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An investigation into the relationship between the motivational climate, coach behaviours and predicting burnout; Does coach-athlete relationship and athlete identity mediate the relationship?

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Abstract.

This study aimed to investigate the relationship between the motivational climate, coach behaviours and predicting burnout, and to identify if the coach-athlete relationship and athlete identity mediated the relationship. Research has provided evidence that the perception of the motivational climate can influence levels of burnout (Lemyre *et al.* 2008). Additionally, the literature perceptions of coaching styles and behaviours influence athletes' burnout levels (Gould et al., 1996). Coach-athlete relationship was found to be negatively related to burnout (Gustafsson et al., 2008) and athlete identity has been shown to protect against burnout symptoms (Martin & Thelma, 2013). It was hypothesized that the coach-athlete relationship will significantly mediate the relationship between the motivational climate, coach behaviours and burnout. It was also hypothesised that athlete identity would mediate the relationships. Eighty two mixed gender University sport students (M= 21.44, SD= ±4.23) from various sports were used in this study. Data was collected using the Athlete Burnout Questionnaire (ABQ), the Perceived Motivational Climate in Sport Questionnaire- 2 (PMCSQ-2); the Leadership Scale for Sport (LSS) Questionnaire; CART-Q questionnaire and the Athlete Identity Measurement Scale (AIMS). A hierarchical multiple regression analysis showed that coach-athlete relationship fully mediated the relationship between motivational climate and physical and emotional exhaustion (R^2_{cha}= 0.01, $F_{3,227}$ = 3.06, P = N/S) and partially mediated both reduced sense of accomplishment (R^2_{cha}= 0.15, $F_{3,227}$ = 10.10, P<0.01**) and devaluation (R^2_{cha}= 0.08, $F_{3,227}$ = 9.01, P<0.05*). Whilst partially mediated the relationship between coach behaviours and all three burnout subscales. Athlete identity was found to fully mediate the relationship between motivational climate and physical and emotional exhaustion (R^2_{cha}= 0.01, $F_{3,227}$ = 2.39, P= N/S), whilst partially mediating reduced sense of accomplishment and devaluation. Social identity was found to partially explain the relationship between coach behaviours and all three burnout subscales. The present study expanded research on the relationship between the motivational climate, coach behaviours and burnout, and proved that coach-athlete relationship and athlete identity could provide an explanation to the interaction. The results provide support to coaches that they should be aware of the importance of building effective coach-athlete relationships, and providing the opportunity for athletes to adopt social identities by manipulating the motivational climate and developing autonomy supportive coaching behaviours. Future research on the relationship between the motivational climate, coach behaviours and burnout should consider the effects of the coach-athlete relationship and athlete identity on the relationship.

CHAPTER ONE:

INTRODUCTION

'Raheem Sterling has asked not to feature in England's starting 11 for the Euro 2016 qualifier against Estonia after expressing he was "a little tired"… The young Liverpool striker could be experiencing the early symptoms of burnout' (The Guardian, 2014)

The above quote was written in the Guardian (2014) after speculation over England striker Raheem Sterling experiencing early signs of burnout. The youngster has previously been recognised as the best u21s player in Europe and has recently signed a contract worth £49,000,000. Raheem has achieved many accolades in his early career including the Liverpool 'young player of the year' award twice in consecutive seasons (2013/14, 2014/15) and a 'Golden Boy' award which he received as being the perceived top football player in Europe. Prior to England's Euro 2016 qualifier match, Raheem told coach Roy Hodgeson that he was feeling tired and didn't want to be selected for the team. Raheem was also given a break period out of football the season prior (December 2014) by Brendan Rodgers as the coach admitted that there were dangers attached to his unexplainable tiredness. This pattern of fatigue is a cause for concern for the young footballer as he is still only 20 years of age and has great potential for his football future.

Even elite athletes struggle to cope both physically and psychologically with the demands of their sport (Gould et al., 1996). Athletes experience low motivation levels and lose ability to cope with the demands placed upon them which leads to physical and psychological disengagement (Smith, 1986). The above example is someone who appears to be showing early signs of fatigue, which might be linked to symptoms of a category of behaviour which is known as 'burnout'. Its explanation is when athletes physically and psychologically push themselves too far, and feel that their commitment to the sport is no longer bringing them any sort of achievement. Once athletes experience these feelings of separation towards their sport, they will consequently be led to completely withdraw from sport. Raheem Sterling, 20 finds himself in a vulnerable position which could potentially force him to experience such behaviour as burnout as it is known to be most common in young elite athletes (Gould et al. 1996). There is a spreading concern amongst the sporting community about the dangers of young individuals dropping out of sport, which has caused many researchers to try and develop knowledge around the causes of athlete burnout (e.g. Gould et al., 1996).

There is a significant importance on preventing the development of burnout as it has been shown to have negative effects, leading athlete's to experience psychological disengagement with their sport, and eventually complete withdrawal (Smith, 1986; Creswell & Eklund, 2006). Preventing the development of athlete burnout is crucial to improving sport participation levels and creates opportunities for athletes to achieve their potential. In order to help prevent the development of burnout in athletes, it is important to look at both situational and personal factors which might predict burnout. The motivational climate can have positive and negative effects on athlete's motivation levels; athlete's perceptions of the motivational climate has been found to correlate with predicting the determinants of burnout (Lemyre, Hall & Roberts, 2008). Coaches can have a powerful influence on an athletes sporting experience (Vallerand & Losier, 1999), therefore coaches need to be informed of the potential risks their athletes face. Coach's behaviours can effect an athlete's motivation towards participation; coaches are able to establish certain behaviours in athletes by the way in which they deliver training sessions through their leadership style and make decisions in training and competition situations (Keegan et al, 2013). Furthermore, the coach-athlete relationship has been found to have significant importance on athletes' motivation and performance (Mageau & Vallerand, 2003); therefore the coach-athlete relationship may be an important variable to consider in relation to athlete's motivation and may protect against burnout symptoms. However, according to Chang et al. (2007) both personal and situational factors need to be considered when predicting burnout. It has been shown that athletes who worry about poor performances and underachieving in their role as an athlete, and feel that their identity is solely as an athlete are more susceptible to (e.g. overtraining) which makes them more susceptible to symptoms of emotional and physical exhaustion (Martin & Thelma, 2013).

The evident influence of athlete's motivation levels and the importance of coach behaviours in influencing athlete's behaviours through the climate which they set illustrates the importance of looking at motivational climate and coach behaviours (situational). The identity of the athlete has also been shown to be linked with athlete burnout symptoms which additionally illustrates the importance of investigating athlete identity as a personal factor. The evident influence of the coach-athlete relationship on motivation levels highlights the importance of considering this variable when predicting burnout which may also be found to protect against burnout symptoms, which promotes an interesting case for further research.

CHAPTER TWO:

LITERATURE REVIEW

2.1 Athlete Burnout.

'Burnout' is a term which is broadly used in sport to describe when athletes demonstrate a lack of motivation quantity and quality, along with a loss of energy in response to emotional and social stressors they experience (Creswell & Eklund, 2006; 2007). Furthermