research investigating these relationships.

4.5 Conclusion

The current findings suggest that the relationship between perfectionism and burnout symptoms in youth football players may be best represented by a reciprocal relations model wherein dimensions of perfectionism act upon burnout symptoms and, in turn, burnout symptoms act upon perfectionism. The relationship between perfectionism and depressive symptoms in youth football players is more ambiguous. However, the current study provides the first evidence of a complication/scar model for athletes, wherein depression acts upon perfectionism dimensions over time but not the reverse.

Chapter 5 – Perfectionism, burnout and depression in youth football players: The moderating role of the coach-created climate

5.1 Introduction

The findings from study two provide evidence that perfectionism, particularly SPP, shares a longitudinal relationship with burnout symptoms and depressive symptoms over a 3 month period. Having found evidence of the longitudinal relationships between these variables in study two, it is important to investigate *when* perfectionism may be related to burnout symptoms and depressive symptoms. This can be achieved through examining possible moderators. One possible moderator of this relationship may be the coach-created climate. This is because the coach is a fundamental part of an athlete's experience and because elements of the coach-created climate (e.g., coach conflict) were identified as correlates of depression in athletes in study one. Thus, the purpose of the third study in this thesis was to examine the moderating role of the coach-created climate in the relationship between perfectionism and both burnout and depression. First, an overview of two theoretical perspectives of motivation and motivational climate is presented. This is followed by a review of research that has examined the motivational climate, perfectionism and ill-being in athletes, and the rationale for this study. The chapter concludes with an examination of the moderating roles of the coach-created climate on the perfectionism – ill-being relationship in youth footballers.

5.1.1 Achievement Goal Theory and Self-Determination Theory: The development of the coach-created motivational climate

The coach-created motivational climate is the psychological environment that pertains to how the coach structures the training and competitive environment and their behaviour towards their athletes (Duda, 2001). Two key theories have been important in informing our understanding of the coach-created motivational climate. These theories are achievement goal theory (Ames, 1992; Nicholls, 1989) and self-determination theory (Deci & Ryan, 1985; Ryan & Deci, 2002).

5.1.1.1 Achievement goal theory

Achievement goal theory (AGT) is a social-cognitive approach to motivation. This theory originated from the education domain and was subsequently adapted to sport and exercise (Nicholls, 1984). AGT represents the meaning that is assigned to achievement situations. That is, individuals give meaning to their achievement behaviour through the goals they adopt. Thus, the goals that are adopted reflect one's engagement levels, approach or avoidance strategies, and responses to achievement outcomes (Roberts & Papaioannou, 2014). AGT is primarily concerned with competence. Motivational processes are energised by the importance and desire that is placed on demonstrating competence (i.e., conception of ability) and the avoidance of demonstrating incompetence in achievement domains (Roberts 2012).

Competence can be understood in two different ways (task and ego) and at two levels (states of involvement and dispositions). At a state level, when individuals are task-involved they perceive that they are gaining a sense of competence and success from personal mastery of a skill or self-referent improvement. In contrast, when individuals are ego-involved they perceive that they are gaining a sense of competence and success from outperforming others or demonstrating equal ability through less effort

(i.e., other-referent) (Roberts, 2012). As such, these goals focus on different aspects of the self and are considered mutually exclusive.

Dispositions to act in an ego-involving or task-involving way are called achievement goal orientations (i.e., task orientation and ego orientation). Thus, being task oriented or ego oriented typically indicates that the individual will be task-involving or ego-involving in an achievement task (Roberts & Papaioannou, 2014). These two goal orientations are considered to be orthogonal (independent) and can co-exist in high or low combinations of task and ego oriented goals (Roberts, 2012). In addition, goal orientations appear to be relatively stable over time but are not considered to be traits, rather cognitive schemas that can be subject to change depending on one's circumstances (Roberts, 2012; Roberts, Treasure, & Balague, 1998). Research investigating goal orientations in sport have typically found that task-oriented goals are associated with positive cognitive, behavioural and affective outcomes. Conversely, ego-oriented goals are associated with negative or neutral cognitive, behavioural and affective outcomes (Harwood, Spray, & Keegan, 2008).

An athlete's state of involvement is dependent on the interaction between their goal orientations and the motivational climate (Ames, 1992). Created by important others such as the coach, the motivational climates are situational cues that encourage task or ego involvement. Athletes may perceive two main motivational climates: task-involving climate and ego-involving climate. In a task-involving climate the coach encourages athletes to work together, emphasises skill development, recognises effort, and accepts that mistakes are part of learning (Newton, Duda, & Yin, 2000). In an ego-involving climate the coach promotes rivalry among peers, mistakes are punished and favouritism is advocated (Newton et al., 2000).

There are a number of studies that have examined correlates of motivational climates. Harwood, Keegan, Smith and Raine (2015) conducted a systematic review to examine correlates of the motivational climate in sport and physical activity contexts.

They included 104 studies and the vast majority of these studies focused on the climate created by the coach. They found that the coach-created climates were associated with goal orientations, self-perception and performance, motivational regulation processes, emotions, affect and cognitions, beliefs and values, and dispositions and traits. Specifically, a task-involving climate was positively associated with task orientation, mastery approach and mastery avoidance goals, performance approach goals, all basic psychological needs, confidence and self-esteem, intrinsic motivation, identified regulation, compound motivation, positive affect, positive attitudes towards sport, adaptive competitive strategies, pro-social moral functioning, and dispositional flow. A task-involving climate was inversely associated with negative affect, negative thoughts and worries, maladaptive competitive strategies, and anti-social moral functioning. A task-involving climate was unrelated to ego orientation, performance avoidance goals, physical self-perceptions, introjected and external regulation, amotivation, age and experience, and perfectionism.

In the systematic review, an ego-involving climate was positively associated with ego orientation, mastery avoidance goals, performance approach and avoidance goals, external regulation, amotivation, negative affect, negative thoughts and worries, maladaptive competitive strategies, anti-social moral functioning and perfectionism. An ego-involving climate was inversely associated with autonomy, relatedness, compound motivation and positive affect. An ego-involving climate was unrelated to task orientation, mastery approach goals, competence, confidence and self-esteem, physical self-perceptions, objective performance measures, intrinsic motivation, identified and introjected regulation, positive attitudes towards sport, adaptive competitive strategies, pro-social moral functioning, age and experience and dispositional flow (Harwood et al., 2015). Thus, these findings suggest that task-involving climates are positively associated with more desirable psychological experiences and negatively associated with less desirable psychological experiences in sport. In contrast, ego-involving

climates are positively associated with less desirable psychological experiences and negatively associated or unrelated with more desirable psychological experiences in sport.

5.1.1.2 Self-determination theory

Self-determination theory (SDT) is another key theory used as a framework for understanding motivation in sport. SDT was developed by Deci and Ryan (1985, 2002) and has continued to develop over the past five decades. It is an organismic approach to motivation. That is, individuals have an innate tendency towards psychological growth, integration of the self and behavioural self-regulation. This approach proposes that individuals seek challenges and experiences that offer an opportunity to learn and master new skills (Weiss & Amorose, 2008). SDT explains individual differences in motivation based on motivational orientations, interpersonal perceptions and the contextual influence. Consequently, SDT is a broad framework that describes intrinsic and extrinsic sources of motivation. It is also considered a meta-theory composed of five mini-theories (Standage & Ryan, 2012).

These mini-theories are known as Basic Psychological Needs Theory, Organismic Integration Theory, Cognitive Evaluation Theory, Causality Orientations Theory, and Goal Contents Theory (Vansteenkiste, Niemiec, & Soenens, 2010). Basic Psychological Needs Theory describes the psychological needs and specifies their association with motivation, engagement and well-being. Organismic Intergration Theory introduces forms of extrinsic motivation (engaging in an activity for external reasons) and specifies antecedents, characteristics and consequences. Cognitive Evaluation Theory concerns intrinsic motivation (engaging in an activity for internal reasons) and the effects of the social context on this type of motivation. Causality Orientations Theory describes individual differences in motivational orientations and the regulation of behaviours that impacts one's motivation. Goal contents theory

concerns the distinction between intrinsic and extrinsic goals and their impact on motivation and well-being (Vansteenkiste et al., 2010).

These mini-theories share the concept of three universal psychological needs. Specifically, these psychological needs are important for optimal functioning and are referred to as competence, relatedness, and autonomy. Conditions that support one's competence (the need to perceive behaviour as effective), relatedness (the need to perceive belonging and feeling connected to others) and autonomy (the need to perceive that actions are self-governing) are considered to nurture the highest form of quality motivation for activities (Ryan & Deci, 2002). Research investigating these three universal needs have typically found that when they are satisfied they are associated with optimal psychological outcomes and when these needs are thwarted they are associated with non-optimal psychological outcomes (Weiss & Amorose, 2008).

SDT proposes that the interaction between the individual and the social context is the basis for human motivation, behaviour and well-being (Deci & Ryan, 1985, 2000). With this in mind, interpersonal styles of important others such as the coach can influence athlete's experiences and either satisfy or thwart their psychological needs. Three interpersonal styles may be perceived by athletes: autonomy supportive coaching, socially supportive coaching, and controlling coaching (Ntoumanis, 2012). Autonomy supportive coaching acknowledges the feelings of their athletes and creates conditions for athletes to experience a meaningful sense of choice, volition, and self-initiated striving (Bartholomew, Ntoumanis, & Thogersen-Ntoumani, 2010). Socially supportive coaching (or interpersonal involvement) promotes a sense of caring, empathy, and feelings of being valued among athletes (Mageau & Vallerand, 2003). In contrast, controlling coaching imposes a specific and preconceived way of thinking and behaving upon their athletes by pressurising and coercing them (Bartholomew et al., 2010).

Research has identified correlates of coach interpersonal styles in sport. These correlates have typically been concerned with self-perception and performance,

motivational regulation processes, affect and physical health symptoms. Specifically, autonomy supportive and socially supportive coaching have been found to be positively associated with all basic psychological needs, needs satisfaction, vitality, skill and performance self-concept, coach-athlete relationship quality, improvement/effort, social support, intrinsic satisfaction, and positive affect (Adie et al., 2012; Amorose & Anderson-Butcher, 2007; Bartholomew et al., 2011; Felton & Jowett, 2013; Reinboth, Duda, & Ntoumanis, 2004). Conversely, autonomy supportive coaching and socially supportive coaching has been found to be negatively associated with controlling coaching, needs thwarting, negative affect and physical ill-health symptoms (Adie et al., 2012; Bartholomew et al., 2011; Felton & Jowett, 2013).

Controlling coaching has been found to be positively associated with needs thwarting, introjected regulation, amotivation, negative affect. Conversely, controlling coaching has been found to be negatively associated with autonomy support, perceived basic psychological needs, needs satisfaction, intrinsic motivation, positive affect, and vitality (Bartholomew et al., 2011; Felton & Jowett, 2013; Gucciardi, Stamatis, & Ntoumanis, 2017; Isoard-Gautheur, Guillet-Descas, & Lemyre, 2012). Collectively, these findings suggest that autonomy supportive coaching and socially supportive coaching is positively associated with more desirable psychological experiences and negatively associated with less desirable psychological experiences in sport. In contrast, controlling coaching is positively associated with less desirable psychological experiences and negatively associated with more desirable psychological experiences in sport.

5.1.1.3 The coach-created empowering and disempowering climate

Duda (2013) recognised that the key features of AGT and SDT overlapped with one another. Both theories have emphasised the importance of significant others regarding an athlete's motivation. In particular, the way the coach behaves and how they

structure the environment in training and competition. Consequently, a hierarchical model of the coach-created motivational climate was developed and the features from both theories (i.e., motivational climate and interpersonal styles) were combined (Duda & Appleton, 2016). In conceptualising the coach-created motivational climate, two higher order themes were created; empowering climate and disempowering climate. An empowering climate is characterised by the three lower-order features; task-involving climate, autonomy supportive coaching and socially supportive coaching. A disempowering climate is characterised by two lower-order features; ego-involving climate and controlling coaching (Duda & Appleton, 2016).

As previously identified, there is a large body of research that has examined the individual dimensions of this hierarchical model. However, few studies have examined empowering and disempowering climates. To date, there are two studies that have examined the coach-created motivational climate and associating psychological factors. In a study by Zourbanos et al. (2016), their primary aim was to examine the mediating role of self-talk in the relationship between perceived coach-created climate and athlete self-efficacy. Two hundred and eighty-nine youth football players completed instruments on self-talk, the coach-created climate and self-efficacy. Findings revealed that self-talk partially mediated the relationship (positive self-talk) between empowering climate and self-efficacy. Regarding the bivariate correlations, an empowering climate was positively related with positive self-talk and self-efficacy and negatively related with negative self-talk. A disempowering climate was positively related with negative self-talk and unrelated to positive self-talk and self-efficacy in youth footballers.

In another study by Appleton and Duda (2016), they aimed to examine whether an empowering climate moderated the debilitating effects of a disempowering climate on athletes' psychological health and functioning. Four hundred and six athletes, of various sports and abilities, completed instruments regarding the coach-created climate, enjoyment, burnout, self-esteem and physical ill-health symptoms. Findings revealed

that an empowering climate tempered the relationship between a disempowering climate and enjoyment, reduced sense of accomplishment, and physical ill-health symptoms. Regarding the bivariate correlations, an empowering climate was positively related with enjoyment and self-worth, and negatively related with burnout and physical ill-health symptoms. A disempowering climate was positively related with burnout and physical ill-health symptoms and negatively related with enjoyment and self-worth in athletes.

5.1.2 The coach-created climate and ill-being

Research has demonstrated that the motivational climate created by the coach influences the quality of an athlete's experiences and their psychological health (Duda & Balaguer, 2007). This research has led to the development of an intervention programme for coaches to promote empowering climates in sport (Duda, 2013). The programme specifically focuses on encouraging intrinsic goals and autonomous motivation in their athletes, and creating a caring, connected and respectful environment to ultimately prevent disempowering behaviours. If these disempowering behaviours are not eradicated athletes may feel controlled and perceive that they have less volition and choice as a result of the coach's behaviour. Athletes can also feel incompetent in training and competition and may even feel rejected by the coach. Consequently, this could influence the development of ill-being such as burnout and depression (Appleton & Duda, 2016).

5.1.2.1 The coach-created climate and burnout

Athlete burnout has received some attention with respect to investigating the relationship between the coach-created climate and ill-being. Typically, dimensions of an empowering and disempowering climate have been examined in relation to athlete burnout. Regarding an empowering climate, autonomy supportive coaching has been found to have a negative relationship with total burnout in athletes and dancers (Bartholomew et al., 2011; Quested & Duda, 2011). Autonomy supportive coaching has

also been found to be negatively associated with all individual burnout symptoms (Quested & Duda, 2011). However, some researchers have found differences when examining the individual burnout symptoms. In another study examining autonomy supportive coaching, findings demonstrated a negative relationship with reduced sense of accomplishment and devaluation but unrelated to exhaustion in athletes (Isoard-Gautheur et al., 2012). Similarly, a task-involving climate was found to be unrelated to exhaustion in athletes (Reinboth & Duda, 2004). In another study examining a task-involving climate, findings demonstrated a negative relationship with exhaustion and reduced sense of accomplishment but were unrelated to devaluation (Lemyre, Hall, & Roberts, 2008). To date, one study has examined the composite of a coach-created climate and burnout in athletes (Appleton & Duda, 2016). In this study, an empowering climate (i.e., autonomy supportive coaching, socially supportive coaching and task-involving climate) was also found be negatively associated with reduced accomplishment and devaluation but unrelated to exhaustion.

Regarding a disempowering climate, controlling coaching was found to be positively associated with total athlete burnout (Barcza-Renner, Eklund, Morin Habeeb, 2016; Bartholomew et al., 2011). When examining individual burnout symptoms, controlling coaching was also found to be positively associated with reduced sense of accomplishment, devaluation and exhaustion (Isoard-Gautheur et al., 2012). Similarly, ego-involving climates have demonstrated positive relationships with exhaustion, devaluation and a near significant relationship for reduced sense of accomplishment (Lemyre et al., 2008; Reinboth & Duda, 2004). Finally, a disempowering climate (controlling coaching and ego-involving climate) was found to be positively associated with all burnout symptoms in athletes (Appleton & Duda, 2016). Collectively, although there is some variability across coach-created climate measures and individual burnout symptoms, an empowering climate appears to reduce the likelihood of experiencing

burnout, whereas, a disempowering climate appears to increase the likelihood of experiencing burnout.

There are also qualitative accounts of burned out athletes discussing the importance of the coach in the development of burnout. In a study by Gould, Tuffey, Udry, and Loehr (1996b) they aimed to understand athletes' experiences of the burnout process. Ten junior tennis players were selected to be interviewed on the basis that they were the most burned out from an initial quantitative study. Participants perceived a range of psychological (e.g., motivation), organisational (e.g., travel), social (e.g., lack of social life) and physical factors (e.g., fatigue) to be associated with development of burnout. The coach was also perceived to be a factor. In particular, coach pressure to practice and win was a factor in the development of burnout. Athletes were also asked to provide advice and recommendations to others (i.e., coaches, teammates and parents) regarding the stress associated with tennis. Participants suggested that better communication with the coach and providing more support and autonomy over decision-making may have relieved stress and consequently avoided burnout.

In another qualitative study, Gustafsson et al. (2008) aimed to explore how burnout is experienced in elite athletes, including identifying possible antecedents and consequences. Ten elite athletes from various sports were selected to interview based on their burnout scores on a quantitative measure. The athletes also reported that they had decided to leave their sport as a result of burnout. Similar to Gould et al.'s (1996b) findings, participants perceived psychological (e.g., personality), organisational (e.g., increased training load), physical (e.g., insufficient sleep), and social factors (e.g., peer conflicts) to be associated with burnout. Participants also identified the coach as a factor in their experience of burnout. Specifically, negative performance demands relating to high coach expectations and a lack of social support relating to low coach support and empathy were associated with burnout. Thus, both the qualitative and quantitative

studies indicate that the coach may play an important role in development athlete burnout.

5.1.2.2 The coach-created climate and depression

In comparison to athlete burnout, the relationship between the coach-created climate and depression has been studied to a lesser extent. These studies were identified in the systematic review in study one. Regarding an empowering climate, autonomy supportive coaching was found to be negatively associated with depressive symptoms (Bartholomew et al., 2011; Shanmugam et al., 2014a). Socially supportive coaching was also found to be negatively associated with depressive symptoms (Shanmugam et al., 2011, 2013). Regarding a disempowering climate, controlling coaching was found to be positively associated with depressive symptoms (Bartholomew et al., 2011; Shanmugam et al., 2011, 2013). At present, there are currently no studies that have examined the composite variables of empowering and disempowering climates and the relationship with depression. However, dimensions of an empowering climate appear to reduce the likelihood of experiencing depression, whereas, dimensions of a disempowering climate appear to increase the likelihood of experiencing depression.

There is also a qualitative account of athletes whom indicated that negative coach interpersonal behaviours could influence feelings of depression. Gervis and Dunn (2004) aimed to investigate athlete's relationships with their coach and explore their perceptions of emotional abuse in the coaching context. Twelve former elite athletes from various sports were retrospectively interviewed on their experiences with coaches during their childhood. The analysis specifically focused on athletes' negative experiences with coaches. Athletes reported that coaches' behaviour that reflected humiliation, shouting, blaming, rejection, isolating or ignoring could lead them to feeling depressed. In addition, participants also reported that negative coaching behaviour could be detrimental to their confidence and self-worth and incite feelings of

fear, anger, and humiliation. Thus, like burnout, both the qualitative and quantitative studies indicate that the coach may play an important role in the development of depression.

5.1.3 Perfectionism, the coach-created climate and ill-being

Social factors and wider societal factors are also recognised as contributors to the development of perfectionism (Flett, Hewitt, Oliver, & Macdonald, 2002). Researchers have suggested that coaches may contribute to the development of perfectionism in athletes. That is, young athletes may develop perfectionism in response to environmental pressures, particularly those that are open to external influence and may model others behaviour, as well as believing that perfectionistic standards are achievable (Appleton & Curran, 2016). It is suggested by Flett et al. (2002) that internalising external pressures leads to SPP and translation of external pressures into one's identity or self-concept will lead to SOP.

A number of studies in sport have examined the relationship between dimensions of perfectionism and dimensions of a coach-created climate in athletes and dancers (Barcza-Renner et al., 2016; Carr & Wyon, 2003; Lemyre et al., 2008). In these studies, interpersonal dimensions of perfectionism (SPP, parental criticism and parental expectation) were positively associated with dimensions of disempowering climate. Conversely, interpersonal dimensions of perfectionism were either negatively related or unrelated to dimensions of an empowering climate. Intrapersonal dimensions of perfectionism (SOP, personal standards, doubts about actions and concern over mistakes) were positively related with dimensions of a disempowering climate. In most cases, intrapersonal dimensions of perfectionism were either negatively related of unrelated to dimensions of an empowering climate (Barcza-Renner et al., 2016; Carr & Wyon, 2003; Lemyre et al., 2008).

Although it is suggested that the motivational climate may lead to the development of perfectionism, the aforementioned studies were cross-sectional. Thus, causality cannot be established. In the only longitudinal study to date, Nordin-Bates, Hill, Cummings, Aujla, and Redding (2014) aimed to test this assertion to determine the direction of the relationship over a six month period in youth dancers. They found that there was some support for the motivational climate predicting dimensions of intrapersonal perfectionism. In particular, a task-involving climate positively predicted PS but not PC. However, an ego-involving climate was unrelated to perfectionism. There was also evidence to suggest that the relationship is reciprocal and perfectionism may influence the perception of the climate. Specifically, PC negatively predicted a task-involving climate and positively predicted an ego-involving climate. However, PS was unrelated to a task-involving or ego-involving climate.

From a theoretical and empirical perspective, there are clear links between perfectionism, the coach-created climate and ill-being. Empirical evidence has demonstrated the relationship between perfectionism and ill-being, particularly SPP, in study two and elsewhere. There are also links between the coach-created climate and ill-being, which indicates that a more empowering climate reduces the likelihood of experiencing ill-being and conversely a disempowering climate exacerbates the likelihood of experiencing ill-being. Similarly, research has supported the relationship between perfectionism and coach-created climate and indicated that interpersonal and some intrapersonal dimensions of perfectionism are positively associated with a disempowering climate. Conversely, there is either a negative or unrelated relationship between dimensions of perfectionism predicting an empowering climate. As there are a number of studies which have established that these relationships exist, Hayes (2013) suggests that attention begins to shift towards understanding the mechanisms which underpin these relationships. By examining moderators, this may indicate under what conditions relationships will be fostered or inhibited.

5.1.4 Moderation and rationale for this study

Based on the preceding overview, the coach-created motivational climate is an important part of an athlete's experience and directly impacts on an athlete's functioning and health. This is especially dependent on whether the coach cultivates an environment which is either empowering or disempowering. There are also distinct relationships between dimensions of perfectionism, the coach-created climate and ill-being. Thus, after establishing that there is a longitudinal relationship between perfectionism, burnout symptoms and depressive symptoms, examining the moderating roles of the coach-created climate is the next step in this line of research. Considering moderators of the perfectionism – ill-being relationship is an emerging area of interest.

Outside of sport there are a number of studies that have examined moderators on the perfectionism – ill-being relationship. In particular, moderators of the perfectionism and depression relationship have received some empirical attention. Two studies have demonstrated that psychological factors can have buffering effects on the perfectionism and depression relationship. Specifically, these studies examined the moderating role of social support and self-efficacy on the relationship between perfectionism and depressive symptoms in University students (Zhang & Cai, 2012; Zhou, Zhu, Zhang, & Cai, 2013). Findings revealed that high social support and high self-efficacy buffered the relationship between PC and depressive symptoms. However, social support and self-efficacy did not moderate the relationship between PS and depressive symptoms.

Some studies have also demonstrated that psychological factors can have exacerbating effects on the perfectionism and depression relationship. Negative attributional style and loneliness have been found to exacerbate the relationship between perfectionism (SOP and SPP) and depressive symptoms in university students (Chang & Sanna, 2001; Chang, Sanna, Chang, & Bodem, 2008). Silencing the self (perceived loss of one's identity) was also found to exacerbate the relationship between SPP and

depressive symptoms in university students (Flett, Besser, Hewitt, & Davis, 2007). However, the moderating role of silencing the self on the SOP and depressive symptoms relationship was not examined in this study. In another study, low friendship intimacy was found to exacerbate the relationships between SPP and depressive symptoms in university students. When examining SOP, friendship intimacy was not a significant moderator (Mackinnon, Sherry, Pratt, & Smith, 2014).

One study has investigated moderators of the perfectionism and burnout relationship in non-athlete samples. Chang, Chou, Liou, and Tu (2016) investigated the moderating role of team workplace friendship on the relationship between perfectionism and job burnout in technology research and development employees. Findings demonstrated that team workplace friendship buffered the relationship between PC and job burnout. However, the moderating role of team workplace friendship on the PS and burnout relationship was not investigated. Together these findings, alongside the studies that have investigated moderators of the perfectionism and depression relationship, indicate that individual differences and interpersonal relationships can buffer or exacerbate the perfectionism – ill-being relationship, particularly SPP and PC. In comparison, moderators of SOP and PS have yet to be identified when examining ill-being. In developing our understanding of moderating relationships, it is proposed that considering combinations of perfectionism (as well as examining them individually) could tell us more about the nature of outcomes, thus offering a worthwhile opportunity of investigation (Gaudreau, 2012; Hewitt et al., 2017).

In sport, relatively little is known about moderators of the perfectionism – ill-being relationship. To date, there is one study that has examined moderators of the perfectionism and burnout relationship in athletes. Appleton, Hill, and Hall (2009) investigated the moderating role of goal orientations and athlete and perceived coach satisfaction with goal attainment in junior-elite male athletes. However, findings provided no evidence of either goal orientations or satisfaction with goal attainment

moderating the relationship between perfectionism (SOP and SPP) and athlete burnout. There is currently no published research that has examined moderators of the perfectionism and depression relationship in sport.

Although little research has been conducted, there have been recent calls to examine moderators of the perfectionism – ill-being relationship in sport (Hall et al., 2012; Gaudreau, 2016). This is because it is suggested that athletes experiencing self-critical forms of perfectionism will not all experience debilitating psychological outcomes (Hall et al., 2012). Flett and Hewitt (2005) also suggest perfectionism may be moderated by important qualities such as the features of the athlete's environment. Thus, the motivational climate may be a possible moderator as those high in PC (i.e., self-critical forms of perfectionism) may perceive the climate to be less threatening if it is empowering (Hall et al., 2012). Therefore, examining the interactive effects of the coach-created climate may provide valuable insight into the relationship between perfectionism, burnout symptoms and depressive symptoms. Examining this relationship may also indicate possible avenues for sport psychologists to deliver interventions to reduce the likelihood of athletes experiencing ill-being.

5.1.5 The purpose of study three

The purpose of this study was to examine the relationships between perfectionism, coach-created climate and ill-being in youth football players. Of especial interest is the moderating role of the coach-created climate on combinations of perfectionism (i.e., high/low levels of SOP and SPP), when predicting burnout symptoms and depressive symptoms. Two hypotheses were derived from existing research. First, it was hypothesised that SOP and an empowering climate would be associated with lower levels of burnout symptoms and depressive symptoms, whereas, SPP and a disempowering climate would be associated with higher levels of burnout symptoms and depressive symptoms. Second, it was hypothesised that an empowering

climate would buffer the effects of all combinations of perfectionism, hence lower levels of depressive symptoms and burnout symptoms. Conversely, a disempowering climate would exacerbate the effects of all combinations of perfectionism, hence higher levels of depressive symptoms and burnout symptoms.

5.2 Method

5.2.1 Participants

Youth male football players ($N = 267$) were recruited from professional football academies in England. Players average age was 16.16 years *(SD = 1.77, range 14 – 21)*. Participants had joined an academy at around 11.14 years old ($SD = 3.23$) and spent an average of 4.38 years at their current club ($SD = 3.38$). Participants rated their participation in football as extremely important in comparison to all other activities they take part in ($M = 9.55$, $SD = 1.01$, 1 = *not at all important* to 10 = *extremely important*).

5.2.2 Procedure

The study was granted ethical approval by the University's ethics committee (see appendix A.1). Football academies were contacted to provide information about the study and obtain their permission for their academy players to participate. Thereafter, all players received information about the study and their involvement (see appendix B.1). For youth football players under the age of 18, an opt-out approach to parental consent was adopted (see appendix B.2). Prior to completing the questionnaire participants completed an informed consent or a willingness to participate form for those under the age of 18 (see appendix B.3). Questionnaires were distributed in a training session on one occasion at the academies. The questionnaires took approximately 20 minutes to complete and all participants received a debrief form afterwards (see appendix B.4).

5.2.3 Instruments

5.2.3.1 Multidimensional perfectionism

The Hewitt and Flett (1991) Multidimensional Perfectionism Scale brief version (HMPS: Cox, Enns, & Clara, 2002) was used to assess self-oriented perfectionism (SOP) and socially prescribed perfectionism (SPP) (see appendix C.2). Other oriented perfectionism was not assessed in this study. Each subscale of the brief HMPS contains 5 items, and each item is measured on a seven point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*). The stem was adapted to make the statements specific to participant's football participation (e.g., "In football…"). The SOP subscale reflects exceedingly high standards from one's self, accompanied by harsh self-criticism (e.g., "I strive to be as perfect as I can be."). The SPP subscale reflects the perception of exceedingly high standards from others accompanied by critical evaluation from others (e.g., "I feel that people are too demanding of me**.**"). Evidence to support the validity and reliability of this instrument has been provided by Cox et al. (2002). The brief MPS has demonstrated internal reliability in youth male football players (Hill, 2013) as well as other adolescent athlete samples (e.g., Curran et al., 2014).

5.2.3.2 Coach-created motivational climate

The Empowering and Disempowering Motivational Climate Questionnaire-Coach (EDMCQ-C: Appleton, Ntoumanis, Quested, Viladrich, & Duda, 2016) was used to assess the coach-created climate (see appendix C.3). The EDMCQ-C is a 34 item measure and is divided into the empowering motivational climate (17 items) and the disempowering motivational climate (17 items). The empowering coach-created climate items measures task-involving (e.g., "My coach acknowledged players who tried hard"), autonomy supportive (e.g., "My coach gave players options and choices") and socially supportive (e.g., "My coach listened openly and did not judge players' personal

feelings") dimensions. The disempowering coach-created climate measures ego-involving (e.g., "My coach shouted at players for messing up") and controlling coaching (e.g., "My coach was less accepting of players if they disappointed him or her") dimensions. Each item is measured on a 5 point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). Evidence to support the validity and reliability of this instrument has been provided by Appleton et al. The ABQ has also demonstrated adequate internal consistency in other youth athlete samples (e.g., Appleton, & Duda, 2016).

5.2.3.3 Athlete burnout

The Athlete Burnout Questionnaire (ABQ: Raedeke & Smith, 2001) was used to assess burnout (see appendix C.4). The ABQ is a 15 item measure with three subscales of 5 items that assess reduced sense of accomplishment (e.g., "I am not performing up to my ability in football."), emotional and physical exhaustion (e.g., "I am exhausted by the mental and physical demands of football.") and sport devaluation (e.g., "The effort spent in football would be better spent doing other things."). Each item is measured on a 5 point Likert scale (1 = *almost never* to 5 = *almost always*). Evidence to support the validity and reliability of this instrument has been provided by Raedeke and Smith (2001). The ABQ has also demonstrated adequate internal consistency with other youth athlete samples including football (e.g., Gustafsson et al., 2013).

5.2.3.4 Depressive symptoms

The Center for Epidemiological Studies Depression Scale (CES-D: Radloff, 1977) was used to measure the incidence of depressive symptoms (See appendix C.5). The CES-D comprises 20-items whereby participants are asked to reflect on their feelings/behaviours over the past week (e.g., "My sleep was restless", "I felt depressed", and "I did not feel like eating; my appetite was poor.") on a four point Likert scale (0 = *rarely or none of the time* to 3 = *most or all of the time*). A higher score indicates greater frequency and number of depressive symptoms; the cut off for mild to major depressive

symptoms on the CES-D is a score $\geq$ 16 (Radloff, 1991). However, this instrument should not be used as a clinical diagnosis of depression (Radloff, 1991). Evidence to support the validity and reliability of this instrument has been provided by Radloff (1977, 1991). The CES-D has also demonstrated adequate internal consistency with other youth athlete samples (e.g., Nixdorf et al., 2013).

5.3 Results

5.3.1 Preliminary analyses

The data was screened prior to analyses to check for errors, missing values and outliers (see Tabachnick & Fidell, 2013, for details of this procedure). The frequency of missing data was low (< 5%). Little's missing completely at random (MCAR) test provided evidence that data were missing at random: χ^2 (4774) = 4857.57, $p > .05$. To preserve the characteristics of the data and minimise the impact of missing data, missing data was replaced with the mean of the available items from the relevant subscale for that individual (Graham, Cumsille, & Elek-Fisk, 2003). Six univariate outliers (z > 3.29) were removed from the data before analysis. One multivariate outlier was removed. No others participant showed a Mahalanobis distance larger than the critical value of χ^2 (8) = 26.13, $p < .001$. Depressive symptoms and devaluation deviated from normal (positive skewness). This was expected based on non-clinical populations reporting lower depression and participants reporting that football was highly meaningful, hence lower devaluation. Positive skewness is also reported by others for burnout and depression in similar circumstances (e.g., De Francisco et al., 2016; Madigan et al., 2016b). Hayes (2013) also suggests that non-normality is expected in ordinary least squares regression and only severe violations of non-normality in small samples or skewness in the moderating variable impact the validity. Therefore, the

analysis proceeded. Descriptive statistics, Cronbach's alpha and bivariate correlations are displayed in Table 5.1.

5.3.2 Descriptive statistics and bivariate correlations

Participants demonstrated high SOP scores and medium levels of SPP. Participants mean climate scores reflected a high empowering climate and a medium disempowering climate. The mean scores of depressive symptoms and burnout symptoms were generally low. Regarding prevalence, 24% of the sample reported mild to major depressive symptoms (CES-D $\geq$ 16) and of those 12% reported major depressive symptoms (CES-D $\geq$ 23). In regards to the bivariate relationship, SOP and SPP displayed a small positive relationship with each other. SOP displayed a positive medium relationship with an empowering climate and a small negative relationship with a disempowering climate. SPP displayed a small negative relationship with an empowering climate and a medium positive relationship with a disempowering climate. SOP displayed a small-to-medium negative relationship with depressive symptoms and burnout symptoms. SPP displayed a medium-to-large positive relationship with depressive symptoms and burnout symptoms. An empowering climate displayed a negative medium relationship with depressive symptoms and burnout symptoms and a disempowering climate displayed a positive medium relationship with depressive symptoms and burnout.

Table 5.1 Descriptive statistics, Cronbach's alpha and bivariate correlations

Variable	1	2	3	4	5	6	7	8
1. SOP								
2. SPP	.05							
3. Empowering Climate	.33**	-.15*						
4. Disempowering Climate	-.09	.32**	-59**					
5. Depressive Symptoms	-.13*	.48**	-.37**	.35**				
6. Reduced Accomplishment	-.36**	.33**	-.40**	.30**	.51**			
7. Exhaustion	-.13*	.41**	-.25**	.30**	.47**	.48**		
8. Devaluation	-.34**	.31**	-.39**	.29**	.55**	.62**	.50**	
M	5.51	3.56	3.92	2.79	0.55	2.16	2.18	1.48
SD	0.79	0.91	0.48	0.58	0.40	0.66	0.70	0.63
A	.70	.60	.89	.87	.86	.74	.80	.80

Note. SOP = self-oriented perfectionism. SPP = socially prescribed perfectionism. $* = p < .05$, $** p < .01$ (two-tailed).

Table 5.2 Main and interaction effects for perfectionism and empowering climate predicting depressive symptoms and burnout symptoms

	Depressive symptoms		Exhaustion		Devaluation		Reduced accomplishment	
	B	t	B	t	B	T	B	t
Main effects								
SOP	-.10	-.94	-.07	-1.18	-.20	-4.35**	-.24	-5.31**
SPP	.79	6.97**	.30	6.31**	.21	4.93**	.24	5.73**
Empowering climate	-.28	-5.24**	-.07	-2.26*	-.10	-4.45**	-.10	-4.54**
Two-way interactions								
SOP x SPP	-.01	-.38	-.01	-1.14	-.03	-2.12*	-.02	-1.73
SOP x Empowering climate	.00	.42	.00	.17	.01	3.78**	.00	.75
SPP x Empowering climate	-.02	-1.61	-.00	-.42	-.00	-.61	-.00	-.38
Three-way interactions								
SOP x SPP x Empowering climate	.00	.31	.00	-.63	-.00	-.45	.00	-.77
Cumulative $F(R^2)$	17.66** (.34)		9.84** (.22)		14.95** (.34)		16.17** (.32)	
Three-way interaction $\Delta F(\Delta R^2)$	.10 (.0003)		.13 (.0011)		.20 (.0008)		.59 (.0025)	

Note. SOP = self-oriented perfectionism. SPP = socially prescribed perfectionism. $* = p < .05$, $** p < .01$

Table 5.3 Main and interaction effects for perfectionism and disempowering climate predicting depressive symptoms and burnout symptoms

	Depressive symptoms		Exhaustion		Devaluation		Reduced accomplishment	
	B	t	B	t	B	t	B	t
Main effects								
SOP	-.27	-2.47*	-.11	-1.94	-.28	-5.18**	-.32	-6.54**
SPP	.77	6.39**	.27	5.71**	.20	4.54**	.23	5.39**
Disempowering climate	.16	3.44**	.07	3.02**	.06	3.29**	.06	3.28**
Two-way interactions								
SOP x SPP	-.03	-1.04	-.02	-1.34	-.03	-2.75**	-.02	-2.05
SOP x Disempowering climate	.00	.23	-.00	-.66	-.01	-1.45	-.01	-1.09
SPP x Disempowering climate	.00	.21	-.00	-.90	-.00	-.47	-.00	-.65
Three-way interactions								
SOP x SPP x Disempowering climate	.00	.25	-.00	-.63	.00	.81	.00	2.44*
Cumulative F (R^2)	14.25** (.30)		11.84** (.23)		11.87** (.30)		14.38** (.31)	
Three-way interaction $\Delta F(\Delta R^2)$	.06 (.0002)		.39 (.0020)		.66 (.0024)		5.94 (.0164)*	

Note. SOP = self-oriented perfectionism. SPP = socially prescribed perfectionism. * = $p < .05$, ** $p < .01$

5.3.3 Moderated moderation regression analyses

Following data screening and descriptive analyses, the PROCESS macro for SPSS (see Hayes, 2013) was used to conduct a moderated moderation analyses (i.e., three-way interaction). This is depicted by model 3 (Hayes, pp. 444), whereby the interaction term of *XMW* (interaction between SOP = *X*, Climate = *M* and SPP = *W*) on *Y* (burnout symptom/depressive symptoms) was tested. Predictor and moderator variables were mean centred. This was because zero was not in the response systems of *X*, *M* and *W* so mean-centring (done automatically in PROCESS) ensures these values are more meaningful. The heteroscedasticity-consistent standard error estimator was selected as advised by Hayes and Cai (2007) to ensure findings were not compromised by heteroscedasticity (done automatically in PROCESS). The Johnson-Neyman (J-N) technique was also selected in PROCESS for the probing of any significant interactions (see Bauer & Curran, 2005; Hayes 2013). Regarding plotting significant interactions, the decision was taken to plot the moderator on the *x*-axis to demonstrate the combinations of perfectionism (i.e., SOP and SPP). There are a number of ways of plotting 3-way interactions (see Aiken & West, 1991) and interaction terms are not dependent on ordering (i.e., A*B is the same and B*A). Thus, there are no "real" consequences for opting for one graph over another (i.e., the results are the same).

5.3.3.1 Depressive symptoms main effects and interactions

The interactive term between perfectionism and empowering climate on depressive symptoms included the main effects, two-way interactions and three-way interactions. The model was significant, $F_{(7,259)} = 17.66$, $R^2 = .34$, $p < .01$. The main effects, SPP ($B = .79$, $t =, 6.97$ $p < .01$) and empowering climate ($B = -.28$, $t = -5.24$, $p < .01$) were significant predictors of depressive symptoms. SOP did not significantly predict depressive symptoms. There were no significant two-way or three-way interactions between SOP, SPP and empowering climate. Therefore, the empowering

climate did not have a moderating effect on perfectionism when predicting depressive symptoms (see table 5.2).

The interactive term between perfectionism and disempowering climate on depressive symptoms included the main effects, two-way interactions and three-way interactions. The model was significant, $F(7,259) = 14.25$, $R^2 = .30$, $p < .01$. The main effects, SOP ($B = -.27$, $t = -2.47$, $p < .05$), SPP ($B = .77$, $t =, 6.39$, $p < .01$), and disempowering climate ($B = .16$, $t =, 3.44$ $p < .01$) were significant predictors of depressive symptoms. There were no significant two-way or three-way interactions between SOP, SPP and disempowering climate. Therefore, the disempowering climate did not have a moderating effect on perfectionism when predicting depressive symptoms (see table 5.3).

5.3.3.2 Exhaustion main effects and interactions

The interactive term between perfectionism and empowering climate on the burnout symptom exhaustion included the main effects, two-way interactions and three-way interactions. The model was significant, $F(7,259) = 9.84$, $R^2 = .22$, $p < .01$. The main effects, SPP ($B = .30$, $t = 6.31$, $p < .01$) and empowering climate ($B = -.07$, $t = -2.26$, $p < .05$) were significant predictors of exhaustion. SOP did not significantly predict exhaustion. There were no significant two-way or three-way interactions between SOP, SPP and empowering climate. Therefore, the empowering climate did not have a moderating effect on perfectionism when predicting exhaustion (see table 5.2).

The interactive term between perfectionism and disempowering climate on exhaustion included the main effects, two-way interactions and three-way interactions. The model was significant, $F(7,259) = 11.84$, $R^2 = .23$, $p < .01$. The main effects, SPP ($B = .27$, $t = 5.71$, $p < .01$) and disempowering climate ($B = .07$, $t = 3.02$, $p < .01$) were significant predictors of exhaustion. SOP did not significantly predict exhaustion. There were no significant two-way or three-way interactions between SOP, SPP and

disempowering climate. Therefore, the disempowering climate did not have a moderating effect on perfectionism when predicting exhaustion (see table 5.3).

5.3.3.3 Devaluation main effects and interactions

The interactive term between perfectionism and empowering climate on the burnout symptom devaluation included the main effects, two-way interactions and three-way interactions. The model was significant, F $(7,259) = 14.95$, $R^2 = .34$, $p < .01$. The main effects, SOP ($B = -.20$, $t = -4.35$, $p < .01$), SPP ($B = .21$, $t =, 4.93$, $p < .01$), and empowering climate ($B = -.10$, $t =, -4.45$ $p < .01$) were significant predictors of devaluation. There were two significant two-way interactions between SOP and SPP predicting devaluation ($B = -.03$, $t = -2.12$, $p < .05$) and between SOP and empowering climate predicting devaluation ($B = .01$, $t = 3.78$, $p < .01$). The three-way interaction was not significant. Therefore, the empowering climate had a moderating effect on SOP when predicting devaluation (see table 5.2).

To probe the significant two-way interaction, simple slopes analysis was undertaken to examine the moderating effect of empowering climate on low (- 1 SD below the mean), average (at the mean) and high (1 SD above the mean) SOP (low = 3.37, average = 3.94 and high = 4.51) when predicting devaluation. The simple slopes demonstrated that at low SOP the empowering climate significantly moderated the relationship ($B = .30$, $t = 2.65$, $p < .01$). The moderating effect was also significant at average SOP. However, when SOP was high there was not a significant moderating effect ($B = .06$, $t = .95$, $p > .05$) (see figure 5.1). The Johnson-Neyman technique identified an empowering score between 3.80 (33.71% below, 66.29% above) and 4.33 (82.77% below, 17.23% above) as the region of significance regarding a moderating effect of SOP on devaluation.

Figure 5.1 Interactive effects of SOP and the perceived motivational climate on devaluation
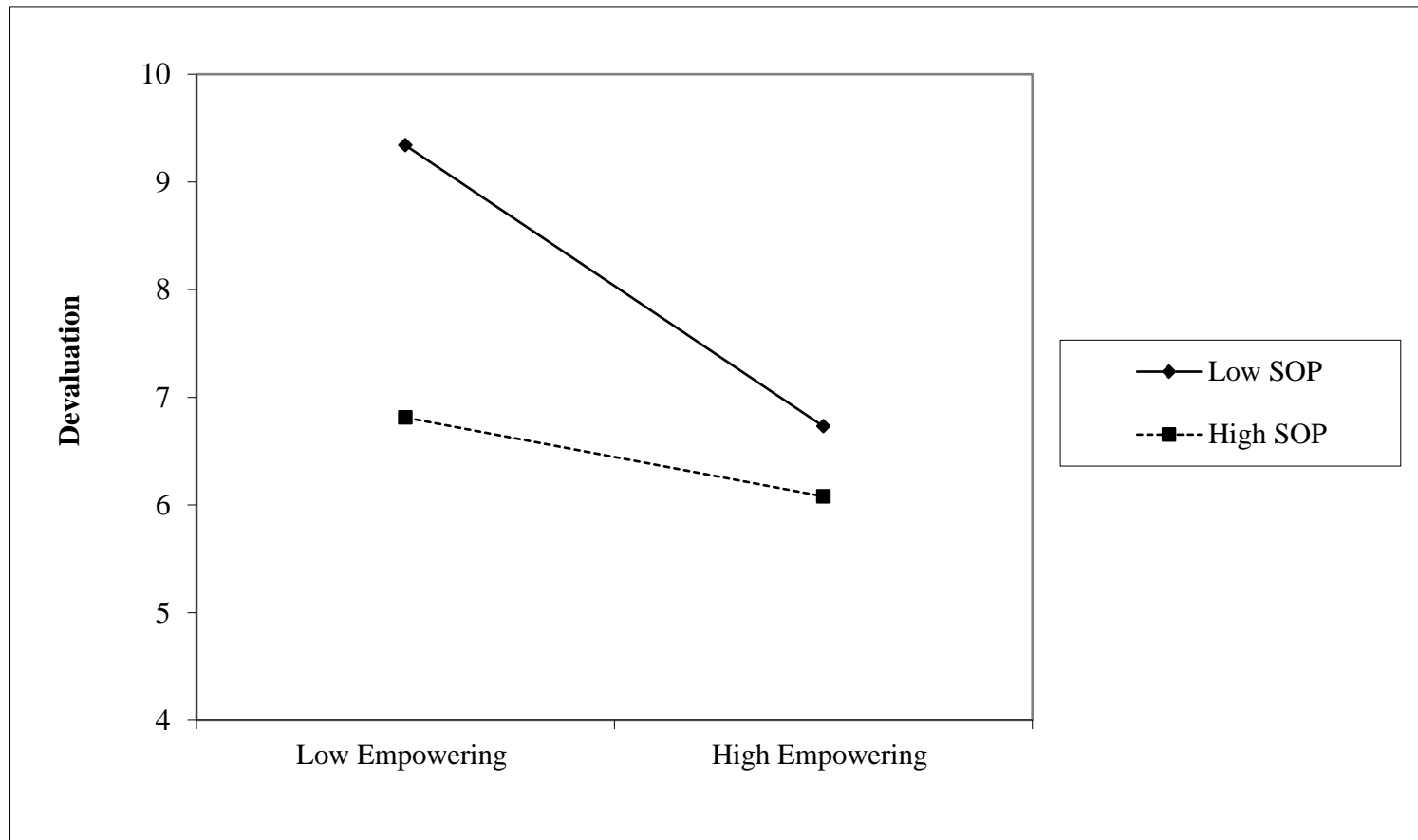
*Figure 5.1.*Simple slopes of the empowering climate moderating the relationship between SOP and devaluation. For the purposes of depicting the combinations of perfectionism in this study the moderating variable is shown on the *x*-axis.

The interactive term between perfectionism and disempowering climate on the burnout symptom devaluation included the main effects, two-way interactions and three-way interactions. The model was significant, $F_{(7,259)} = 11.87$, $R^2 = .30$, $p < .01$. The main effects, SOP ($B = -.28$, $t = -5.18$, $p < .01$), SPP ($B = .20$, $t =$, 4.54, $p < .01$), and disempowering climate ($B = .06$, $t =$, 3.29 $p < .01$) were significant predictors of devaluation. There was one significant two-way interaction between SOP and SPP predicting devaluation ($B = -.03$, $t = -2.75$, $p < .01$). The other two-way and three-way interactions were not significant between perfectionism and disempowering climate. Therefore, the disempowering climate did not have a moderating effect on perfectionism when predicting devaluation (see table 5.3).

5.3.3.4 Reduced accomplishment main effects and interactions

The interactive term between perfectionism and empowering climate on the burnout symptom reduced accomplishment included the main effects, two-way interactions and three-way interactions. The model was significant, $F_{(7,259)} = 16.17$, $R^2 = .32$, $p < .01$. The main effects, SOP ($B = -.24$, $t = -5.31$, $p < .01$), SPP ($B = .24$, $t =$, 5.73, $p < .01$), and empowering climate ($B = -.10$, $t =$, -4.54 $p < .01$) were significant predictors of reduced accomplishment. There were no significant two-way or three-way interactions between SOP, SPP and empowering climate. Therefore, the empowering climate did not have a moderating effect on perfectionism when predicting reduced accomplishment (see table 5.2).

The interactive term between perfectionism and disempowering climate on the burnout symptom reduced accomplishment included the main effects, two-way interactions and three-way interactions. The model was significant, $F_{(7,259)} = 14.31$, $R^2 = .31$, $p < .01$. The main effects, SOP ($B = -.32$, $t = -6.54$, $p < .01$), SPP ($B = .23$, $t =$, 5.39, $p < .01$), and disempowering climate ($B = .06$, $t =$, 3.26 $p < .01$) were significant predictors of reduced accomplishment. There were no significant two-way interactions

between SOP, SPP and disempowering climate. There was a significant three-way interaction between SOP, SPP and disempowering climate predicting reduced accomplishment ($B = .00$, $t = 2.44$, $p < .05$). This significant interaction accounted for an additional 1.64% of unique variance in reduced accomplishment. Therefore, the disempowering climate had a moderating effect on perfectionism when predicting reduced accomplishment (see table 5.3).

To probe the significant three-way interaction, simple slopes analysis was undertaken to examine the moderating effect of disempowering climate on low (- 1 SD below the mean), average (at the mean) and high (1 SD above the mean) SOP (low = 3.37, average = 3.94 and high = 4.51) and SPP (low = 1.90, average = 2.54 and high = 3.19) when predicting reduced accomplishment. The simple slopes demonstrated that at low SOP and low SPP the disempowering climate significantly moderated the relationship ($B = .13$, $t = 3.48$, $p < .01$). The moderating effect was also significant at low SOP and average SPP. However, at low SOP and high SPP there was not a significant moderating effect ($B = .03$, $t = .74$, $p > .05$). At average SOP and low, average and high SPP there was a significant moderating effect. However, at high SOP and low SPP there was not a significant moderating effect ($B = .01$, $t = .24$, $p > .05$). The moderating effect was also not significant at high SOP and average SPP. At high SOP and high SPP there was a significant moderating effect ($B = .07$, $t = 2.10$, $p < .05$) (see figure 5.2). The Johnson-Neyman technique identified a disempowering climate score of 2.83 (49.44% below, 50.59% above) as the respective transition between a significant and nonsignificant moderating effect of perfectionism on reduced accomplishment.

Figure 5.2 Interactive effects of SOP, SPP, and the perceived motivational climate on reduced accomplishment.
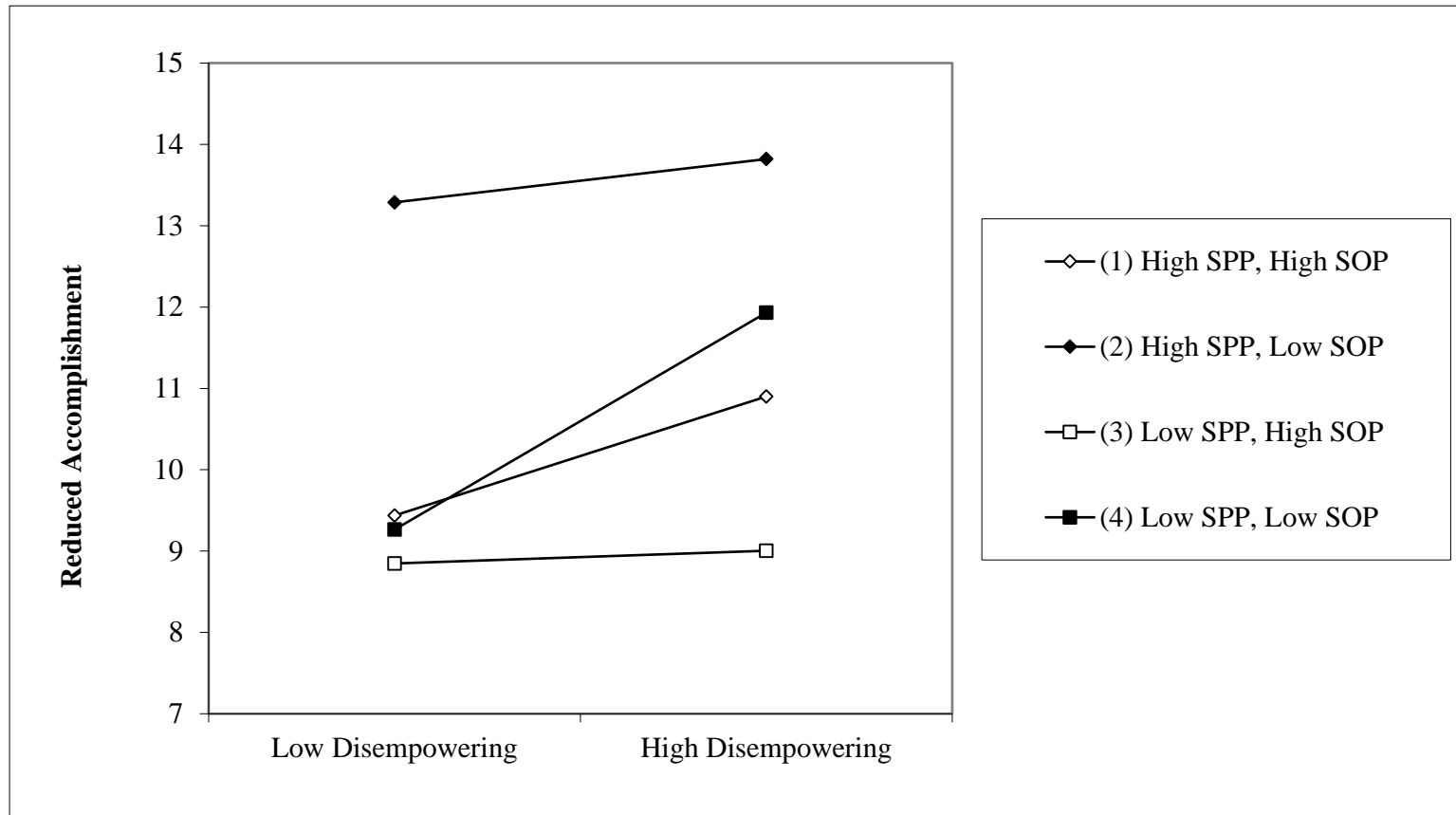
Figure 5.2. Simple slopes of the disempowering climate moderating the relationship between SOP, SPP and reduced accomplishment. For the purposes of depicting the combinations of perfectionism in this study the moderating variable is shown on the *x*-axis.

5.4 Discussion

The purpose of this study was to examine the relationships between perfectionism, the coach-created climate and ill-being, and the moderating role of the coach-created climate on the perfectionism – ill-being relationship in youth football players. In particular, the moderating role of the empowering and disempowering climate was investigated to determine whether the coach-created climate changes the strength or direction of the relationship between combinations of perfectionism, burnout symptoms and depressive symptoms.

In line with the first hypothesis, regression analyses indicated that SOP and empowering climate were associated with lower levels of ill-being, and SPP and disempowering climate was associated with higher levels of ill-being. In regards to moderation, the coach-created climate moderated combinations of perfectionism when predicting burnout symptoms. Specifically, a two-way interaction was identified between SOP and empowering climate when predicting devaluation. A three-way interaction was identified between SOP, SPP and disempowering climate when predicting reduced sense of accomplishment. The coach-created climate did not moderate the relationship between perfectionism and exhaustion or perfectionism and depressive symptoms in youth footballers. Thus, the findings offer partial support for the second hypothesis.

5.4.1 Perfectionism and burnout: The main effects models

In the main effects models, SOP was negatively associated with devaluation and reduced accomplishment as hypothesised. The findings are consistent with previous research that has demonstrated SOP has an inverse relationship with burnout symptoms in youth athletes including footballers (e.g., Hill et al., 2008). It has been suggested that SOP may offer resiliency or protection against the development of psychological

impairment such as burnout (Enns, Cox, & Clara, 2005). However, the protective effects of SOP did not extend to exhaustion. This finding is also consistent with other studies and the relationship between SOP and exhaustion may be more dependent on other factors such as one's motivational regulations (i.e., amotivation) (Appleton et al., 2009; Appleton, & Hill, 2012). Moreover, it is important to carefully consider whether SOP is protective against any burnout symptoms over time when taking into account the findings of study two.

As expected, SPP was positively associated with all burnout symptoms in line with the hypothesis. The findings are consistent with previous research that has found SPP to have a positive relationship with burnout symptoms in youth athletes including footballers (e.g., Appleton et al., 2009; Hill et al., 2008). It is suggested that individuals exhibiting high levels of SPP lack personal control over goal attainment and the evaluative tendencies of others can render individuals vulnerable to stress and subsequent burnout (Hill et al., 2008; Hill & Curran, 2016). Thus, this study contributes to a growing body of evidence that demonstrates that SPP is associated with psychological dysfunction. Further, this form of perfectionism may also be considered a risk factor of burnout given the findings of study two.

An empowering climate was negatively associated with all burnout symptoms. This finding was in line with the hypothesis and is consistent with previous research that has found an empowering climate to be inversely related to burnout symptoms (e.g., Bartholomew et al., 2011; Quested & Duda, 2011). Like SOP, an empowering climate appears to be protective at a cross-sectional level. It has been suggested that an empowering climate may also temper the effects of a disempowering climate to reduce burnout amongst athletes (Appleton & Duda, 2016). Thus, creating a climate which is caring, connected and encourages intrinsic goals and autonomous motivation in athletes may reduce the likelihood of athletes experiencing burnout (Duda, 2013).

A disempowering climate was positively associated with all burnout symptoms. Again, this finding supported the hypotheses and corresponds to previous research that has demonstrated a disempowering climate to be positively associated with burnout symptoms (e.g., Isoard-Gautheur et al., 2012; Lemyre et al., 2008). Athletes that perceive their climate to have less volition and choice, and feel controlled and even rejected by the coach may be at risk of burnout (Appleton & Duda, 2016). This is consistent with qualitative findings in which athletes perceiving pressure from the coach to win, high coach expectations, and low social support influences the development of burnout (Gould et al., 1996b; Gustafsson et al., 2008). To determine whether the coach-created climate is a risk factor of burnout, then, longitudinal evidence is required.

5.4.2 Perfectionism and burnout: The moderating roles of the coach-created climate

When examining moderation, findings revealed a two-way interaction between SOP, empowering climate and devaluation. Youth footballers exhibiting low/average SOP experienced a decrease in devaluation as empowering climate increased. Therefore this finding offers some support for the hypothesis that an empowering climate may have a buffering effect. However, an empowering climate appears to only be important for those with lower levels of SOP. This could be because an empowering climate positively impacts on one's motivation (i.e., decreases in amotivation and extrinsic motivation and increases in intrinsic motivation) leading to lower levels of devaluation (Cresswell & Eklund, 2005b). This may be especially pertinent given that athletes exhibiting high SOP have been found to have higher levels of intrinsic motivation and lower levels of extrinsic motivation and amotivation (Hill & Appleton, 2012).

Findings also revealed a three-way interaction between perfectionism, disempowering climate and reduced sense of accomplishment. Youth footballers exhibiting low perfectionism (low SOP and low SPP) experienced an increase in

reduced accomplishment as disempowering climate increased. Therefore providing support for the hypothesis that a disempowering climate may have an exacerbating effect on combinations of perfectionism. In a similar way to empowering climate moderating the low SOP and devaluation relationship, changes in one's motivation (e.g., amotivation) may also play a part in experiencing an increase in reduced accomplishment when perceiving a disempowering climate and exhibiting low levels of perfectionism (Cresswell & Eklund, 2005b; Harwood et al., 2015). It may also be likely that the perception of the climate can influence ones basic psychological needs impacting on psychological health. This relationship was demonstrated in a study by Balaguer et al. (2012) examining burnout in youth footballers. They found that youth footballer's basic psychological needs were thwarted when perceiving a disempowering climate and consequently this indicated a reduced sense of accomplishment.

Similarly, youth footballers exhibiting mixed perfectionism (high SOP and high SPP) experienced an increase in reduced accomplishment as a disempowering climate increased. Perhaps, irrespective of exhibiting low or mixed perfectionism, when one's psychological needs are thwarted this may exacerbate feelings of reduced accomplishment (Jowett, Hill, Hall, & Curran, 2016). However, this finding is interesting given that studies investigating the perfectionism and burnout relationship in athletes typically find that SOP is negatively associated with reduced accomplishment and SPP is positively associated with reduced accomplishment in athletes (e.g., Appleton et al., 2009; Hill et al., 2008). Thus, this combination of high SOP and high SPP indicates the importance of considering combinations of perfectionism. It is suggested that SOP may appear to be relatively innocuous until an athlete experiences adverse circumstances (Hall et al., 2012). In the presence of SPP, then, this suggestion may be particularly relevant as athletes are operating in a disempowering climate. In a disempowering climate, coaches may emphasise the importance of winning and indicate possible consequences for poor performances (e.g., deselection), thus athletes exhibiting

mixed perfectionism may perceive that they must consistently perform to a high standard to meet expectations. Consequently, these expectations are unrealistic and athletes may be prevented from feeling successful indicating a higher reduced sense of accomplishment (Gustafsson et al., 2008; Hewitt et al., 2017).

It is also important to note that the unique variance explained in the significant two-way and three-way interactions is small (1-2%). This was expected due to the complexity of three-way interaction effects and accounting for the variance explained by the main effects and two-way interactions. Moreover, the small unique variance found here is not limited to this study and is typically consistent with other findings in sport psychology that have examined interactive effects (Appleton & Duda, 2016; Ntoumanis & Appleton, 2016). Whilst the cross-sectional design may limit the influence of these interactions, it is suggested that overtime these interactions will become more meaningful when athletes are constantly exposed to these coach-created climates (Amorose & Anderson-Butcher, 2015; Appleton & Duda, 2016).

A disempowering climate did not moderate the perfectionism and devaluation relationship or the perfectionism and exhaustion relationship. In addition, an empowering climate did not moderate the perfectionism and reduced accomplishment relationship or the perfectionism and exhaustion relationship. Collectively these findings, alongside the significant moderating relationships, indicate that for youth footballers exhibiting high levels of perfectionism, a disempowering climate is more meaningful than an empowering climate when examining burnout. Thus, for an empowering climate to buffer the effects of the perfectionism and burnout relationship it may be important to take into account other aspects of the climate such as teammate relationships (i.e., team friendships; Chang et al., 2016). As well as considering the moderating relationships of the climate, there may also be other underpinning factors that moderate the perfectionism and burnout relationship such as coping. For example, those exhibiting higher SOP may have more adaptive coping tendencies buffering the

effects of burnout whereas those with high SPP may have more maladaptive coping tendencies exacerbating the effects of burnout (Hill et al., 2010).

The perceptions of the coach-created climate may also be more important in the development of some burnout symptoms rather than others. Neither an empowering or disempowering climate moderated the relationship between perfectionism and exhaustion. Previous research has also demonstrated that the coach-created climate and perfectionism is not always associated with exhaustion (e.g., Appleton & Hill, 2012; Reinboth & Duda, 2004). A possible reason for this finding may be because burnout is considered to be the result of an imbalance between demands and resources, and it is suggested that the demands (e.g., high workload) may be more salient for the development of exhaustion, whereas resources (e.g., social-environment and personality) may be more salient for the development of other burnout symptoms (Lee & Ashforth, 1996).

5.4.3 Perfectionism and depression: The main effects models

In the main effects models, SOP was negatively associated with depressive symptoms in the model that included disempowering climate as hypothesised. However, SOP was unrelated with depressive symptoms in the model that included empowering climate. These findings provide partial support for the hypothesis that SOP is negatively associated with depressive symptoms and are consistent with the bivariate correlations in study two. However, the disparity between the individual main effects models demonstrate the interesting relationship SOP has with depression. The discrepancy in the findings is similarly reflected in the current research in sport. Dimensions similar to SOP have found personal standards/self-expectations to be unrelated to depressive symptoms and self-criticism to be positively related to depressive symptoms (Shanmugam et al., 2012, 2013, 2014b; Stirling & Kerr, 2006). In addition, meta-analytic research outside of sport has also demonstrated a small positive relationship

between SOP and depression (Limburg et al., 2016), which is inconsistent with the current findings. Thus, the SOP and depression relationship requires further investigation in athletes.

In line with the first hypothesis, SPP was positively associated with depressive symptoms. The findings are consistent with previous research that has found dimensions similar to SPP to have a positive relationship with depressive symptoms in youth athletes (e.g., Nixdorf et al., 2016; Stirling & Kerr, 2009). Like burnout, this study contributes to a growing body of evidence that demonstrates that this form of perfectionism is associated with psychological dysfunction in athletes. Consequently, SPP may exacerbate depression and can be considered a risk factor (Smith et al., 2016). In addition, given the recent theoretical and empirical developments of the perfectionism and depression relationship (Bagby et al., 2008; McGrath et al., 2012), considering the reciprocal nature of this relationship is important for future research.

An empowering climate was negatively associated with depressive symptoms. This finding was in line with the hypothesis and is consistent with previous research that has found dimensions of an empowering climate to be inversely related to depressive symptoms (e.g., Bartholomew et al., 2011; Shanmugam et al., 2014b). In accordance with study one, little is currently known about the interpersonal relationships between athletes and their coaches and athlete depression. However, an empowering climate could have protective effects against depression in athletes. In meta-analytic research with participants from the general population, findings demonstrated the importance of having good support systems to reduce or even avoid experiencing depression (Gariepy, Honkaniemi, & Quesnel-Vallee, 2016).

A disempowering climate was positively associated with depressive symptoms. Again, this finding supported the hypothesis and corresponds with previous research that has demonstrated that dimensions of a disempowering climate are positively associated with depressive symptoms (e.g., Bartholomew et al., 2011; Shanmugam et

al., 2011, 2013). The findings align with qualitative findings which have found that athletes perceiving negative interpersonal behaviours from their coach such as shouting, isolation and humiliation were thought to lead to feeling depressed (Gervis & Dunn, 2004). Thus, like burnout, a disempowering climate may thwart an athlete's psychological needs and render athletes vulnerable to depression (Bartholomew et al., 2011). However, to advance our understanding of the relationship between disempowering climate and depression, longitudinal research is required as indicated in study one.

5.4.4 Perfectionism and depression: The moderating roles of the coach-created climate

There was no moderating effect of either an empowering climate or disempowering climate on the perfectionism and depression relationship. As such, the hypothesis was unsupported as the coach-created climate did not interact with perfectionism traits to predict depression. This runs counter to the findings of others studies who have found that interpersonal relationships, such as social support and low friendship intimacy, moderate the relationship between perfectionism and depression (Mackinnon et al., 2014; Zhou et al., 2013). However, it is important to highlight that the variables that others were tapping into measured different aspects of interpersonal relationships such as other sources of support (family, friends and significant others) and the nature of the relationships (i.e., intimacy). With this in mind, it may be important to take a more holistic perspective of the environment and consider other aspects of support such as peers and parents that may buffer or exacerbate the perfectionism and depression relationship.

Another possible reason could be that perfectionism and depressive symptoms may have a different theoretical relationship as indicated in study 2 (i.e., complication/scar relationship). It is also suggested that interpersonal interactions with

others may be more significant and impacted when the individual is already experiencing depression (Coyne, 1976). That is, depression may serve to deteriorate interactions with others rather than the converse. However, Hammen and Shih (2014) have suggested that based on the current empirical research, interpersonal relationships with others may have a reciprocal relationship with depression and serve as a predictor rather than a buffering factor. Regarding perfectionism, then, the coach-created climate may serve as a possible mediator. Although few studies have tested the mediational role of the coach-created motivational climate, there is support that it can function as a mediator (e.g., Magyar & Feltz, 2003). Similarly, negative social interactions and perceived social support have been found to mediate the relationship between perfectionism and depressive symptoms over a three year period (Dunkley, Sanislow, Grilo, & McGlashan, 2006).

Like the perfectionism and burnout relationship, it is evident that the relationship between perfectionism and depression is complex. However, it is generally accepted that perfectionists are prone to experiencing depressive symptoms because they possess a number of persistent maladaptive tendencies (Flett & Hewitt, 2002; Hewitt et al., 2017). With this in mind, investigating these maladaptive tendencies may provide further insight into the relationship between perfectionism and ill-being. Specifically, perceiving adversity (e.g., negative life events) and the appraisal of adversity (e.g., negative attributional style) has been acknowledged conceptually and empirically in both perfectionism and depression research (Beck & Bredemeier, 2016; Ingram, 2009; Hewitt & Flett, 2002; Hewitt et al., 2017). This may be a worthy area of further exploration in sport as athletes experience a number of life events such as injury and retirement that they must manage effectively.

5.5 Conclusion

The findings of this study demonstrate that perfectionism and the coach-created climate is associated with ill-being. The findings also suggest that the coach-created climate may be important for particular combinations of perfectionism when examining burnout symptoms in youth footballers. Specifically, an empowering climate buffered sport devaluation among youth footballers exhibiting low/average levels of SOP. In addition, a disempowering climate exacerbated reduced sense of accomplishment among youth footballers exhibiting mixed perfectionism (high SOP/ high SPP) and low perfectionism (low SOP/ low SPP). However, neither an empowering nor disempowering climate moderated any other combination of perfectionism when examining burnout symptoms. In addition, no evidence was found that the coach-created climate moderates the perfectionism and depressive symptoms relationship. Although the coach-created climate is important in the perfectionism – ill-being relationship, it is complex and alludes to wider influences.

Chapter 6 – Perfectionism in an imperfect world: A qualitative study of the perspectives and reflections of former professional footballers

6.1 Introduction

The findings from study two and study three suggest that the perfectionism – ill-being relationship is complex. In particular, there are intrapersonal and interpersonal differences in how perfectionism and its relationship with ill-being are experienced over time. In addition, the degree to which ill-being is experienced can be dependent on the interaction between perfectionism and the climate created by the coach. Although study two and study three provided support for the relationship between perfectionism and ill-being, the quantitative approaches taken in these studies are reductionist and cannot provide in-depth insight into what these relationships mean and why they are complex. This can be overcome by taking a qualitative approach. Through using qualitative methods, we can take a holistic view of perfectionism and consider the athlete's perception of their environment which may play a part in influencing their perfectionism. In addition, qualitative methods will allow us to explore perfectionism during critical periods of an athlete's career, which may reveal how they are vulnerable to ill-being. Thus, the purpose of this study is to explore former professional footballers' perceptions of being a perfectionist and how, in their view, it influences their lives during their career. First, the features and benefits of using qualitative inquiry and current research in perfectionism using qualitative methods are presented. This is followed by a theoretical and empirical overview of the interplay between perfectionism and the environment in football, and the introduction of the concept 'perfectionistic reactivity'. A rationale regarding the use of qualitative research methods to investigate three research questions is then provided. This chapter concludes with an exploration of

retired professional footballers reflecting on their career and experiences as self-identified perfectionists.

6.1.1 Qualitative inquiry

Qualitative inquiry enables the researcher to understand the social reality of others experiences. To achieve this, qualitative inquiry offers rich and varied strategies and methods such as interviews, ethnography, case studies and grounded theory (Sparkes & Smith, 2014). In using qualitative methods, the researcher is actively engaged in the data collection and analysis process "through careful looking, listening, recording, and contextualising peoples "real world" experiences, thoughts, actions, and reflections and going on to interpret them" (Henwood, 2014, p.1211). Specifically, qualitative methods allow us to explore the perspectives, cognitions, behaviours and experiences of individuals, groups and cultures. Thus, individuals are purposefully selected with whom researchers feel will provide information rich cases of the phenomena to be explored (Sparkes & Smith, 2014).

In this way, we can begin to understand how people make sense of their lives. This is articulated by Charmaz (2004) whom states "to appreciate what is happening in a setting, we need to know what it means to participants. Meanings render action and intention comprehensible" (p.981). Using qualitative inquiry can help us to understand how events and actions are shaped by the contexts in which they occur (Avis, 2005). This is achieved through listening to a participant's thoughts and beliefs in their own words (i.e., their subjective experiences), in effect giving the participant 'a voice' (Veltri, Lim, & Miller, 2014). Consequently, qualitative inquiry can illuminate how processes may lead to outcomes which cannot always be identified by experimental and survey research (Sparkes & Smith, 2014).

Reflexivity is also an integral part of qualitative research. That is, having awareness and consideration for the researcher's perspective, their epistemology, and

their role in the research that they are conducting (Veltri et al., 2014). Being reflexive requires critical self-reflection about our choice of topic, research question, paradigms, assumptions, rapport with participants and the analysis (Sparkes & Smith, 2014). Through adopting a reflexive stance this opens up unconscious biases and implicit motivations in one's approach (Finlay & Gough, 2003). As a result, there is an acceptance of the subjectivity of the researcher and the understanding that they can affect the ways research is conducted and how the findings are interpreted (Sparkes & Smith, 2014).

In the field of sport and exercise psychology qualitative research is growing in popularity. Between 2000 and 2009 it was reported that in three sport and exercise psychology journals there was a 68% increase in qualitative studies since a review that was previously conducted between 1990 and 1999 (Culver, Gilbert, & Sparkes, 2012). Qualitative inquiry can provide a greater understanding of phenomena in sport and exercise psychology which cannot be captured using questionnaires. For example, qualitative inquiry has provided useful insights into exploring psychological processes that are thought to occur as a result of one's situation or circumstances such as an athlete's cognitions, emotional and behavioural responses, and coping ability when encountering specific stressors (e.g., Hayward, Knight, & Mellalieu, 2017; Neil, Hanton, Mellalieu, & Fletcher, 2011). In addition, there is an increasing demand for qualitative research in commissioned evaluations to elicit positive change (i.e., creating impact) (Kay, 2016). For example, qualitative projects that have underlying aims to promote physical activity in children (e.g., Powell, Woodfield, & Nevill, 2015) and promote well-being and reduce ill-being through exercise (e.g., Faulkner & Biddle, 2004) have provided effective and valuable contributions. As a result, qualitative research is playing an important role in advancing knowledge and generating impactful research in sport and exercise psychology.

6.1.2 Qualitative research exploring perfectionism

Using qualitative inquiry offers a fruitful opportunity to explore the personality construct perfectionism. Particularly as this means that the researcher can be unconstrained by the theory and associated instruments, and the social context can be taken into account. When observing perfectionism research over the past 25 years, quantitative methods have been predominantly used to investigate perfectionism and its associations with other factors. However, there are a small number of studies that have utilised qualitative methods. These studies have sought to understand what perfectionism is in non-clinical populations, especially in light of the ongoing conceptual and measurement debates within the literature. In addition, there have been studies conducted to explore individual's perceptions and meaning of perfectionism in achievement domains, namely gifted students and athletes.

In the first qualitative study to explore perfectionism, Slaney and Ashby (1996) aimed to understand the conceptualisation and models of perfectionism that were proposed by theorists such as Hewitt and Flett (1991). They interviewed self-identified perfectionists (i.e., self-chosen or referred by others) and found that high standards of achievement, procrastination and order were features of perfectionism. In particular, perfectionism affected their work and academic life. There was also a discrepancy between participants feeling positive about perfectionism and experiencing distress. Similar findings were identified in a second study by Slaney, Chadha, Mobley, and Kennedy (2000). They used the same line of enquiry (self-identified perfectionists and same interview format) and sought to explore the features and meanings of perfectionism in Asian Indian culture. Regarding the findings, the main difference of this study was that there was less emphasis on procrastination and the origins of perfectionism.

Rice, Bair, Castro, Cohen, and Hood (2003) also aimed to explore the meaning of perfectionism. However, they took a different approach and interviewed participants based on their scores on a perfectionism measures. Participants were categorised into 'adaptive perfectionists', 'maladaptive perfectionists' or 'non-perfectionists'. The overall meaning of perfectionism was encompassed by the desire to perform well, high standards and experiencing distress. In terms of group differences, adaptive perfectionists had high standards and were highly organised. This was observed in maladaptive perfectionists but they had greater concerns over mistakes, self-doubt and perceived greater expectations and pressure from parents.

Farmer, Mackinnon and Dalhousie (2017) also used cut off points on perfectionism measures to identify 'adaptive perfectionists' and 'maladaptive perfectionists'. They aimed to explore how perfectionists narrate their lives. High standards and organisation/neatness were commonly discussed as noted in other studies. They also identified low satisfaction and high standards of others. Adaptive perfectionists were more positive and optimistic with strong social support. Maladaptive perfectionists were more pessimistic, discussed their struggles in life and were less likely to seek support. In a study examining gifted adolescents, Schuler (2000) also categorised participants and referred to 'normal perfectionists' and 'neurotic perfectionists'. They explored gifted adolescents meaning of perfectionism and there were parallels with others findings regarding the distinct types of perfectionist. Normal perfectionists emphasised order and organisation to achieve their personal best and had a positive support system (i.e., parents and teachers). Conversely, neurotic perfectionists emphasised concerns over making mistakes and felt that they had a more negative support system.

Since Schuler's (2000) study, Speirs Neumeister and colleagues have conducted a series of qualitative studies examining the development of perfectionism in gifted students (2004a, 2004b, 2004c; Speirs Neumeister, Williams, & Cross, 2007, 2009). In

their studies quantitative methods were also used to screen participants high in SOP and high in SPP prior to interviewing them. For students high in SOP, perfectionism was thought to develop as a result of a lack of challenge or failure, early success, modelling parents' perfectionistic behaviour and receiving support from others. They tended to discuss more adaptive attributional approaches when perceiving success and failure (i.e., able to keep perspective) and discussed setting more mastery goals, although this was not always the case in their other studies. For students high in SPP, perfectionism was thought to develop as a result of early success, expectations to achieve from others and the fear of disappointing others (i.e., harsh evaluation and consequences). They tended to discuss more maladaptive attributional approaches when perceiving success and failure, and their underlying motivation was to avoid failure.

6.1.3 Qualitative research exploring perfectionism in sport

The studies exploring perfectionism in gifted students have been especially interesting in understanding the interplay between the individual and their context. Specifically, how perfectionism is thought to manifest in relation to their specific circumstances. Exploring perfectionism in athletes affords this opportunity to understand how perfectionism may influence their lives in this competitive achievement domain. At present, three studies have used qualitative inquiry to explore perfectionism in athletes (Gotwals &Spencer-Cavaliere, 2014; Hill, Witcher, Gotwals, & Leyland, 2015; Sellars, Evans, & Thomas, 2016).

Gotwals and Spencer-Cavaliere (2014) were the first to use qualitative methods to explore perfectionistic athletes' perspectives on achievement. Like the aforementioned studies quantitative methods were also used to screen participants. Eighteen student athletes were selected to interview based on their questionnaire responses on a sport-specific perfectionism instrument. Gotwals and Spencer-Cavaliere identified 'healthy perfectionists' and 'unhealthy perfectionists' and aimed to bring

clarity and understanding to these two distinctions of perfectionism and explore domain-specificity in perfectionism. They identified three overarching themes for healthy and unhealthy perfectionists: personal expectations, coping with challenge and role of others. Athletes considered to be healthy perfectionists were thought to have reasonable goals/expectations, a positive outlook and a quick recovery from setbacks. Athletes considered to be unhealthy perfectionists were thought to have unrealistic/negative expectations, were highly self-critical, focused on winning and had difficulty recovering from setbacks. The role of coaches, teammates and parents were thought to be important to both healthy and unhealthy perfectionists, although some unhealthy perfectionists viewed their relationships with coaches and teammates negatively.

Sellars et al. (2016) also selected participants to interview based on their perfectionism scores on questionnaires. However, they aimed to investigate participants only classified as 'maladaptive perfectionists'. The purpose of their study was to explore 10 elite athletes' experiences of perfectionism in sport and how this personality characteristic was thought to affect their sporting experiences. Their findings reflected the higher order dimensions PS and PC. Participants discussed having high personal standards to attain perfection in performance and organisation around feeling prepared for performance. Participants also discussed having self-critical tendencies, dissatisfaction with goal progress, concern over mistakes characterised by a fear of failure and making future mistakes, doubts about their actions, overthinking before/during performances, and perceiving external pressure from others such as parents, competitors and teammates. Perfectionism was thought to be more prominent in certain situational contexts (i.e., higher perfectionistic tendencies in competition than training) and participants expressed that they used a variety of coping skills and strategies to manage perfectionism.

Hill et al. (2015) took a different approach to the other two studies. In line with Slaney and colleagues' (1996, 2000) approach, it was thought that self-identification

would allow participants to talk freely about their perceptions of perfectionism rather than constraining them to models and types of perfectionism based on their quantitative scores. Thus, they recruited 15 international/professional athletes, dancers and musicians that self-identified as being perfectionists. Participants discussed that they had high standards and focused on continuous improvement (drive). Being a perfectionist was also thought to be important for achievement (accomplishment), however, participants also recognised the constant pressure to continually improve (strain). Perfectionists appeared to be characterised by high levels of motivation, obsessiveness, meticulousness and chronic dissatisfaction. Perfectionism was thought to contribute to sources of distress to varying degrees such as anxiety, anger and lack of sleep in response to imperfection. The perfectionistic tendencies of participants were also thought to adversely affect relationships with others (i.e., family and friends) and prioritising their goals of attainment also appeared to negatively influence other areas of their life (i.e., sacrifice).

6.1.4 The interplay between multidimensional perfectionism and the environment

In these qualitative studies, participants predominantly discussed intrapersonal aspects of perfectionism (i.e., their perfectionistic tendencies) but they also alluded to the role of others indicating that interpersonal aspects of perfectionism are evident. Specifically, athletes perceived that they felt the pressure to perform to avoid being chastised, especially athletes that were classified as unhealthy perfectionists. Athletes also discussed that they felt they must perform to their best as to not let their parents, teammates or coaches down (Gotwals & Spencer-Cavaliere, 2014; Sellars et al., 2016). Thus, the way athletes perceive how others view them appears to play an important part in how perfectionism is experienced as there is a dependency on others for approval and affirmation (Hewitt et al., 2017). These findings provide support for multidimensional

perfectionism as described in the CMPB. Given that SPP is an important part of the CMPB, then, exploring the interpersonal aspect of perfectionism in more depth may help to understand the influence it has, particularly as SPP is consistently associated with ill-being.

The findings from study two demonstrate these positive associations between SPP and ill-being (i.e., burnout symptoms and depressive symptoms) over time in youth footballers. However, the relationship between SOP and ill-being was more ambiguous. These differences between SOP and SPP and their relationship with ill-being similarly correspond with other meta-analytical findings in and outside of the sport domain (e.g., Hill & Curran, 2016; Limburg et al., 2016). However, through using reductionist quantitative methods it is not fully understood why these differences between SOP, SPP and ill-being occur. It is suggested that individuals who are high in SPP have less autonomy, independence, coping abilities, and lower self-worth which may put them at risk of ill-being (Hewitt et al., 2017). Consequently, further investigation is required to understand the interpersonal and intrapersonal aspects of perfectionism.

Differences between SOP and SPP were also observed in study three. In this study, the moderating role of the coach-created climate was examined in relation to combinations of SOP and SPP on burnout symptoms and depressive symptoms. Of particular note in study three was the finding regarding mixed perfectionism (high SOP and high SPP), whereby a disempowering climate exacerbated reduced sense of accomplishment in youth footballers exhibiting mixed perfectionism. This finding demonstrates that the combination of interpersonal and intrapersonal dimensions of perfectionism can be debilitating depending on the perceived climate. These findings along with others have demonstrated that perfectionism shares a unique relationship with the climate, depending on whether it is perceived as empowering or disempowering (e.g., Barcza-Renner et al., 2016; Nordin-Bates et al., 2014) and can predispose athletes to ill-being (e.g., Gustaffson et al., 2008; Lemyre et al., 2008). Thus,

there is an opportunity to explicitly explore the interplay between perfectionism and the environment athletes are operating in.

The professional football environment may provide a compelling context to investigate the experiences of perfectionism using qualitative inquiry. This is because the professional football environment is highly competitive. Roderick and Schumacker (2016) have highlighted how the insecure conditions of this workplace promote rivalry among teammates where players hope to be selected on a weekly basis and secure fixed-term contracts. It is estimated that up to 35% of professional players move clubs each season to find work. Thus, sustaining professional status is contingent on performing well (Roderick & Schumacker, 2016). Managers must preserve their reputation to sustain their careers which is reliant on their players' performances and this means that players can be under continuous pressure to perform or they may face rejection (Roderick, 2006). Consequently, this environment may deliberately or inadvertently promote a disempowering climate. With this is mind, investigating perfectionism in achievements domains such as football may help us understand the interplay between multidimensional perfectionism and the environment.

6.1.5 Perfectionism and responsiveness to times of challenge and adversity

To gain further insight into perfectionism it may also be important to consider an individual's circumstances. It is suggested that perfectionism may appear to be relatively harmless until an athlete encounters adverse conditions such as performance failure, injury, deselection or career termination (Hall, 2016; Flett & Hewitt, 2005, 2014). In chapter three, the diathesis-stress model was discussed as a possible explanation for why perfectionists may be vulnerable to ill-being (Flett & Hewitt, 2002). That is, perfectionists have a tendency to appraise events negatively and have an ability to make events stressful through their behaviour and attitude. Flett and Hewitt

(2016) have recently extended the diathesis-stress model of perfectionism by introducing perfectionistic reactivity.

Perfectionistic reactivity is defined as a tendency to negatively respond and react to adversity (Flett & Hewitt, 2016). The two stress mechanisms that are particularly relevant to perfectionistic reactivity are stress perpetuation (maladaptive tendencies that maintain and prolong stress) and stress enhancement (self-defeating styles of cognitive appraisal that magnify stress). Athletes under pressure to be perfect may be particularly susceptible in situations where things are not going perfectly and they perceive their goals are no longer attainable. As it is a relatively new theoretical development in perfectionism, little research has been conducted to identify how perfectionism may interact with specific components of stress reactivity. Currently, one quantitative study has found that prolonged stress reactivity and reactivity to social evaluation mediated the relationship between perfectionism and depressive symptoms in students (Flett, Nepon, Hewitt, & Fitzgerald, 2016).

Flett and Hewitt (2016) have suggested that perfectionistic reactivity will be especially high for athletes experiencing failures, making mistakes or role transitioning. Consequently, perfectionistic reactivity may lead to affective reactions (e.g., shame, dissatisfaction, and anger), behavioural reactions (e.g., compulsive over-striving, avoidance, lack of self-care) and cognitive reactions (e.g., rumination about making mistakes, poor performances and social comparison) (Flett & Hewitt, 2016). Although perfectionistic reactivity has not been explicitly explored using qualitative inquiry, reactions such as chronic dissatisfaction and obsessive overthinking were captured in Hill et al.'s (2015) study with athletes. With this in mind, exploring perfectionistic reactivity may provide insight into this personality characteristic and how vulnerability to ill-being may manifest during times of adversity.

6.1.6 Rationale for this study

Using qualitative methods will enable us to illuminate the nature and experience of perfectionism. Hall (2016) stated that in the absence of a suitable quantitative paradigm, we must utilise mixed methodologies that can depict the nature and sequence of psychological processes that occur, particularly during critical times where perfectionism may be most evident. This suggests that using qualitative methods will be valuable in contributing to our understanding of this personality characteristic. It can provide us with a detailed insight into athletes' individual perceptions of this multidimensional personality characteristic and how it may influence their lives. In particular, the lives of athletes who are operating in highly competitive achievement domains, such as professional football, where perfection is desirable and often expected.

Qualitative inquiry also allows us to understand how actions are shaped by the context in which they occur. In this way, we can take a holistic view to discover how individuals interpret their context and explore how events may influence perfectionistic tendencies. Specifically, researchers have identified that perfectionism is a vulnerability factor to ill-being such as burnout. Yet it is difficult to establish the nature and complexity of this relationship using reductionist quantitative methods. Thus, qualitative methods can enhance our understanding of this relationship and take into account one's circumstances through discussing their experiences in relation to their thoughts and beliefs.

Based on the preceding overview, this study firstly aims to explore footballer's perceptions of perfectionism. It is important to understand how participants conceptualise perfectionism and what it means to be a perfectionist. Of the three qualitative studies that have investigated perceptions of perfectionism in athletes, two of those examined perfectionism based on whether athletes scored highly as a 'healthy' or 'unhealthy' perfectionist (Gotwals & Spencer-Cavaliere, 2014; Sellers et al., 2016),

irrespective of whether the participants are in agreement with these types. Consequently, it is unclear how well these labels represent their lives and their experiences of perfectionism. Therefore, an approach where participants self-identify as a perfectionist is unrestrained from labels. In using this approach previously, Hill and colleagues (2015) have suggested that others adopt self-identification to identify discrepancies or authenticate their findings regarding athletes' perceptions of perfectionism.

Secondly, this study aims to explore the interplay between perfectionism and the environment. The way athletes perceive their environment and their relationships with others appears to play an important role in how perfectionism is experienced. From a theoretical perspective there are both interpersonal and intrapersonal aspects of perfectionism to consider and quantitative research has indicated that there are differences between the two. SPP is consistently associated with ill-being whereas this relationship is more ambiguous for SOP, as evidenced in study two and study three. In addition, the unique relationships between dimensions of perfectionism, the coach-created climate and ill-being are also evidenced in study three. At present, there is no empirical research in sport that has sought to specifically investigate the interplay between perfectionism and the environment using qualitative methods. Given that the professional football environment is highly competitive and one's career is contingent on consistently performing well, this environment may provide a compelling insight into how and when perfectionism may be experienced.

Whilst the first two aims of this study explore the multidimensional nature of perfectionism, the final aim of this study is to explore perfectionistic reactivity. That is, how perfectionistic footballers respond to their circumstances, particularly during times of adversity such as performance failures, injury and career termination. It is suggested that although perfectionism may appear to be energising and lead to positive outcomes, when experiencing adverse conditions perfectionistic athletes may be vulnerable to ill-being because of their maladaptive cognitions and behaviour (Hall, 2016; Flett &

Hewitt, 2005, 2014). At present, little is known about how perfectionistic individuals might respond to difficult situations, challenges and setbacks in meaningful domains. Thus, using qualitative inquiry will allow us to explore how perfectionistic footballers appraise their circumstances.

6.1.7 The purpose of study four

The purpose of this study was to employ qualitative methods to explore former professional footballers' perceptions of perfectionism and how, in their view, perfectionism has influenced their lives. In particular, this study explored former professional footballers' perspectives and reflections on: (a) being a perfectionist during their career, (b) how the football environment influenced their perfectionistic tendencies and (c) experiencing perfectionistic responses, particularly during times of challenge and adversity.

6.2 Method

6.2.1 Philosophical assumptions

Before describing the methodology for this study, it is important to firstly clarify the underpinning philosophical assumptions of this thesis. This is because the studies in the thesis include both quantitative and qualitative approaches to investigate perfectionism. Therefore, the general framework that was adopted for this thesis was pragmatism (Cresswell & Plano Clark, 2011). Pragmatism is an attempt to focus on the practicality of conducting research to understand the consequences and relevancy the findings have on the human condition (James, 1907; Rorty, 1990). As practicality is central to pragmatism, the research question is of primary importance above either the method or philosophical worldview (Cresswell & Plano Clark, 2011). Therefore, pragmatism values different types of knowledge to answer specific practical research questions which will inform our understanding of the environment (Rorty, 1982).

Pragmatism has been acknowledged as a suitable framework in sport psychology. In a seminal paper by Martens (1987), he recognised the diverging, rather than converging, field of academia and practice in sport psychology. Historically, psychology has favoured a predominantly positivistic perspective accompanied by quantitative methods which contrasted his practical psychology work in sport. Consequently, investing in one paradigm may mean that one is "unable to see alternatives by removing the spectacles through which they view the world" (Martens, 1987, pg.36). Giacobbi, Poczwardowski and Hager (2011) have also suggested that pragmatism is an appropriate philosophical approach for researchers in sport psychology to advance the field. They contend that using both qualitative and quantitative methods can enable researchers to answer important questions more adequately.

Within the pragmatic framework, this thesis is underpinned by multiple paradigms that relate to the type of design that is used. Using qualitative or quantitative methods is dependent on the research question posed. Quantitative methods are typically underpinned by postpositivism (i.e., objective, researcher independent of method and findings and use instruments to examine variables; Gratton & Jones, 2010) and qualitative methods can be underpinned by interpretivism (i.e., subjective, researcher is part of the methodology and findings, and take into account complexity of phenomena; Gratton & Jones). The two world views are not thought to be solely dichotomous and instead there can be a continuum between the two (Cresswell, 2013). With this is mind, pragmatists do not aspire to uncover truths but they do accept a degree of objectivity within the scientific field which is inherent in the practicality of conducting research (Maxcy, 2003; Tashakkori & Teddlie, 2010).

6.2.2 Methodology and theoretical underpinnings

This study was underpinned by an interpretivist perspective. Interpretivism recognises that an individual's realities are based on their own interpretations. Further, this approach recognises that these interpretations are influenced by perceptions, experiences, personality and interactions with the environment (Sparkes & Smith, 2014). As such, it was considered important to gain a detailed insight into the participants' individual experiences of perfectionism within professional football. To do this, an interpretive description methodology was chosen (Thorne, 2016). Interpretive description enables the researcher to ask real-world questions, acknowledges what we do and do not know on the basis of current empirical evidence and recognises the conceptual and contextual domain of the target audience. By using this methodology, it was important to explore meaning beyond just participants' description of perfectionism. Rather it would enable us to begin to access and interpret the more complex processes of perfectionism (Hall, 2016).

6.2.3 Participants and recruitment

Participants were purposefully sampled based on the following criteria: (a) former male professional footballers in the UK and (b) they considered themselves to be perfectionistic during their football career (i.e., self-label as a perfectionist). Retired professional footballers were chosen as they may be better able to reflect openly on their career and are comfortable doing so when recounting on sensitive issues (Elmir, Schmied, Jackson, & Wilkes, 2011). Participant self-identification is a sampling strategy modelled in previous perfectionism research (e.g., Hill et al., 2015; Slaney et al., 2000). By using this approach to sampling no definition, approach or measure is imposed pre-interview. Regarding the sampling strategy, participants were recruited either through direct communication (email or private message) or contact was made

through snowball sampling whereby current participants, organisations and gatekeepers recommend potential participants for the study.

In total, 12 male retired professional footballers participated in this study (*M* age = 38.08, *SD* = 7.66). All participants had played in the English football league system. The football league system comprises of hierarchical interconnected leagues for men's association football in England. At the top of this system is the premier league (premiership). Below the premier league is the English football league which is divided into three divisions: the championship, league one and league two. At their highest performance level, six participants had played in the Premiership, two had played in the Championship, three had played in League 1, and one had played in League 2. Participants' career length was, on average, 13 years (*SD* = 5.12) with a mean retirement age of 30 (*SD* = 5.08).

6.2.4 Procedure

Following ethical approval from the University Ethics Committee (see appendix A.2), participants were recruited either through direct communication (email or private message) or contact was initially made through current participants, organisations or gatekeepers who recommended potential participants. Prior to arranging interviews, verbal and written information about the study was provided to all those involved. A suitable date and time was mutually agreed via telephone or email at a location in close travelling distance for participants who wished to take part. The choice of location was based on both parties agreeing on a safe, suitable and appropriate private space (Paterson, Gregory, & Thorne, 1999).

6.2.4.1 Data collection

Face to face interviews were conducted with all participants in a mutually agreed location. Before the interview, participants were provided with a written explanation of the study and informed that their participation was voluntary (see

appendix B.5). It was important to emphasise the importance of anonymity and participants were provided with an opportunity to ask any questions about the study before completing an informed consent form (see appendix B.6). A semi-structured interview guide was used, which included pre-planned questions that were identical for each participant. This allowed the participants a degree of flexibility to expand on their experiences, feelings and attitudes (Sparkes & Smith, 2014). All interviews were audio recorded and on average lasted 85.75 minutes ($SD = 21.81$). The interview guide was initially piloted with two participants, which subsequently led to small changes made to the wording of some questions for clarity.

The interview guide consisted of four sections: (1) Introductory questions on the participant's football career (e.g., Tell me about how you became interested in football?). (2) Participants' conceptualisation of perfectionism (e.g., Can you describe the features that made you consider yourself a perfectionist?). These questions were adapted from other qualitative studies on perfectionism (e.g., Ashby et al., 2012; Hill et al., 2015; Slaney et al., 2000). (3) The impact of being a perfectionist in the football environment (e.g., what influence did being a perfectionist have, if any, on you during your career as a footballer?). (4) The influence of perfectionism when dealing with challenges, setbacks, and times of stress during their football career (e.g., what role, if any, did being a perfectionist play in terms of the stress you experienced?). In this final section of the interview, studies that had identified football specific stressors (e.g., injuries, relationships with the coach, training/competition load) were used as prompts to facilitate discussion around times of stress, difficulties and setbacks (e.g., Reeves, Nicholls, & McKenna, 2009; Tabei et al., 2012). At the end of the interview participants were offered an opportunity to add anything they felt was relevant to the interview that had not been discussed (see appendix C.7). Participants were then given a debrief sheet at the end of the interview (see appendix B.7).

6.2.4.2 Data analysis

Interviews were transcribed verbatim. Participants were sent their transcripts with the opportunity to review them to identify any miscommunication, mistakes and to ensure they accurately reflected their thoughts and experiences. Thereafter, an interpretive thematic analysis was conducted (Braun & Clarke, 2006; Braun, Clarke, & Weate, 2016). Thematic analysis was considered to be an appropriate method in line with interpretive description and an interpretivist paradigm. The aim of the thematic analysis was to better understand athlete behaviour pertaining to perfectionism from a subjective perspective and free of quantifying themes (Thorpe & Olive, 2016). Further, by using this analysis we could highlight similarities and differences across the data, and summarise the key features of a large body of data (Sparkes & Smith, 2014).

In the initial phase, audio files were reviewed and all transcripts were re-read to become familiar and immersed within the data prior to coding. Interview transcripts were manually coded to identify patterned aspects in data items which may potentially form themes (e.g., sifting through each transcript, pencilling in initial thoughts on relevant quotes and questioning the self to facilitate engagement). When all data was coded, this led to the sorting of codes and considering how these codes fit into themes through intensive, continuous discussion and mind-mapping. This process was recursive and an external adviser with expertise in qualitative methods helped to guide the process of developing themes by challenging any assumptions and enabling reflection (e.g., revisiting transcripts and the mind-maps that were created). This led to modifying and refining of the final themes and sub-themes.

6.2.5 Methodological rigour

To enhance methodological rigour, steps were undertaken to establish trustworthiness of data quality (Sparkes & Smith, 2014). To establish trustworthiness, Thorne's (2016) quality considerations (epistemological integrity, representative

credibility, analytic logic and interpretive authority) were followed. Epistemological integrity was of great importance and this was delineated through adhering to interpretivist assumptions (e.g., illuminating the nature of the experience of perfectionism). To enhance representative credibility, prolonged engagement in the phenomenon (i.e., perfectionism in athletes) was thought to be beneficial as it provides assurance of the devoted interest in this phenomenon.

To enhance analytic logic, methodological coherence developed through continual discussion with members of the supervisory team to improve the methodology (i.e., research question, method and analytic procedures). Under the interpretive description methodology, it was important to create research questions that were meaningful and aligned with the methodological tools with which they will be answered (Thorne, 2016). Participants were interviewed if they expressed that they fit the recruitment criteria and had a genuine interest in the research, which led to a saturation end point. The decision making process was documented throughout this study and the supervisory team served as critical friends, and were valuable in the development and refinement of this study (Patton, 2014).

To enhance interpretive authority, being responsive throughout the study design, data collection and analysis was a fundamental part of the process. In addition, engaging and immersing the self into understanding the context and experiences of participants was also of great importance. This was thought to help the process of working inductively and moving freely through the transcripts, as opposed to overly adhering to strict instruction. Throughout the interviews a reflexive journal was kept to write down initial ideas, focus on internal responses such as building rapport with participants and challenge any assumptions (Vannini, Waskul, & Gottschalk, 2012). During the analysis, an external advisor served as a critical friend and facilitated the interpretative thematic analysis process to enhance interpretive authority.

6.3 Results

This section is organised to correspond with the overarching research questions. Two themes were identified for footballers' perceptions of being a perfectionist: 'Placing mentally and physically demanding standards on the self' and 'reinforcement of unrealistic standards through self-evaluation'. Two themes were identified when exploring how the environment influenced footballers' perfectionistic tendencies: 'Acute awareness of expectations and scrutiny from others' and 'the pursuit of job security in uncertainty'. Three themes were identified for player's perfectionistic responses: 'Day-to-day perfectionistic responses', 'perfectionistic responses during acute periods of adversity' and 'cumulative psychological responses of perfectionism'. Pseudonyms are used throughout to protect the identity of the participants.

6.3.1 Perceptions of being a perfectionist

Participants cognitively imposed unrealistic expectations on themselves which appeared to translate into their behaviour of physically exerting their body to perform and prove their worth. In addition, participants continuously strengthened their own standards based on their evaluation of how they had performed. This was an unrelenting process and if participants felt that they did not meet their standards, for example by making a mistake, participants would engage in self-criticism.

6.3.1.1 Placing physically and mentally demanding standards on the self

Participants set exceedingly high standards for themselves. Dale said, "Nobody placed higher expectations than myself, so no matter what that player was thinking, or the manager was thinking or the fans were thinking, their expectations wouldn't have been as high as mine". These standards led to players pushing themselves physically harder to stand out. Ryan explained:

How I felt being that perfectionist was physically I had to get through that

workload. I had to work harder than my opposite number. I had to run further. I

had to win more tackles than him… I had to put my body on the line. The

physical demands you put on yourself is massive.

By setting these high standards participants perceived they could obtain/retain

their position as Lee said, "I like [this club] and I don't want to leave so I've got to work

even harder and you put more pressure on yourself". Daniel also expressed the

demanding nature of his standards and his need to prove his self-worth when he

returned from injury. He said:

I'd been injured so I had to do more. Sometimes less is more and that was the bit

I couldn't get my head around. If the [other] goalkeeper does 10 volleys I

wanted to do 11. I wanted to do more than him. I believed that if I do more that

would get me in [the team].

Participants also recognised that the standards they put on themselves were often

unrealistic. Ryan explained:

I expected myself to be the best player on the pitch. I expected to go out and win

it. I expected to score every game and when I look back now the realistic aims

and objectives and stresses I put on myself…they were totally unrealistic that I

put on myself.

6.3.1.2 Reinforcement of unrealistic standards through self-evaluation

The unrealistic standards participants placed on themselves would often be

relentless and constantly adapted to loftier goals, which were never self-evaluated as

acceptable. Lee articulated:

The bar was always up there all the time. The bar never came down here. I never

accepted that 'oh I played well today'…if I had done a good performance so if I

had reached it I would just knock the bar up again. So I would never win. I was

playing a game I would never win.

This cycle of demanding standards on the self was often underpinned by self-critical

appraisal. Jason explained, "I think I had unrealistic expectations...I'd have high

standards, probably would be quite self-critical". Such self-critique would reinforce the

pursuit of meeting their unrealistic standards, as Ryan shared:

I've got man of the match. I've scored two goals. I've set up two but there was

always that…this part of the game I should've done better or I've lapsed

concentration in that little bit … yes I was pleased that I'd done things well,

pleased that I'd scored, pleased that we'd won the game… but there was still

bits where I'd made mistakes… I'd maybe given the ball away a little bit too

easy and that stuck in my mind of what I was doing. I can't settle for that

because I know that I will never become perfect at it but if I strive for perfection

then I'll be the best I possibly can. I was just always pushing myself but then

like I said earlier on the flipside of it I used to sometimes be over critical of

myself.

By engaging in the repetitive behaviour of placing physically and mentally demanding

standards on the self and then self-evaluating, participants felt that this would reduce the

likelihood of performing below their expectations. Jason explained:

I think if anything being a perfectionist enabled me to make….so the margin of

error was smaller. I think if I didn't focus so much, if I didn't train as hard, if I

didn't self-evaluate and be quite critical of myself a lot…as a kid I was loose. I

was technically loose so I tightened up through repetition of perfection

behaviour I guess.

In summary, perfectionism appeared to be a cycle of engaging in this process of

placing demanding unrealistic standards on the self, self-evaluating and critiquing their

own performance and continuously resetting their goals to prove their worth and ultimately attempt to maintain a career in football.

6.3.2 The environment influencing perfectionistic tendencies

Participants discussed how stakeholders (e.g., manager, fans and the media) had expectations on them to consistently perform and they were then scrutinised based on whether they had met others expectations for performance. This exacerbated their perfectionistic tendencies to ensure they met others standards and scrutiny was avoided. Participants also discussed the challenge of trying to sustain their position in a highly competitive and unpredictable environment through ensuring they were doing everything perfectly and not letting their standards drop.

6.3.2.1 Acute awareness of expectations and scrutiny from others

As well as participants' reporting their self-criticism, they also recognised that the environment promoted their perfectionism. Cameron explained the difficulty of being in such an environment:

That was one element [his perfectionist personality] and the second was at [club] which was a huge part of my formative years that was so critical and such a perfectionist environment the two just clashed all the time. So I had it from myself and I had it from the culture as oppose to one or the other, which might have made it slightly more manageable.

Specifically, in describing the environment, participants discussed a process of constant scrutiny of their performance. Cameron continued, "You are under constant scrutiny which is perhaps difficult for people to understand…it's a bit of a…like an exam every couple of days against… directly against someone who is equally as good as you". Such scrutiny was magnified due to the media, as Tom said, "You always feel like you're sort of being assessed because you're in the limelight". Participants' perceived that if they held perfectionistic standards it would help them avoid negative

evaluations from others. For instance, Peter said, "I found it important to make sure I did everything I could to the best on my ability so that those [fans] comments were reduced". Jason, meanwhile, tried to avoid the negative evaluations from his teammates by working hard:

> As a perfectionist you are looking at it and you're looking at ways to not be at the forefront of the bullying, of the micky taking. That could be how well you train. So sometimes the best micky takers were the worst footballers because that was their defence was to take the piss out of somebody else…. 'You're a shit footballer'. It's hard when you're all in the same environment and of course some are better than others. So I would address that, I would try and avoid that by working really really hard.

6.3.2.2 The pursuit of job security in uncertainty

Participants were aware that their performance was meaningful to many people such as the chairman, manager, teammates, and fans. The stakes were high and Daniel, a former goalkeeper, said, "When you are out in front of 30,000 there is no hiding place when you let in a bad goal and it is peoples' careers, mortgages, everything on the line". Ultimately, perfectionism was important for these players to ensure their position at the club was not under threat. Craig explained:

> You always feel under threat so…and that's where perfectionism comes back in because you're always under threat that if you don't perform. You know you take it as…there's a game on a Saturday…if you don't perform on a Saturday chances are you won't play on a Tuesday and then you can extend that to if you don't perform over a period you won't get a new contract and then you're out. So there is that fear that you won't then be a footballer eventually.

> In such a competitive environment, participants perceived it was important to place demanding standards on themselves and ensure their standards did not drop

because they were aware that many other players could readily take their place. James said:

> [You] constantly want to do everything right, do everything right, do everything
>
> right because you feel if you don't someone else will be and you get told that by
>
> coaches…there's hundreds of people wanting your spot so if you let your
>
> standards drop one of them will get it. And that's from 10 years old you get told
>
> that, so you're getting instilled into you that you have to be the best, you have to
>
> be perfect cause if you're not there will be someone else that is.

Participants believed that having perfectionistic standards helped them to achieve what they had in their careers as it provided an element of control. Tom said, "I always worked hard. I always trained hard and I always tried to give myself the best chance I could that was in my control, and as a result I think that was a big reason why I went on and did well". John similarly said, "[perfectionism] kept me in a job because of my work ethic". However, due to the uncertain nature of the environment it was not easy for participants to ascertain what constituted an acceptable performance. Cameron explained:

> The environment is certainly ruthless and subjective I think. What you think is
>
> perfect someone else doesn't think is perfect…where do you set your marker
>
> you know?

> In summary, participants were acutely aware of the explicit nature of

evaluations from others and consequently participants thought it was important to be perfectionistic to meet others expectations. Additionally, participants attempted to create a sense of security in their jobs by continually placing these demanding standards on themselves.

6.3.3 Perfectionistic responses

Participants discussed their responses which were thought to be influenced by their perfectionistic tendencies. These responses were divided into day-to-day perfectionistic responses, perfectionistic responses during acute periods of adversity and the cumulative psychological responses of perfectionism. These responses indicated how participant perceived perfectionism had frequently impacted their lives on a daily basis and during times of adversity and the overall psychological impact.

6.3.3.1 Day to day perfectionistic responses

The participants perceived that they experienced a number of everyday and reoccurring responses. These were divided into three distinct subthemes: psychological responses (i.e., mental exhaustion as a result of overthinking, anxiety about performing well, guilt when not pursuing their perfectionistic standards and anger or frustration when others did not hold the same standards as them), social responses (i.e., sacrificing their social life and a negative impact on relationships with family and friends) and physical responses (i.e., physical exhaustion through extreme physical exertion and returning to training earlier than advised when injured).

Psychological responses. Responses were cognitive and affective. Participants would continuously focus and overthink about their football career and they indicated that this was mentally exhausting. James said, "It was mentally tiring as well as physically tiring. I was always thinking about football, always, non-stop thinking about football". Similarly, Dale said:

> The one thing psychologically…that is where it [perfectionism] does have an impact you're always…I'm a really deep thinker. So going into a game you're focused it's quite mentally tiring going into a game…

In addition to the mental fatigue arising from overthinking, participants were often anxious and Jason identified that this was a negative influence of perfectionism.

He said, "You spend an inordinate amount of time worrying and stressing about stuff that is irrelevant you know? You have such a peculiar perspective and obsessive about things". This anxiety was usually concerned with wanting to perform well. Daniel commented, "You so badly wanted to do well that sometimes the nerves would consume you a bit". This anxiety was also accompanied by a constant fear about their job security. James explained:

> No matter how well you'd played, you were always worried. Am I going to get a contract? Is the manager going to call me in and say yes we want to keep you or is he going to say I'm going to bring someone else in this season?

> Guilt was another affective response to perfectionism. Some participants felt guilty if they were not pursuing their usual perfectionistic standards. Guilt was typically experienced in their preparation for a game. For Craig, he felt guilt when he did not keep to a strict diet, "You'd feel guilty having a couple of slices of toast at 9 o'clock at night because you knew the impact that little things like that could have on your performance". For Daniel, he felt guilty for not doing his physical preparation, "I couldn't go to bed knowing that I hadn't done my gym work. That I hadn't stretched because the feeling of guilt of when I hadn't done it…if things had gone wrong".

Participants also became frustrated and angry at others for not holding the same values and pursuing the same standards. Craig explained:

> I think in relation to being a perfectionist you find it difficult to relate to people if, for example, a lad comes in on a Saturday and you know he's been out on a Friday night, you find that really hard to relate to. It's very easy to be frustrated….to want to take it out on that individual if they're not living those same standards that I set myself.

Social responses. Participants' commitment to achieving a successful career resulted in sacrificing their social lives. Lucas explained:

When you are a perfectionist you live your life so dedicated as a football player as I did. During my football career it comes with a price I would say and it affects your social life because you just prepare yourself, you know you can't go out. You don't go to as many social meetings as you would like to.

Such social sacrifices also negatively impacted on relationships with family and friends. Ryan said:

I made sacrifices being a perfectionist to be the best that I could. It cost me a few friends along the way….it cost me my relationship but that was what I wanted to do. They were decisions that I made and I stuck by them so there is negative things that…things that happen away from football, things happen in football because you are dedicated to doing what you wanted to do.

Physical responses. Players would push their body to the extreme to meet perfectionistic standards and this would be physically exhausting. Jason commented:

I remember we played [club] away and all I did was run, just ran. I don't know if I saw the ball that often and as a perfectionist I'm like…I've got to get up to support the attack. I've got to get back to….and you can't do that. Physically not many can do both so I'd probably end up trying to do everything and compromised along the way.

Being perfectionistic was also thought to be problematic when participants were undergoing the rehabilitation process after sustaining injuries. Although players were given an amount of time to rehabilitate and recover they wanted an early return. Lee said, "Physio said I was going to be back in 8 months and I wanted to be back in 6 months. If the physio said 6 weeks I wanted to be back in 3 weeks. Perfectionism you wanted to work harder, get fitter, get quicker". Participants discussed how they returned to training too early and this could lead to re-injury. Craig explained:

You are just impatient because the physio tells you 8 weeks and you want to be back in 5. You've got that drive and that can sometime spill over because you

think I've done everything right here I can get out there, and then you do and

you are back to square one.

6.3.3.2 Perfectionistic responses during acute periods of adversity

Participants experienced a number of responses as a result of perfectionism

during acute periods of adversity. In particular, performance failure appeared to be the

dominant stressor among participants. As with day-to day responses, these were divided

into subthemes: psychological responses (i.e., rumination, heightened negative emotions

and lower confidence), social responses (i.e., negatively impact on relationships with

loved ones and isolating the self from others) and physical responses (i.e., disrupting

sleep and changes in appetite).

Psychological responses. Participants experienced both cognitive and affective

responses. Rumination was especially common among participants during acute periods

of adversity. Players also experienced heightened negative emotions and consequently

the confidence of these players could be negatively affected in relation to their future

performances.

Although overthinking was a day-to-day reoccurring response of perfectionism,

this was thought to develop into rumination during acute times of trouble. There was a

desire to focus on possible causes of why the issue/problem occurred. James articulated

this, "There was times when I didn't have a good game and I'd really really go at myself

and punish myself in terms of trying to figure out why. Overanalysing things really".

Rumination was also accompanied by negative thoughts which included catastrophising.

When Craig was not selected to play this led him to question his abilities. He said:

Your whole world collapses around you cause you are not playing. And that's

when you start to question yourself. Am I good enough? Am I fit enough? Am I

strong enough? Am I doing all the right things? Have I done something wrong?

Participants would also have irrational beliefs. For Cameron he perceived that others would not like him after a bad performance. He explained:

I could remember not playing well particularly at [club] or conceding that I had not played well and thinking that people didn't like you. So you would go in on Monday like feeling like your relationships with people changed because you hadn't done well. And the culture breeds that but obviously I have a tendency to kind of…because I'm quite thoughtful I guess…pick up on things like that. So you'd be kind of dreading going in…going oh they all hate you….it was your mistake your fault for the goal.

At times, rumination appeared to be beneficial in helping to find solutions during adversity but overall it was considered to be a distressing period. Jason explained:

I'd be forever whirring away solutions and I think it was quite good in a way cause I did find solutions. Not to everything but it did improve me… but it was a fucking horrible time you're just forever thinking about stuff. And you know it's only 90 minutes …when you're playing a 90 minute game I think you're only really in contact with the ball for 5 minutes at the most, less than that probably but to spend a whole week thinking about 5 minutes and what you're going to do in the next 90 minutes is just pretty…I couldn't let it go you know cause you know I guess the perfectionist would 'do that better, do that better, do that better'.

Participants also discussed the affective responses of perfectionism during times of adversity. Cameron explained, "Perfectionism is quite an emotional…has an emotional attachment really. Just try and remove that emotion…what are the facts? Could you have done that better yes or no?" Participants expressed a number of intense emotions such as anxiety/fear of failure, guilt, embarrassment and disappointment. Frustration and anger, directed at the self, were also widely discussed by participants. Lee said:

> I was my own harshest critic. So never needed the manager to tell me if I had a
>
> good game or a bad game. I knew straight away really. If I was having a bad
>
> game I was the most disappointed person on the pitch. Frustrated. I expected
>
> better of myself.

Frustration and anger was also directed at others, particularly at managers when players

felt their decisions were perceived to be unfair and thwarting their goals. Tom

explained:

> You're in a good…a rich vein of form, you're confident and when that's
>
> happening the last thing you need doing is being pulled out of the team and
>
> you're thinking what are you doing? I've done all this good work and look
>
> where it has got me…this isn't right. So that's when it becomes frustrating and
>
> it's like I say it's another…it's stopping your aim. Your goal is to do well and
>
> that's what you work hard for and when it doesn't happen, and you feel it's
>
> unjust and it's not something that you can control, that's difficult.

Anger was also directed at teammates if participants felt that others had negatively

influenced their performance. John said, "I'm sure that throughout…being aggressive

with teammates, nearly fighting. I've been through all that. It's only people expressing

their desires, their passion, their honesty…hang on I'm disappointed we lost. I don't

think you've done your part to help".

A perceived poor performance appeared to impact on a player's confidence in

two ways. Some participants would try to work harder to redeem themselves and retain

self-worth. Dale said "confidence is something that you can only get by getting a good

performance. It becomes a bit of a vicious circle. The harder you work sometimes the

less it happens. So emotionally it's awful". In contrast, participants appeared to engage

in avoidance behaviour, as Ryan explained:

> That was definitely beating yourself up. Definitely. Why did I make that
>
> decision? Why did I try that pass? Why did I give that ball away it's cost us a

goal? And then you'd beat yourself up over it and then it does to a certain

degree affect how you play the next game because you maybe don't take those

calculated risks you maybe would have done if confidence was high.

Social responses. Although relationships were compromised with friends and

family during the day-to-day manifestations of perfectionism, during acute periods of

adversity this intensified. Participants had difficulty moving on from setbacks and loved

ones often felt the burden of these setbacks. James commented:

> When I was at [club] my girlfriend at the time took time off work to come for a
>
> week and we got beat…she got the train up and I didn't speak to her the whole
>
> weekend. I just didn't want her there.

Peter similarly said:

> You would have to speak to my ex-wife I suppose but in terms of that I'm sure I
>
> wasn't great to be around at that time. I'm pretty certain I wasn't. You know I
>
> would take that home and then obviously be miserable around the house and I
>
> never really used to talk much about it. I would just sit and dwell on things but
>
> that would last for a few days as oppose to ok it's done now.

In addition, participants would often want to isolate themselves from the outside world.

Lucas commented:

> If you are a perfectionist…if you win you feel great, if you lose you take this
>
> with you the whole week and when you have a losing spell you can go down
>
> there, down there…you really isolate yourself because you don't want to talk to
>
> anybody.

Physical responses. Physical responses could manifest through changes in

appetite and sleep disruption. James articulated how during the last period of his career

his appetite was affected, "It got to a stage where I'd just had enough. It affected me

when I was at [club] towards the end I wasn't eating properly cause I was stressed from

having to perform or wanting to perform". Participants also discussed how their sleep

was disrupted during acute times of trouble. Lucas explained how making mistakes in games affected his sleep:

> I was so gutted. I was so gutted with me I couldn't sleep. The mistakes for example affected my sleep. This is also a downside effect [of perfectionism]. I could not sleep. You are going through these emotions every time and you replicate this.

6.3.3.3 Cumulative psychological responses of perfectionism

Some participants described their career as a 'battle' or 'fight'. Overall these participants appeared to respond with an overwhelming lack of enjoyment and chronic dissatisfaction with their career which was thought to be influenced by perfectionism.

Lack of enjoyment. Participants felt that perfectionism created pressure to consistently achieve which inhibited their enjoyment. Summing up the feelings of many, James explained:

> At the time I thought it [perfectionism] was doing me a world of good. I think you put too much pressure on yourself. Like I said I don't think it ever affected my performance but I think it stops you enjoying what you are doing. Looking back now you got yourself so stressed and worked up in wanting to be the best all the time. You might say "oh it was a good thing because you never let your standards drop" but I'm sure there's times…well that's it you didn't enjoy it you, were stressed a lot of the time, you put a lot of pressure on yourself. It's not a way to live.

Chronic dissatisfaction. Some participants perceived that they never felt satisfied with any of their achievements, which led to an overriding sense of dissatisfaction throughout their career. Jason was always looking ahead, rather than reflecting on what he had accomplished. He said:

I think I was trying to achieve something that is unachievable for me. So I wanted to be the best footballer…you've got to think where you've come from and you've also got to give yourself more respect for what you have achieved rather than I'd always be looking at what I've got to do and where I've got to go…I was very hard on myself I think and should've probably had a better perspective on what's realistic as well.

Cameron also articulated how perfectionism led to a lack of contentment in his life:

Never being content with what you have I think…living in a bit of a false world that's achievable. A bit naïve I think perfectionists. Someone whose highly perfectionist would probably say that it helps them achieve something in sport but I would probably disagree really I think they would probably need to have a well-rounded view of sport and achievements in their life. …I think to define it would be kind of like a trait that gets to the point of view of becoming unhappy and never being satisfied with what you have done. I don't think that's a nice place to live in.

In summary, the bearing of these responses were viewed as a by-product of perfectionism. Participants did not view the day-to-day responses particularly negatively at the time and in some cases they were perceived to be beneficial to sustain their career, but on reflection participants could see how these responses had adversely impacted on their lives. During acute periods of adversity, participants would engage in rumination over their circumstances and this negatively influenced other aspects of their lives. The cumulative responses reflected an overwhelming lack of enjoyment in their career and chronic dissatisfaction with their achievements. Those that felt they voluntarily retired from football discussed their relief of ending their career because it took the pressure of perfectionism away.

6.4 Discussion

The current study explored former professional footballers' perspectives and experiences of perfectionism and how this personality characteristic influenced their lives during their career. In line with the first two aims of this study, participants explored the meaning of perfectionism and discussed both intrapersonal and interpersonal aspects. These included the underpinning processes and mechanisms which may drive one's perfectionistic tendencies. In line with the third aim, participants discussed a range of psychological, social and physical perfectionistic responses. These responses appeared to negatively impact on participants' lives, both in the short-term and long-term. The findings are discussed in more detail in context of the current understanding of perfectionism and extant research in this area.

6.4.1 Multidimensional perfectionism

The current study sought to explore participants' perceptions of what being a perfectionist means to them and how the environment might influence their perfectionistic tendencies. Against the backdrop of our current theoretical understanding of perfectionism and the ongoing debates regarding models of perfectionism, the findings demonstrate the complexity of this personality characteristic. Participants discussed perfectionism resembling SOP and SPP (Hewitt & Flett, 1991; Hewitt et al., 2017). There were nuanced differences in how participants experienced perfectionism, and both these intrapersonal and interpersonal aspects were experienced to differing degrees. Participants also discussed perceiving high personal standards and accompanying critical evaluations that reflect the broad dimensions of perfectionism (Frost et al., 1990; Hewitt & Flett, 1991). Of particular note were the interplay between high personal standards and critical evaluations and the underlying processes of these features.

High personal standards on the self were commonly discussed by participants. From both a theoretical and empirical perspective, this is consistently acknowledged as a key feature, and observed in other qualitative research (e.g., Rice et al., 2003; Slaney & Ashby, 1996). Specifically, participants expressed that they expected to perform perfectly every week and their cognitions appeared to reflect this. They discussed their behaviour of exerting excessive physical demands on their bodies in both training and weekly matches to meet the demands they had placed on themselves. This finding is consistent with research investigating obligatory exercise, whereby exercisers perceive that physically overstriving will lead to desirable outcomes (Hall, Hill, Appleton, & Kozub, 2009). Participants recognised that the standards they placed upon themselves were predominantly unrealistic. However, this appeared to be a reflection rather than considering their standards to be unrealistic at the time. Consequently, individuals with unrealistic standards often experience large discrepancies between their goals and the current situation, which can increase vulnerability to psychological distress as they perceive this as failure (Flett et al., 1998).

Self-critical evaluation was also found to be a feature of perfectionism. This corresponded with theoretical and empirical findings, particularly the qualitative studies that have found concerns over mistakes to be a central feature of perfectionism (e.g., Schuler, 2000; Sellars et al., 2016). Specifically, participants expressed how they would appraise (i.e., self-evaluate) whether they had met their personal standards. Even if participants had perceived that they had performed well they discussed how they would still engage in self-criticism regarding their performance (e.g., making minor mistakes). Thus, their performance was not considered to be acceptable and their personal standards appeared to be reinforced to loftier personal standards. By engaging in this repetition of perfectionistic behaviour (setting high standards, appraisal and self-evaluation of whether these had been met, then re-setting personal standards), participants perceived that the margin of error would be smaller and they would

maintain their self-worth to ultimately be held in high esteem. This may be why perfectionism is often pursued despite any consequences, as athletes perceive that engaging in this behaviour will help them achieve 'super elite' status (Rees et al., 2016). However, this process could also indicate why unconditional self-acceptance is elusive in athletes demonstrating perfectionistic tendencies (Hill et al., 2008).

The aforementioned intrapersonal aspects of perfectionism appeared to operate simultaneously with interpersonal aspects of perfectionism in the football context. This was because participants perceived that they were acutely aware that they were under the microscope. Specifically, participants perceived that others (e.g., managers, teammates, fans and the media) placed frequent expectations on them to meet performance standards. At times it was difficult for participants to gauge what these expectations were as they could be compounded by subjectivity (discrepancies between own and others expectations). These expectations were thought to be accompanied by frequent and intense evaluation and scrutiny from others as to whether their expectations had been met. Participants discussed their difficulty in managing others expectations and being perpetually assessed against others. Consequently, this appeared to exacerbate participants' perfectionistic behaviour (i.e., pursuing high performance standards) to avoid criticism from others. This may help to explain why negative reactions to imperfections are positively associated with avoidance goals in athletes (Stoeber, Stoll, Pescheck, & Otto, 2008). By pursuing high standards, it also appeared to give participants a greater sense of control in managing scrutiny from others. This may help to provide context to quantitative research that has found perfectionists have a higher internal locus of control than those considered to be non-perfectionists (Periasamy & Ashby, 2002).

The professional football environment was described as highly competitive, insecure and footballers were aware of how easily replaceable they were (Roderick & Schumacker, 2016). Although some participants discussed empowering experiences

with coaches, the organisational structure appeared to predominantly reflect a disempowering climate (e.g., rivalry for positions and performance-oriented) (Duda, 2013; Ntoumanis, 2012). Consequently, participants contended that they had to be perfectionists to retain their position and did not feel that they could let their standards drop as this may put their job at risk. It was also thought to be important for participants to always demonstrate competence and likeability to important others such as the manager (Hill et al., 2010). They also perceived that presenting oneself as being perfect and concealing their mistakes from others was especially important to retain their position at their respective clubs. This is consistent with perfectionistic self-presentation described by Hewitt et al. (2003). Although the interpersonal aspects of perfectionism have been demonstrated in other qualitative studies in sport (Gotwals & Spencer-Cavaliere, 2014; Sellars et al., 2016), explicitly exploring how one views their environment has provided a greater insight in understanding these aspects.

6.4.2 Perfectionistic responses

The current study also explored perfectionists' responses particularly during times of challenge and adversity. This was because perfectionism is suggested to be diathesis-stress model as perfectionists are thought to make events or situations more stressful through their cognitions, behaviour and attitude and are therefore vulnerable to ill-being (Hewitt et al., 2017). Participants reflected on their careers and identified a number of psychological, social and physical responses thought to be a consequence of being perfectionistic. These responses could be brief or chronic (duration), and mild or acute (intensity). Thus, these findings were consistent with Flett and Hewitt's (2016) conceptualisation of perfectionistic reactivity.

Psychological responses were predominantly identified as cognitive and affective. Day-to-day, participants discussed how they rarely switched off from thinking about football and their preparation for an upcoming game. Obsessive overthinking has

been captured in others qualitative findings exploring perfectionism in athletes (e.g., Hill et al., 2015). Overthinking was also associated with feelings of worry about their upcoming performance and a fear of failure (Flett, Madorsky, Hewitt, & Heisel, 2002; Hall, Kerr, & Matthews, 1998). Consequently, participants expressed that overthinking was mentally exhausting. They also discussed their experiences of other emotions such as feelings of guilt when they had not pursued their usual perfectionistic standards (e.g., missing a gym session) and frustration/anger at others when they were not pursuing the same standards as them.

During acute periods of adversity, participants expressed that they fixated on why the situation had occurred (e.g., performance failure) and its consequences (e.g., catastrophizing about losing their career). This is consistent with ruminative thinking (continuously thinking about negative experiences). Although rumination is identified as a key feature of perfectionistic reactivity, few empirical studies have investigated the association between perfectionism and rumination (Flett, Nepon, & Hewitt, 2015). Emotions also appeared to be heightened during times of adversity with participants citing anxiety, fear, guilt, embarrassment and disappointment. Anger and frustration appeared to be especially heightened and directed at others if decisions were perceived to be unfair or they perceived others (e.g., teammates) had prevented them from reaching their desired standards. This finding resembled the hostility towards others typically associated with other-oriented perfectionism (Hewitt & Flett, 1991). Consequently, it is suggested that perfectionists who do not have effective cognitive and emotional self-regulation skills, may be vulnerable to experiencing ill-being (Flett & Hewitt, 2016). Participants also discussed the fragility of their confidence during adversity which could influence their subsequent behaviour. They appeared to engage in approach or avoidance behaviours, by looking for opportunities to redeem themselves and physically overstrive to recover self-confidence or engage in avoidance behaviour by taking fewer risks to protect self-confidence (Stoeber et al., 2008).

Participants also discussed how they were physically exhausted from putting extreme demands on their body to fulfil expectations. When they sustained an injury, they expressed that they would try to return to training earlier than advised. This may provide some context to quantitative findings, in which perfectionistic concerns positively predicted training distress (Madigan, Stoeber, & Passfield, 2016c) and an increased likelihood of sustaining an injury (Madigan, Stoeber, Forsdyke, Dayson, & Passfield, 2017). Being a perfectionist was also thought to negatively influence their social lives. Participants expressed that they frequently declined social events, meetings with friends and even ended relationships. Hill et al., (2015) also captured this willingness to make sacrifices and acknowledged that this has received little empirical attention to date.

Relationships with others could become especially strained, particularly when participants experienced acute periods of adversity. Participants revealed that they would choose to isolate themselves from their family and friends when experiencing setbacks. As such, perfectionism has been found to negatively impact on close relationships and this has been attributed to the use of certain coping strategies (e.g., avoidance coping) (Haring, Hewitt, & Flett, 2003; Stoeber, 2012). Consequently, these findings alongside the cognitive and affective factors are indicative of the psychological difficulty and possible vulnerability to ill-being such as burnout and depression. Although no participants had been clinically diagnosed with depression, some discussed appetite and sleep changes, low mood, loss of pleasure in playing football, and fatigue, which are consistent with the symptoms associated with depression (*DSM-5*, 2013). In addition, participants discussed physical and mental exhaustion, inadequate sporting abilities and achievement, and feelings of diminishing interest in football that reflect the symptoms relating to burnout (Raedeke & Smith, 2001).

In interviewing retired former footballers, this enabled them to reflect on the long-term impact of perfectionism on their lives. Some expressed that their careers

resembled a 'battle' and 'fight' as a consequence of being a perfectionist. Specifically, it appeared that there was a continual desire to fulfil their own and others standards and manage the criticism. This was thought to create intense pressure which they recognised could negatively impact on the enjoyment of their career. Participants discussed their outlook of always expecting to do well, fixating on mistakes and continually reinforcing perfectionistic standards for future performances. Consequently, participants expressed how they felt constantly dissatisfied. This finding is consistent with Hill et al.'s (2015) study, whereby perfectionistic athletes discussed their feelings of chronic dissatisfaction. Historically, theorists have contended that this inability to derive any satisfaction from achievements is an important feature of perfectionism (e.g., Hamacheck, 1978). Some participants also appeared to have a narrow sense of self (i.e., high athletic identity; Brewer, 1993) as they expressed that they were so focussed on continuously striving to meet performance standards that they should have had a more well-rounded view of their life and achievements.

6.5 Conclusion

The findings of this study demonstrate the complex nature of perfectionism. The current study was consistent with Hewitt and Flett's CMPB. In particular, both intrapersonal and interpersonal aspects of perfectionism and the interplay between the pursuit of high standards and evaluation were described by participants. The football environment was also considered to be an important factor in how perfectionism was experienced and was thought to influence perfectionistic tendencies. Findings similarly aligned with the concept of perfectionistic reactivity as participants discussed experiencing psychological, social and physical difficulties, which appeared to vary in duration and intensity and was dependent on their circumstances. Through using

qualitative inquiry, it has illuminated the multidimensional nature of perfectionism and

the importance of considering the situational circumstances of the athlete.

Chapter 7 – General discussion

7.1 Purpose of the thesis

Participating in sport may lead to a number of positive short-term and long-term outcomes such as improving physical fitness, developing psychosocial skills, and enhancing well-being (Eime et al., 2013; Malina, 2011). While sport can lead to positive outcomes this is not the case for everyone. Athletes are frequently reporting their experiences of psychological ill-being such as burnout and depression (Faulkner & Tamminen, 2016). From a theoretical perspective, models of depression and burnout suggest that ill-being may manifest as a result of unfavourable environmental conditions provided by sport or life more generally, as well as the individual characteristics of the athletes (e.g., Beck & Bredemeier, 2016; Gustafsson et al., 2011). In research, although athlete ill-being is a developing area in sport psychology, there are few systematic empirical attempts to investigate athlete vulnerability to ill-being. Further, depression has received less scholarly attention in comparison to other areas of ill-being in sport. With this in mind, the purpose of the thesis was to investigate potential correlates and antecedents of ill-being in athletes. Consequently, understanding how and why athletes may be vulnerable to ill-being is important in informing key stakeholders such as governing bodies, coaching staff, and parents on how best to support their athletes and provides the opportunity to develop evidence-based preventative and intervening strategies in the future. In this final chapter, the findings of the thesis are summarised and the knowledge contribution of the thesis is discussed. This is followed by a discussion of the practical considerations and limitations and future directions of the thesis.

7.2 Summary of the findings

It is not known how many athletes may be suffering from depression and what factors may influence the development and maintenance of depression. Thus, the purpose of the **first study** of the thesis was to investigate the prevalence, psychosocial correlates and risk factors, and moderators of depression in athletes. A comprehensive systematic review was conducted and fifty-nine studies met the inclusion criteria (six studies used the same data set) and were subsequently included in the review. Findings revealed that prevalence of depression in athletes was variable (i.e., 11% to 58% depressive symptoms and 4% to 34% clinical depression). This variability may be dependent on a number of factors such as methodological differences (e.g., different instruments used to measure depression) and contextual differences (e.g., gender, age, competitive level). The majority of studies examined psychosocial correlates of depression as most studies used cross-sectional designs. In contrast, few studies had used longitudinal designs to examine psychosocial risk factors of depression.

Correlates of depression were identified as socio-demographic factors (e.g., gender), life events (e.g., retirement), performance and career satisfaction (e.g., objective performance), individual differences (e.g., personality characteristics), interpersonal relationships and support (e.g., coach/parent support and conflict), and psychological well-being and ill-being (e.g., vitality and anxiety). Risk factors of depression were identified as life events (injuries and deselection/retirement) and psychological ill-being (eating disorder pathology). As few studies examined possible risk factors, using longitudinal designs in the future will help towards establishing temporal precedence. Finally, only a small number of studies had examined moderators. Moderators that were investigated were injury status, athlete status, sleep quality, coping ability, social support and sport type. However, only injury status (injured vs non-injured) was identified as a moderator of the relationship between athletic identity

and depressive symptoms. Examining moderating factors of depression in athletes can help to uncover the underpinning processes of these relationships.

Perfectionism was a personality characteristic found to be a correlate of depression in the systematic review. Perfectionism is also known to be associated with other ill-being outcomes such as burnout in athletes (Hill & Curran, 2016). With this in mind, perfectionism was selected as a primary focus for the remainder of the thesis. This was of especial interest because it is suggested that perfectionists have the ability to make events more stressful through their behaviour and attitude. Consequently, perfectionism may be a vulnerability factor to ill-being (Hewitt & Flett, 2002). In sport, there is some supporting research that suggests perfectionism may exacerbate ill-being. However, this research has been limited and predominantly cross-sectional. Thus, the purpose of the **second study** of this thesis was to investigate the relationship between perfectionism and ill-being (i.e., depression and burnout) over time in youth footballers.

Three theoretical models pertaining to personality – ill-being were tested. These were a vulnerability model (perfectionism predicting burnout and depression), a complication/scar model (burnout and depression predicting perfectionism), and a reciprocal relations model (perfectionism predicting burnout and depression, and the reverse). One hundred and eight male youth academy footballers completed questionnaires across two waves over three months. The findings suggested the relationship between perfectionism and burnout symptoms may be best represented by a reciprocal relations model wherein dimensions of perfectionism (SPP) act upon burnout symptoms (exhaustion and devaluation) and, in turn, burnout symptoms (devaluation) act upon perfectionism (SPP). The relationship between perfectionism and depressive symptoms provided evidence of a complication/scar model, wherein depression acts upon perfectionism (SPP) over time but not the reverse.

To investigate *when* perfectionism may be related to burnout symptoms and depressive symptoms, the purpose of the **third study** was to establish whether the

coach-created climate moderated this relationship. It has been suggested that perfectionism may be moderated by an athlete's environment and the coach-created climate may be of particular relevance (Flett & Hewitt, 2005; Hall et al., 2012). That is, athletes exhibiting self-critical forms of perfectionism may perceive the climate to be less threatening if it is empowering (Hall et al., 2012). Two hundred and sixty-seven male youth academy footballers participated in the study and completed questionnaires at one time point. Findings indicated that an empowering climate buffered devaluation in youth footballers exhibiting low/average levels of SOP. In addition, a disempowering climate exacerbated a reduced sense of accomplishment in youth footballers exhibiting mixed perfectionism (high SOP/ high SPP) and low perfectionism (low SOP/ low SPP). However, neither an empowering nor disempowering climate moderated the perfectionism and exhaustion relationship and the perfectionism and depressive symptoms relationship.

The findings from study two and study three demonstrated that the perfectionism – ill-being relationship is complex. Thus, the purpose of the **fourth study** was to explore former professional footballers' perceptions of being a perfectionist and how, in their view, it influenced their lives during their career. Adopting a qualitative interview design enabled a detailed insight into their perceptions of being a perfectionist and the complex ways perfectionism may influence their lives in an environment that is personally meaningful, which can be difficult to capture using reductionist quantitative methods. Twelve male retired professional footballers that self-labelled as perfectionists were purposefully selected and subsequently interviewed.

Findings of study four illuminated the multidimensional nature of perfectionism and offered unique insight into this personality characteristic. Specifically, the interplay between the pursuit of high standards and evaluation were described by participants through discussing their cognitions (e.g., thoughts about expectations) and behaviours (e.g., putting physical demands on the body to meet expectations). The pursuit of high

standards and evaluation was observed in both intrapersonal (high standards and evaluation from self) and interpersonal ways (high standards and evaluation from others) and was consistent with Hewitt and Flett's CMPB. In addition, findings also demonstrated the importance of considering the environment and situational circumstances of the athlete. The football environment was thought to influence participants' perfectionistic tendencies (e.g., experiencing job insecurity). Participants also discussed that they experienced psychological (e.g., rumination), social (e.g., sacrificing social life) and physical responses (e.g., physical exhaustion), which varied in duration and intensity depending on their perceived circumstances (e.g., adversity), similarly aligning with the concept of perfectionistic reactivity. These responses appeared to negatively impact on participants' lives and were thought to be indicative of psychological difficulty and possible vulnerability to ill-being such as burnout and depression.

7.3 Thesis contribution to the current state of knowledge

The collective findings of the thesis make an important contribution to the current state of knowledge in sport psychology. In addition to recognising the knowledge contribution of this thesis there is also an opportunity to reflect on moving the field forward. Specifically, the thesis demonstrates that psychological ill-being is prevalent in athletes and is an important issue that requires greater attention. The thesis also demonstrates that perfectionism is an important factor in athlete ill-being and therefore indicates the practical relevance of managing perfectionism in sport. Finally, the thesis demonstrates that perfectionism research in sport is a growing area of interest and there is an opportunity to develop research that can capture the complexity of this personality characteristic.

7.3.1 Advancing our understanding of athlete ill-being

It is apparent that athlete ill-being is receiving more attention and becoming a developing area of interest. A number of high profile athletes are anecdotally discussing their experiences of ill-being and organisations such as the NCAA are recognising that athletes may be vulnerable to ill-being as a result of the demands and pressures they face. From a research perspective, athlete ill-being is a developing area but it is still in its infancy. Regarding depression, theoretical models outside of sport are well developed but have received little attention in sport and current research in sport has been limited and typically unsystematic. In comparison, a number of theoretical models regarding athlete burnout have been developed but there is still much to discover regarding the antecedents and consequences of athlete burnout.

The thesis demonstrates that athletes are vulnerable to ill-being (i.e., burnout and depression) and it is an important issue in sport psychology. With this mind, considering how we can optimise an athlete's psychological health should receive the same enthusiasm as helping athletes to achieve optimal performances. The findings demonstrate that ill-being is nuanced and there may be many factors that are implicated in the development of ill-being such as individual differences, life events, and interpersonal relationships that we must take into account. However, much of the research is cross-sectional, and very few studies have examined the risk factors of ill-being in athletes. Through taking a systematic approach in this thesis, this has indicated what factors may be implicated in athlete ill-being and subsequently a line of inquiry was developed.

Thus, to continue to develop and advance our understanding of ill-being in athletes, taking a systematic approach is warranted. First, reviewing theoretical models of ill-being in addition to appraising current empirical literature, both in and outside of sport, indicates what we currently know and may identify possible areas of investigation

to develop a line of research. Further, having a methodological framework can also provide a systematic way of investigating ill-being in athletes. It is suggested that ill-being may occur as a result of complex causal chains (Kraemer et al., 2001). With this in mind, determining whether something is a risk factor and then how it may be associated with other risk factors, using appropriate methods (to test moderating and mediating relationships), offers a logical way to understand these complex causal chains.

7.3.2 Recognising perfectionism has an important role in athlete ill-being

The relationship between perfectionism and ill-being has received much attention outside of sport. Perfectionism has been identified as a maladaptive factor as it is thought to be a diathesis-stress model that may elicit psychopathology (Flett & Hewitt, 2002). Research has supported this contention and perfectionism dimensions have been found to be risk factors of clinical disorders (depression, anxiety disorders, obsessive-compulsive disorder and anorexia/bulimia nervosa) and the symptoms of these disorders (e.g., depressive symptoms, anxiety, OCD symptoms, eating pathology, drive for thinness) (Limburg et al., 2016; Smith et al., 2016). Flett and Hewitt (2005, 2014) have suggested that perfectionistic athletes may also be vulnerable to ill-being as they must contend with specific stressors unique to the sport domain. Although there is some empirical support for the relationships between perfectionism and ill-being in athletes (e.g., anxiety, eating disorders, burnout and depression), relatively little is known about this relationship, particularly over time.

The thesis demonstrates that perfectionism plays an important role in athlete ill-being, particularly in relation to burnout and depression. Thus, whilst perfectionism is thought to be advantageous in helping athletes achieve a high level of performance (Rees et al., 2016), it is also important to acknowledge that perfectionists may have a heightened risk of ill-being. The findings demonstrate that SPP is consistently

associated with ill-being and may be considered a risk factor as well as having a reciprocal relationship. In addition, SOP may also be implicated in ill-being to some degree but this relationship is more complex. The findings also demonstrate the way perfectionistic athletes perceive their environment, and the way they think and behave can have a detrimental impact on their psychological health.

With this in mind, there is a practical relevance in helping athletes manage perfectionism. At present, research examining the effectiveness of interventions to manage perfectionism is scant. Consequently, there is an opportunity to investigate interventions that aim to ameliorate maladaptive perfectionistic tendencies (e.g., criticism from the self and others). Based on the current findings, then, interventions that target perfectionistic cognitions may be effective, particularly when athletes experience adversity (i.e., rumination about situations). In addition, interventions that consider the influence of important others (e.g., the coach) may also prove to be effective especially given that SPP is associated with ill-being. Further discussions regarding practical implications and recommendations are also discussed in the next section.

7.3.3 Developing perfectionism research in sport

Research on perfectionism in sport has begun to increase over the past 20 years. Although much has been learned about the perfectionism construct, many researchers have been concerned with the debate of 'adaptive' and 'maladaptive' types of perfectionism. In addition, the methods used to examine these subtypes have been predominantly reductionist. This debate prompted Flett and Hewitt (2014) to contend that "our overarching concern is our sense that current sport, exercise, and dance literature, which is comprised largely of variable-centred research, tends to paint a substantially more positive view of perfectionism than is actually warranted" (p.398).

Thus, the focus on types of perfectionism has somewhat detracted from investigating this personality construct in a more holistic way.

The thesis provides support that perfectionism is complex and there is much to learn about this personality characteristic in sport. The thesis adopted Hewitt and Flett's CMPB as it offers a theoretical framework unlike many of the other models that are statistically formed. The CMPB also demonstrates the multidimensional nature of perfectionism and recognises the intrapersonal and interpersonal dimensions of perfectionism. Further, the thesis also took into account the situational context, which Flett and Hewitt (2014) suggest is important in determining whether perfectionism is maladaptive. In taking this theoretical approach and using a range of methods to explore perfectionism this has enabled a more person-centred view to help understand this personality characteristic. Specifically, the thesis used different methods to investigate the perfectionism – ill-being relationship, whilst considering the influence of the situational context.

To continue to develop perfectionism research in sport, adopting a more flexible approach to investigating perfectionism is valuable for the progression of the field. This means not only considering the trait dimensions but also the cognitive and self-presentational elements of perfectionism. At present, little is currently known about perfectionistic cognitions and perfectionistic self-presentation in sport. Consequently, important new insights could emerge from research that investigates these components of perfectionism. In addition, using qualitative methods to capture the complexity of perfectionism will help to continue to illuminate processes and mechanisms that quantitative research cannot accomplish. In this way, we can continue to explore the interplay between the perfectionistic individual and their environment.

7.4 Practical implications and recommendations

A fundamental reason for undertaking this line of research was to better understand how and under what circumstances athletes may be vulnerable to ill-being. In addition to the theoretical and empirical contribution this thesis makes to the topic, it can indicate valuable practical implications and recommendations going forward for those with a vested interest or duty of care towards an athlete's psychological health. Three practical considerations for the future are discussed in relation to the collective findings of the thesis. Specifically, these practical considerations refer to becoming knowledgeable about ill-being, recognising the importance of the environment, and managing times of challenge and adversity effectively.

7.4.1 Becoming knowledgeable about ill-being: Reducing stigma and identifying athletes at risk

The prevalence of depression was identified in three studies. In study one, prevalence of depressive symptoms was found to be up to 58% and clinical depression was found to be up to 34% among athletes. In addition, study two and study three indicated that the prevalence of depressive symptoms in youth footballers was found to be up to 33% mild to major depressive symptoms and up to 12% major depressive symptoms. Together, these findings indicate that athletes are potentially at risk of depression. Further, peak competitive years for athletes typically overlap with adolescent years when vulnerability to mental illness is especially heightened (Thaper et al., 2012). Therefore, there is a clear rationale for athlete ill-being to receive more attention and positive action in sport.

For athletes exhibiting perfectionistic tendencies, coaches and support staff may need to be especially observant in detecting vulnerability to ill-being. This is because athletes may try to conceal imperfections and present themselves as perfect (Flett &

Hewitt, 2014). This was demonstrated in study four, whereby some former professional footballers discussed their difficulty in seeking support. Their perfectionistic personality was one factor and the environment was another factor. Some expressed that they could not discuss any psychological difficulties for fear of how they would be perceived by others (i.e., less than perfect) and the negative impact that disclosing difficulties may have on their career (i.e., de-selection and being released from their respective club). With this in mind, it is important to have the necessary skills to recognise athletes at risk of ill-being who require further support.

One way that all involved parties can engage in to support athletes vulnerable to ill-being is to become more knowledgeable about its causes, prevention, and management. This is also known as mental health literacy (Jorm et al., 1997). Being more knowledgeable about ill-being can help to reduce stigma (i.e., negative attitudes towards ill-being) and create an open environment of normalising discussions about our psychological health (Penn et al., 2005). Consequently, reducing stigma can encourage help-seeking behaviours of vulnerable athletes (Gulliver et al., 2012). For those working directly with athletes, one way to improve mental health literacy is through 'Mental Health First Aid' training (MHFA) (Kitchener & Jorm, 2008). Recent research has indicated that MHFA has improved coaches' and the support staffs' abilities to recognise mental health issues among athletes. In addition, they felt confident in their ability to support the athletes, referring them to professional services if necessary (e.g., Sebbens, Hassmen, Crisp, & Wensley, 2016).

7.4.2 Recognising the importance of the environment: Creating authentic interpersonal relationships and providing good support

Relationships with others were identified as being important to an athlete's psychological health. In study one, loneliness, unsupportive relationships with others (e.g., conflict and control), maladaptive attachment style and basic needs thwarting were

positively associated with depression. In contrast, cohesion and connectedness, supportive relationships with others (e.g., encouragement and autonomy support), adaptive attachment style and basic needs satisfaction were negatively associated with depression. Similarly, in study three, a disempowering climate positively associated with burnout symptoms and depressive symptoms. In contrast, an empowering climate negatively associated with burnout symptoms and depressive symptoms. Therefore, creating an inclusive, secure, and empowering climate and rejecting a disconnected, insecure, and disempowering climate appears to be warranted to reduce ill-being.

For athletes exhibiting perfectionistic tendencies, the perceived environment and managing relationships with others may be especially important. In study three, a reduced sense of accomplishment was exacerbated in youth footballers demonstrating high levels of SOP and SPP and perceiving a disempowering climate. Similarly, in study four, participants' perfectionistic tendencies were also thought to be influenced by the environment. Participants reported that they were acutely aware of expectations and scrutiny from others as well as managing continuous job insecurity. Consequently, these environmental factors appeared to be a constant source of stress and pressure for the participants to fulfil others expectations, avoiding others scrutiny and performing perfectly to maintain their career.

With this in mind, developing and fostering authentic relationships with athletes and providing a supportive environment may offer a viable way to positively influence their psychological health. Strategies concerning conflict management (e.g., taking time to clarify expectations and cooperation during conflict), creating openness (e.g., two-way communication and disclosure of feelings), considering one's motivation (e.g., basic needs satisfaction and emphasising enjoyment), providing positive and constructive feedback (e.g., offering praise where appropriate), showing support (e.g., being present and reliable) and encouraging social networks (e.g., socialising and interacting away from sport) may offer practical ways to maintain quality relationships

(Rhind & Jowett, 2009). Another practical consideration is the 'Empowering Coaching' programme. Empowering Coaching is a theoretically and empirically evidence-based educational programme that has been developed to help coaches (and others working with athletes) re-evaluate their coaching practices and foster quality motivation and enjoyment in their athletes and preventing ill-being (Duda, 2013).

There is also a rationale for offering greater support for athletes experiencing adversity and negative life events. In study one, life events and performance failures were identified as correlates and risk factors of depression. In particular, athletes suffering from injuries, being released from their club, and involuntary retirement were identified as risk factors of depression. This may be because athletes who strongly identify with the athletic role may be more vulnerable to depression when their athlete status is under threat (Doherty et al., 2016). Thus, those working with athletes will need to be especially vigilant when athletes experience periods of adversity and should consider how they can best support them through these challenging times. As injuries are common amongst athletes and career termination is inevitable, incorporating proactive strategies for athletes such as programmes that focus on life development (e.g., career, education and lifestyle options) may be beneficial in reducing the likelihood of experiencing ill-being and can help to create a well-rounded identity (Gordon & Lavallee, 2012; Park, Lavallee, & Tod, 2013).

7.4.3 Managing times of challenge and adversity effectively: Modifying an athlete's cognitions and behaviour through psychological support

It is important to note that not all individuals that experience negative life events or performance difficulties will develop depression. Vulnerability to depression may be dependent on the way life events are perceived and how an individual respond to their situation (Ingram et al., 2009). Study one demonstrated that individual differences such as cognitive processes and beliefs about the self were identified as correlates of

depression. Specifically, coping strategies (e.g., avoidance and self-pity), negative attribution to failure, conditional goal setting and personality characteristics (e.g., neuroticism and perfectionism) were positive correlates of depression. In contrast, coping strategies (e.g., situation control and positive self-encouragement), self-confidence, and intrinsic religiosity were negative correlates of depression. Therefore, providing psychological support to help athletes work on their cognitions and behaviours such as developing more helpful coping strategies and strategies to build self-confidence can be effective in reducing and preventing ill-being (Cogan, 2000).

For perfectionistic athletes, psychological support may be particularly beneficial in helping them to modify their cognitions and behaviour to reduce ill-being. This is because perfectionists are thought to negatively appraise their circumstances and have an ability to make their situation more stressful through their behaviour and attitude, indicating vulnerability to ill-being (Flett & Hewitt, 2016). In study four, athletes discussed their cognitions and behaviours particularly during adversity. When experiencing difficulty, participants commonly cited rumination which could be accompanied by irrational beliefs and catastrophising about their situation. They also discussed the strain that adversity put on their relationships with others (e.g., isolating themselves and showing anger) which is consistent with the notion that perfectionists are known to impair relationships with others as a result of their behaviour (e.g., creating conflict) (Lee-Baggley, Nealis, & Sherry, 2016).

As perfectionistic athletes are highly self-critical and sensitive to others criticism, sport psychologists may wish to focus on strategies to help athletes notice and acknowledge their thoughts and improve their self-compassion and self-acceptance (Lee-Baggley et al., 2016). Cognitive behavioural therapy (CBT) is one method that has been proposed for those working with perfectionistic athletes (Gustafsson & Lundqvist, 2016). CBT is problem focused and attempts to modify and change overt behaviour by altering thoughts, assumptions and interpretations (Kazdin, 1978). Consequently,

reducing negative perfectionistic cognitions could alleviate burnout symptoms and depressive symptoms (Flett, Coulter, Hewitt, & Nepon, 2011; Hill & Appleton, 2011). Working with perfectionistic athletes can however be challenging. This is because perfectionistic beliefs are often deeply rooted in one's identity and therefore difficult to change (Hall et al., 2012). Athletes may worry that they will be viewed as mediocre if they relinquish their perfectionistic beliefs or they could be perfectionistic in their treatment (i.e., try to be the 'perfect' client) (Gustafsson & Lundqvist, 2016). With this in mind, it is likely that effective management of perfectionism will only be possible over an extended period of time.

7.5 Limitations and future directions

The findings of this thesis must be considered in the context of the limitations of each study. First, study one was a narrative systematic review rather than meta-analytical review. This was because of the heterogeneous study aims and outcomes (i.e., the variability in identified correlates, risk factors and moderators and measures of depression). In addition, some findings are based on only one or two papers and the methodological quality of some studies was poor thus using meta-analytical techniques could provide misleading findings (CRD, 2009). As a result, these factors prevented the application of a meta-analysis to provide a quantitative summary (i.e., effect sizes) of specific relationships pertaining to depression and a test of their statistical significance could not be provided. In future, as the field develops, researchers may wish to utilise meta-analytical techniques to combine homogenous studies and advance the interpretation of the findings.

A second methodological consideration for future reviews concerns the literature search. Although an extensive literature search was conducted, not all relevant studies may have been included in the review. The literature search is dependent on the

results of the specific databases, chosen keywords and the inclusion/exclusion criteria. In particular, studies were included if they were peer reviewed, published in English and the full paper could be accessed from the University databases or via interlibrary loans. Studies were not included if they did not meet the criteria or were inaccessible. Although steps were taken to mitigate bias (e.g., citation searching and contacting authors with multiple publications), concerns have been raised regarding biased findings when only including published and English language studies in reviews (Petticrew & Roberts, 2006). In light of these concerns, researchers should consider including unpublished research and other-language journals. Another related consideration for conducting future reviews is the inclusion of qualitative research. This systematic review only included quantitative studies that examined depression in athletes. As qualitative research is beginning to emerge exploring athlete depression (e.g., Doherty et al., 2016), a meta-synthesis of qualitative research in the future will offer complexity and illuminate contextual factors which cannot be observed in quantitative research (Williams & Shaw, 2016).

The majority of studies included in the systematic review were cross-sectional. Without longitudinal designs it is difficult to determine possible risk factors of depression. Study three also used a cross-sectional design. Consequently, temporal ordering cannot be established and this may be particularly problematic when investigating the moderating role of the coach-created climate. That is, there may be alternate ways of defining the relationships between perfectionism and the coach-created climate despite the theoretical associations that have been proposed. Although cross-sectional research is useful in determining whether associations exist, future research is required to determine whether these associations are supported longitudinally and are risk factors of ill-being.

In undertaking a longitudinal design, the duration of the investigation is another salient factor that needs to be contemplated. Although study two used a longitudinal

design, the relationship between perfectionism and ill-being was captured over a relatively short period of time. Specifically, the perfectionism – ill-being relationship was examined over two waves across three months. This study did demonstrate significant effects over this short period and other similar studies have also observed significant effects over a three month period (e.g., Madigan et al., 2015, 2016b). However, examining perfectionism, burnout, and depression over longer periods seems warranted. Especially given that it has been suggested relationships may change across the lifespan and may demonstrate a reciprocal relationship in adulthood (Asseraf & Vaillancourt, 2015).

As well as investigating risk factors (correlates that precede the outcome), establishing causal risk factors (a risk factor when changed is shown to change the outcome) of ill-being is important for future advancement of the field. Causal risk factors will help to determine single or multiple causal chains and is necessary to bridge gaps in theory and ultimately inform policy, aid preventative strategies and treatment interventions (See Kraemer et al., 2001). One way of developing this research is the examination of moderators and mediators. In study two, cross-lagged panel analysis relies on the assumption that there is no third variable that may exert a causal impact on perfectionism and ill-being (Kenny, 2005). In study three only one moderator was investigated (i.e., coach-created climate) and as previously indicated this study was cross-sectional. Theoretical and empirical research has demonstrated that there are a number of other factors to consider that are associated with perfectionism and ill-being (e.g., coping style and unconditional self-acceptance). Consequently, future studies should utilise longitudinal designs that can include moderators and mediators to determine whether causal chains exist in the perfectionism – ill-being relationship.

A difficulty of conducting longitudinal research in athlete samples is participant dropout. In study two, from Time 1 to Time 2 there was a 33% dropout rate. The high dropout may be due to a number of factors such as the release of players from

academies over the duration of the study. Consequently, with frequent turnover in the academy setting it is difficult to retain participants, particularly over a longer period of time. One subsequent consideration is that youth football players who dropped out of the study may have been experiencing higher levels of burnout or depression. With this in mind, future research will need to build in procedures to retain these participants in the study after they have been removed from the setting.

Another limitation of study two and study three was the low reliability of perfectionism instruments. Specifically, in study two SOP and SPP had low internal reliability at time point one and in study three SPP had a low internal reliability. As a result, this will have attenuated relationships between variables, particularly across time (Henson, 2001). Future studies might consider using other measures alongside or instead of the brief HMPS (Cox, Enns, & Clara, 2002; Hewitt & Flett, 1991) to capture perfectionism. In particular, future studies might also consider using sport-specific perfectionism measures (e.g., Performance Perfectionism Scale for Sport; Hill, Appleton, & Mallinson-Howard, 2016) rather than modifying the stems of the global instruments to "in football", which may have also impacted on reliability (Dougherty, 2008). In addition to considering the low reliability of instruments, it is also important to acknowledge the validity of these measures. A concern with these measures is that the data collected in the studies were all based on self-report. Consequently, the measurement error associated with using one method of measurement can inflate associations among variables (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Thus, utilising other methods of measurement such as coach and parent ratings of perfectionism, depression and burnout or including physiological markers of depression and burnout may improve construct validity.

It is also important to acknowledge the position taken in study four. The qualitative design in study four was in line with the epistemological stance and chosen methodological approach. Thus, it is acknowledged that the findings may be interpreted

differently by others. In addition, participants self-identified as perfectionists, rather than being selected through their questionnaire scores as demonstrated in previous qualitative studies. Although the findings included features of perfectionism in existing models, it is not known whether participants would be considered perfectionists or to what degree they would be perfectionistic on each dimension (e.g., SOP/SPP). Interviews were also retrospective which may have led to difficulties in recalling events or events may be viewed differently on reflection. Therefore, to challenge or substantiate the findings in study four, it is suggested that others adopt the same research aims and interview schedule, using both self-identification and questionnaires with athletes currently competing.

A further limitation of the thesis is the generalisability and transferability of findings. Participants in three of the four studies were male footballers competing in elite settings in England. Specifically, study two and study three included youth academy players predominantly of adolescent age. This limits the generalisability of findings in relation to whether the relationship between perfectionism, coach-created climate and ill-being exists in other athlete samples. Similarly, in study 4, interviews were conducted with male former professional footballers from the English football system. Therefore, it is difficult to determine the degree of transferability to other sport contexts with athletes of differing demographics. Differences between the current findings and previous research may reflect this issue (e.g., Gotwals & Spencer-Cavaliere, 2014; Madigan et al., 2016a). In addition, perfectionism has been found to differ depending on one's domain and gender (Dunn, Gotwals, & Causgrove Dunn, 2005; Haase, Prapavessis, & Owens, 2013). Future research should aim recruit males and females of different ages in other sports using both quantitative and qualitative methods to continue to develop our understanding of perfectionism in athletes.

7.6 Conclusion

Athletes competing to reach or maintain elite status may be at risk of ill-being, including mental health issues such as depression, due to the sport context. Although there is a developing research base investigating ill-being in athletes, it is clear that this issue is intricate and there is much to learn regarding the development of athlete ill-being. Thus, the thesis contributed to this developing research base with a particular focus on depression, burnout and perfectionism. In particular, the findings of this thesis provide evidence that athletes are vulnerable to experiencing depression and there is a variety of implicating individual and environmental factors which are associated with depression. However, relatively little is known about risk factors and moderators of depression and therefore the findings indicate potential avenues of research for others who wish to investigate depression in athletes. The findings of the thesis also evidence the complex relationship between perfectionism, burnout and depression. Specifically, the findings extend previous research by demonstrating that there are differences in how perfectionism is experienced over time in relation to both burnout and depression and indicate that there is merit in examining these relationships reciprocally. In addition, the findings of the thesis are also the first to demonstrate that the degree to which burnout is experienced can be dependent on the interaction between combinations of perfectionism and the climate created by the coach. Finally, the findings extend previous research by providing an in-depth insight into the multidimensional nature of perfectionism and indicate the significance of considering the influence of the environment and experiences of adversity. Together these findings demonstrate that perfectionism has an important role in athlete ill-being and therefore there is a practical relevance in helping athletes to manage perfectionism. These findings also demonstrate the importance of adopting a more flexible approach to investigate perfectionism which is valuable for the progression of the field. Overall, this thesis has made several important contributions to

research investigating athlete ill-being, with a particular emphasis on the role

perfectionism plays in this relationship in the context of football.

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Appendix A
Confirmation of ethics approval

A.1 Study 2 and Study 3 ethics approval letter

York St John
University

Faculty of Health and Life Sciences
Lord Mayor's Walk YORK YO31 7EX
Tel: (01904) 876734
Fax: (01904) 876500

16th October 2015

Nathalie Noret
Chair of Faculty of Health & Life
Sciences Research Ethics
Committee
Direct Line 876311
E-mail: n.noret@yorksj.ac.uk

Dear Esmie,

RE: Perfectionism and Psychological Well-Being within the Footballing
       Environment

REF: 130111650_Smith_09092015

The research ethics committee has approved, without reservation, the above
research ethics submission of 9th September 2015.

Yours sincerely

A.2 Study 4 ethics approval letter

Esmie Smith,
PhD Student
Faculty of Health & Life Sciences

26th May 2015

Nathalie Noret
Chair of Faculty of Health & Life
Sciences Research Ethics
Committee
Direct Line 876311
E-mail: n.noret@yorksj.ac.uk

Dear Esmie,

RE: Perfectionism and Psychological Well-Being within the Footballing
Environment

REF: ES/28/04/2015

The research ethics committee has approved, without reservation, the above
research ethics submission of 28th April, 2015.

Yours sincerely

Appendix B
Study information, informed consent and debrief information

B.1 Study 2 and 3 information sheet template

Participant Information

I would like to invite you to take part in this research project, which is part of my work towards a PhD at York St John University. Please take the time to read the following information below and please ask if there is anything that is not clear or you have any questions.

Who is doing this research?

This research is being conducted by Esmie Smith, under the supervision of Professor Howard Hall and Dr Andrew Hill of the Faculty of Health and Life Sciences at York St John University.

What is the purpose of the study?

The aim of this research is to understand how your personality and your thoughts about the football environment may influence your well-being.

What will happen if I choose to take part?

You will be asked to complete [one/two questionnaire pack(s) which will take approximately 15 minutes across one/two time points]. The questions are multiple choice.

Do I have to take part? Can I change my mind once I have started?

You may decide whether or not to take part in this study. If you are over 18 and you do decide to take part you will be asked to sign a consent form before the questionnaire. If you are under 18, you and your parent/carer will receive a parental opt-out form (attached), and you will be asked to sign a willingness to participate form just before you complete the questionnaire. You are free to withdraw from the study within one month of filling in the questionnaire and do not have to give a reason.

Will my taking part in this study be kept confidential?

Yes. This research is anonymous and confidential and will only be accessed by the research team if you or others are at risk of harm, or in the event of the disclosure of illegal activity. Your personal details will not be disclosed to other parties, or used in the publication/presentation of this research. All hard copy data (questionnaires) will be stored in locked filing cabinets in accordance with University guidelines.

What will happen to the results of the study?

The results will be written up as part of my PhD project which may be published in a psychology journal and presented at conferences. <u>Names or any other identifying feature of individual participants will not be revealed.</u> We hope that when this study is finished it could provide useful information to those currently playing and working within football academies.

Are there any risks to my physical and psychological health in participating?

There are very minimal risks associated with participating in this study. There will be careful consideration of disclosure if there is an indication of risk of harm to self or others.

Thank you for taking the time to read this information. Please feel free to contact myself (Esmie) e.smith1@yorksj.ac.uk or my supervisors Prof Howard Hall h.hall@yorksj.ac.uk and Dr Andy Hill a.hill@yorksj.ac.uk if you have any further questions.

B.2 Study 2 and 3 parental consent form template

For those under the age of 18

Dear Parent/Carer,

I am a Sport Psychology PhD Student at York St John University within the Faculty of Health and Life Sciences. I am undertaking a study to investigate the relationship between being perfectionistic within the football environment and the impact this has on well-being. In line with York St John's ethical procedures to safeguard young people, I would like to ask for your permission for your child to participate in the study. Your child will be asked to complete a short questionnaire pack about being a perfectionist, [their perceptions of the football environment] and their well-being.

Your child will be asked to [complete the questionnaire pack at one/two time points which will take approximately 15 minutes to complete]. If you agree to allow your child to participate at the start of the study, you can still withdraw them within one month of data collection. All information collected will be treated confidentially. Moreover, your child will not be identifiable by name in any publication which may arise from the research.

Please complete the opt-out slip below and return it to the above address if you **do not give permission** for your child to participate in this research, or alternatively hand this form back to the coach and I will collect it on my return. Please ensure you return the letter **before [date]**, **otherwise it will be assumed that you give your consent**. If you would like any further information about the study, then please contact either myself, or one of my supervisors using the contact details below:

Yours Faithfully,

Esmie Smith   Prof Howard Hall   Dr Andrew Hill

e.smith1@yorksj.ac.uk h.hall@yorksj.ac.uk   a.hill@yorksj.ac.uk

Opt-Out Slip

I **do not** give permission for _____to take part in the

research being conducted. Signed _____(Parent/Carer)

B.3 Study 2 and 3 informed consent form template

INFORMED CONSENT FORM
(To be completed after the participant information sheet has been read)

Please read the following statements:

I confirm that I have read and understand the information sheet for this study.

I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

I understand that my participation is **voluntary** and that I am free to withdraw within one month of completing the questionnaire without giving any reason.

I understand that my data will be treated confidentially and any publication resulting from this work will report data that does **not** identify me.

I agree to participate in this study:

Your name: _____

Your signature: _____

Date: _____

Signature of Investigator: _____

B.4 Study 2 and 3 debrief sheet template

Why I'm undertaking the research: I am interested in understanding what it means to be a perfectionist within the football environment and how this personality characteristic may affect your well-being [over time]. There are also a number of other football academies in England taking part in this research so that we can gather this information and look for patterns/trends in the data.

By completing this questionnaire you have contributed to scientific knowledge and further understanding. This research will become part of my PhD research and we anticipate that it will also be published in a research journal and may be presented at conferences. We also hope that when this study is finished it could provide useful information to those playing and working within the footballing environment. Your personal information and the answers that you gave will remain confidential and will only be accessible by the research team.

If you require further support and guidance you may be eligible for psychological support at your club. Alternatively, if you would like to contact supporting services outside of the club you may wish to contact SupportLine (www.supportline.org.uk or tel 01708 765200), Get Connected (www.getconnected.org.uk or tel 0808 808 4994) or Young Minds (www.youngminds.org.uk**).**

If you have any concerns, questions or queries please do not hesitate to contact me (Esmie) on e.smith1@yorksj.ac.uk, alternatively you can contact my supervisors Professor Howard Hall on h.hall@yorksj.ac.uk and Dr Andrew Hill a.hill@yorksj.ac.uk

Thank you for your participation

B.5 Study 4 information sheet template

Participant Information Sheet

I would like to invite you to participate in this research project, which is part of my work towards a PhD at York St John University. Please take time to read the following information carefully. Please do not hesitate to get in touch if there is anything that is not clear, or if you require further information.

Who is doing this research?

This research is being conducted by Esmie Smith, under the supervision of Professor Howard Hall, Dr Andy Hill and Dr Nick Watson of the faculty of Health and Life Sciences.

What is the purpose of this study?

I am specifically interested in what it means to be a perfectionist in the professional football environment through discussing your experiences from your career. You will be asked to reflect on the challenges and setbacks you faced as a professional footballer and your thoughts and feelings associated with this.

Am I eligible to take part?

I am looking for (a) retired male professional footballers (e.g., International to Conference level) and (b) consider themselves to be a perfectionist specifically during their football career to participate in this study.

What will I have to do if I choose to take part?

Please contact me via email (e.smith1@yorksj.ac.uk) or telephone/text (07801887640) to let me know that you would like to take part. We will arrange a time to meet, which is convenient for you at a comfortable and private location. There will be one, single interview which will be audio recorded. The interview is expected to last no longer than one to two hours and is a one-off event. Throughout the data analysis I would like to keep in contact with you to discuss your interview transcript.

Will my participation in the project remain confidential?

Yes. This research is anonymous and confidential and will only be accessed by the research team unless you or others are at risk of harm, or in the event of the disclosure of illegal activity. Your personal details will not be disclosed to other parties, or used in the PhD project and publication/presentation of this research. Any information that you provide during the interview that may identify you will not be used in the PhD

project or publication/presentation of this research. Hard copy data will be stored in a locked cabinet and electronic data will be password protected.

What will happen to the results of the study?

The results will be written up as part of my PhD project which may be published in a psychology journal and presented at conferences. Names or any other identifying feature of individual participants will not be revealed.

Are there any advantages or disadvantages of taking part?

You may not feel comfortable talking about stressful times or sensitive issues that you have experienced during your career. Alternatively, you may find the project interesting and enjoy answering questions about your footballing career and discussing your mindset. We hope that when this study is finished it could provide useful information to those currently playing and working within the footballing environment.

Do I have to take part in the study? Can I change my mind once I have started?

Your participation in this project is entirely voluntary. You have been approached as you may be eligible to take part but this does not mean you have to. If you do not wish to take part you do not have to give a reason and you will not be contacted again. If you would like to participate you are free to withdraw from the study within one month of your interview if you change your mind.

If you know someone that may be interested in taking part….

As you can imagine with such specific criteria it is often difficult to find eligible participants. If you do know anyone else that may be interested in taking part that may fit these criteria please do send this information sheet to them. Thank you!

Thank you for taking the time to read this information. Please feel free to contact myself e.smith1@yorksj.ac.uk or my main supervisor Prof Howard Hall h.hall@yorksj.ac.uk if you have any further questions.

B.6 Study 4 consent form template

INFORMED CONSENT FORM

(To be completed after the participant information sheet has been read)

Please read the following statements:

I confirm that I have read and understand the information sheet for this study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

I understand that my participation is **voluntary** and that I am free to withdraw within one month of the interview without giving any reason.

I understand that this interview will be audio recorded and the audiotape material of me will be **used solely for research purposes.**

I understand that my data will be treated confidentially and any publication resulting from this work will only report data that does **not** identify me.

I freely give my consent to participate in this research study:

Your name:

_____

Your signature:

_____

Date:

_____

Signature of Investigator: _____

B.7 Study 4 debrief sheet template

Thank you for your time today- it is really appreciated!

Why I'm undertaking the research: There is limited qualitative research that investigates the relationship between perfectionism and the influence on psychological well-being in sport. In addition, much of the current research literature has looked at classifying an individual as a perfectionist as a result of their questionnaire scores. Therefore the aim of this research and today's interview was to investigate your perceptions as a self-labelled perfectionist and to discover how this has influenced you, either positively or negatively, during your footballing career through discussing your thoughts and experiences on challenges and setbacks that you have faced. This interview will become part of my PhD research and we anticipate that it will also be published in a research journal and may be presented at conferences. We will ensure that any interview data that we use will not identify you. I would also like to contact you once more to discuss your transcript. If you have any concerns, questions or queries please do not hesitate to contact me (Esmie) on e.smith1@yorksj.ac.uk, alternatively you can contact my main supervisor Professor Howard Hall on h.hall@yorksj.ac.uk.

Supporting Services

PFA
Tel (Manchester): 0161 236 0575
Tel (London): 0207 236 5148
Email: wellbeing@thepfa.co.uk

Sporting Chance Clinic
Tel: 0870 220 0714
Email: info@sportingchanceclinic.com
Web: www.sportingchanceclinic.com

Anxiety UK
Helpline: 08444 775 774 (Monday-Friday 9.30am-5.30pm)
Web: www.anxietyuk.org.uk

British Association for Behavioural and Cognitive Psychotherapies (BABCP)
Tel: 0161 705 4304
Web: www.babcp.com

British Association for Counselling and Psychotherapy (BACP)
Tel: 01455 883 316
Web: www.bacp.co.uk

Depression Alliance
Tel: 0845 123 2320
Web: www.depressionalliance.org

Help with Stress
Web: www.helpwithstress.org

MIND – the mental health charity
Tel: 0845 766 0163
Contact Mind infoline: 0300 123 3393
Email: info@mind.org.uk
Web: www.mind.org.uk

NHS
Tel: NHS on 111, 24 hours a day, 7 days a week
Web: http://www.nhs.uk

Samaritans
Helpline: 08457 90 90 90
Email: Jo@samaritans.org
Web: www.samaritans.org

Supportline
PO Box 1596, Ilford, Essex, IG1 3FW
Web: www.supportline.org.uk

Time to Change
Web: www.time-to-change.org.uk

Appendix C
Instruments and interview script

C.1 Demographics (study 2 and 3)

Initials: _____   Date of Birth: _____

Age: _____

Club that you represent: _____

Number of years at this club or represented this club: _____

At what age did you join an academy: _____

Number of hours spent training per week: _____

In comparison to all other activities in which you take part in, how important do you consider football to be for you?

Not at all important   Moderately important   Extremely important

   1   2   3   4   5   6   7   8   9   10

C.2 Multidimensional perfectionism (study 2 and 3)

The following items are statements concerning personal characteristics that some people demonstrate when they are **participating in football.** Please read each of the statements carefully, and indicate the extent to which you personally agree or disagree with each statement. **Please circle one answer for each statement.**

Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

In football….

1. **When I am working on something, I cannot relax until it is perfect.**   1 2 3 4 5 6 7
2. I find it difficult to meet others people's expectations of me.   1 2 3 4 5 6 7
3. **One of my goals is to be perfect in everything I do.**   1 2 3 4 5 6 7
4. I never aim for perfection in football.   1 2 3 4 5 6 7
5. **Those around me readily accept that I can make mistakes too.**   1 2 3 4 5 6 7
6. The better I do, the better I am expected to do.   1 2 3 4 5 6 7
7. **I rarely feel the need to be perfect.**   1 2 3 4 5 6 7
8. Anything that I do that is less than excellent will be seen as poor performance by those around me.   1 2 3 4 5 6 7
9. **I strive to be as perfect as I can be.**   1 2 3 4 5 6 7
10. It is very important that I am perfect in everything I attempt.   1 2 3 4 5 6 7
11. **I strive to be the best at everything I do.**   1 2 3 4 5 6 7
12. The people around me expect me to succeed at everything I do.   1 2 3 4 5 6 7
13. **I demand nothing less than perfection of myself.**   1 2 3 4 5 6 7
14. Others will like me even if I don't excel at everything.   1 2 3 4 5 6 7
15. **It makes me uneasy to see errors in my performance.**   1 2 3 4 5 6 7
16. Success means that I must work even harder to please others.   1 2 3 4 5 6 7
17. **I am perfectionistic in setting goals.**   1 2 3 4 5 6 7
18. Others think I'm OK even when I do not succeed.   1 2 3 4 5 6 7
19. **I feel that people are too demanding of me.**   1 2 3 4 5 6 7
20. I must work to my full potential at all times.   1 2 3 4 5 6 7
21. **Although they may not show it, other people get very upset with me when I**   1 2 3 4 5 6 7
22. I do not have to be the best at whatever I do.   1 2 3 4 5 6 7
23. **My family expects me to be perfect.**   1 2 3 4 5 6 7
24. I do not have very high goals for myself.   1 2 3 4 5 6 7
25. **My parents rarely expected me to excel in all aspects of my life.**   1 2 3 4 5 6 7
26. People expect nothing less than perfection from me.   1 2 3 4 5 6 7
27. **I set very high standards for myself.**   1 2 3 4 5 6 7
28. People expect more from me than I am capable of giving.   1 2 3 4 5 6 7

29. I must always be successful in activities that are important to me.	1	2	3	4	5	6	7
30. People around me think that I am still competent even if I make a mistake.	1	2	3	4	5	6	7

C.3 Coach-created motivational climate (study 3)

This list describes what coaches say or do to the players on their team. When giving your answers, think about what **your main coach** normally says or does. What do **you** think it was like on this team most of the time **during the last 3-4 weeks?**

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
	1	2	3	4	5

1.	**My coach encouraged players to try new skills.**	1 2 3 4 5
2.	My coach was less friendly with players if they didn't make the effort to see things his/her way.	1 2 3 4 5
3.	**My coach gave players choices and options.**	1 2 3 4 5
4.	My coach tried to make sure players felt good when they tried their best.	1 2 3 4 5
5.	**My coach substituted players when they made a mistake.**	1 2 3 4 5
6.	My coach thought that it is important that players participate in this football because the players really want to.	1 2 3 4 5
7.	**My coach was less supportive of players when they were not training and/or playing well.**	1 2 3 4 5
8.	My coach could really be counted on to care, no matter what happened.	1 2 3 4 5
9.	**My coach gave most attention to the best players.**	1 2 3 4 5
10.	My coach shouted at players for messing up.	1 2 3 4 5
11.	**My coach made sure players felt successful when they improved.**	1 2 3 4 5
12.	My coach paid less attention to players if they displeased him or her.	1 2 3 4 5
13.	**My coach acknowledged players who tried hard.**	1 2 3 4 5
14.	My coach really appreciated players as people, not just as footballers.	1 2 3 4 5
15.	**My coach only allowed something we like to do at the end of training if players had done well during the session**	1 2 3 4 5
16.	My coach answered players' questions fully and carefully.	1 2 3 4 5
17.	**My coach was less accepting of players if they disappointed him or her.**	1 2 3 4 5
18.	My coach made sure that each player contributed in some important way.	1 2 3 4 5
19.	**My coach had his or her favourite players.**	1 2 3 4 5
20.	My coach only rewarded players with prizes or treats if they had played well	1 2 3 4 5
21.	**My coach only praised players who performed the best during a match.**	1 2 3 4 5

22.	When my coach asked players to do something, he or she tried to explain why this would be good to do so.	1	2	3	4	5
23.	**My coach made sure everyone had an important role on the team.**	**1**	**2**	**3**	**4**	**5**
24.	My coach shouts at players in front of others to make them do certain things.	1	2	3	4	5
25.	**My coach thought that only the best players should play in a match.**	**1**	**2**	**3**	**4**	**5**
26.	My coach threatened to punish players to keep them in line during training.	1	2	3	4	5
27.	**My coach listened openly and did not judge players' personal feelings.**	**1**	**2**	**3**	**4**	**5**
28.	My coach let us know that all the players are part of the team's success.	1	2	3	4	5
29.	**My coach mainly used rewards/praise to make players complete all the tasks he/she sets during training.**	**1**	**2**	**3**	**4**	**5**
30.	My coach encouraged players to help each other learn.	1	2	3	4	5
31.	**My coach tried to interfere in aspects of players' lives outside of this football.**	**1**	**2**	**3**	**4**	**5**
32.	My coach thought that it is important for players to play football because they (the players) enjoy it.	1	2	3	4	5
33.	**My coach favoured some players more than others.**	**1**	**2**	**3**	**4**	**5**
34.	My coach encouraged players to really work together as a team.	1	2	3	4	5

C.4 Athlete burnout (study 2 and 3)

The following items are concerned with how you feel at the moment about football. Please read each of the statements listed below and indicate how much you personally agree with each one.

Almost never	Rarely	Sometimes	Frequently	Almost always
1	2	3	4	5

1. I'm accomplishing many worthwhile things in football.	1	2	3	4	5
2. I feel so tired from my training that I have trouble finding the energy to do other	1	2	3	4	5
3. The effort I spend in football would be better spent doing other things.	1	2	3	4	5
4. I feel overly tired from my football participation.	1	2	3	4	5
5. I am not achieving much in football.	1	2	3	4	5
6. I don't care as much about my football performance as I use to.	1	2	3	4	5
7. I am not performing up to my ability in football.	1	2	3	4	5
8. I feel "wiped out" from football.	1	2	3	4	5
9. I'm not into football like I use to be.	1	2	3	4	5
10. I feel physically worn out from football.	1	2	3	4	5
11. I feel less concerned about being successful in football than I use to.	1	2	3	4	5
12. I am exhausted by the mental and physical demands of football.	1	2	3	4	5
13. It seems no matter what I do, I don't perform as well as I should.	1	2	3	4	5
14. I feel successful at football.	1	2	3	4	5
15. I have negative feelings towards football.	1	2	3	4	5

C.5 Depressive symptoms (study 2 and 3)

Below is a list of the ways you might have felt or behaved. Please tell me how often you have felt this way **during the past week**.

Rarely or none of the time (Less than 1 day) 1	Some or a little of the time (1-2 days) 2	Occasionally or a moderate amount of time (3-4 days) 3	Most or all of the time (5-7 days) 4

1. I was bothered by things that usually don't bother me.	1	2	3	4
2. I did not feel like eating; my appetite was poor.	1	2	3	4
3. I felt that I could not shake off the blues even with help from my family or friends.	1	2	3	4
4. I felt I was just as good as other people.	1	2	3	4
5. I had trouble keeping my mind on what I was doing.	1	2	3	4
6. I felt depressed.	1	2	3	4
7. I felt that everything I did was an effort.	1	2	3	4
8. I felt hopeful about the future.	1	2	3	4
9. I thought my life had been a failure.	1	2	3	4
10. I felt fearful.	1	2	3	4
11. My sleep was restless.	1	2	3	4
12. I was happy.	1	2	3	4
13. I talked less than usual.	1	2	3	4
14. I felt lonely.	1	2	3	4
15. People were unfriendly.	1	2	3	4
16. I enjoyed life.	1	2	3	4
17. I had crying spells.	1	2	3	4
18. I felt sad.	1	2	3	4
19. I felt that people disliked me.	1	2	3	4
20. I could not get "going."	1	2	3	4

C.6 Demographics (study 4)

Demographic Information

Please provide us with some brief details about yourself:

Initials: _____

Date of birth (dd/mm/yy): _____   Age: _____

Nationality: _____

How long did you play professional football for? _____ (years/months)

At what age did you retire from professional football? _____

Please state which level(s) you have competed at (Please circle the options that apply)

International   Premiership   Championship   League One   League Two
Conference

Other (please specify)

C.7 Interview script (study 4)

Interview Guide

0. Background:

Tell me about how you became interested in football?

Tell me about your professional career in football?

What do you consider to be the highlights of your career?

When did you retire from professional football?

    a.   What led to your retirement?

1a. Perfectionism- Conceptual

Were you a perfectionist during your football career?

    a.   What was it about yourself that made you label yourself a perfectionist during your career?

Did other people refer to you as a perfectionist during this time?

    a.   What do you think it was that made others label you as a perfectionist?

What would you say were the main features of being a perfectionist?

    a.   What features of being a perfectionist do you believe are most relevant to the football environment?

How do you think you came to be a perfectionist?

    a.   What influence, if any, do you think the football environment contributed to becoming perfectionistic

1b. Impact of perfectionism in the footballing environment

What influence did being a perfectionist have, if any, on you during your career as a footballer? (Hill similar)

    a.   What positive influences, if any, did it have?

    b.   What negative influences, if any, did it have?

What influence did being a perfectionist have, if any, on your sense of wellbeing, mental health and your overall mindset during your career as a footballer?

    a.   What positive influences on your sense of wellbeing, mental health and overall mindset, if any, did it have?

    b. What negative influences on your sense of wellbeing, mental health and overall mindset, if any, did it have?

2. Influence of perfectionism when dealing with challenge, setbacks, and times of stress during their football career.

What aspects of professional football did you find stressful?

(Stress probes/prompts: Training/competition loads, individual and team performance demands, making errors, injuries/career threatened-end of career / pressure from the coach, teammates, family, media and spectators)

    a. What role, if any, did being a perfectionist play in terms of the stress you experienced?

What were the main challenges and difficulties you encountered in professional football? (New)

    a. How did being a perfectionist play a role in these experiences?

What were the main setbacks you encountered in professional football?

    a. What role, if any, did being a perfectionist play?

    b. How did these setbacks affect you at the time?

During the difficult times in your professional football career, what were your main thoughts and feelings?

    a. How were these thoughts and feelings influenced by being a perfectionist, if at all?

How did you cope with these setbacks and difficult times?

    a. What role, if any, did being a perfectionist play in how you coped?

3. Other

Is there anything else you would like to add regarding being a perfectionist in the football environment that we haven't covered?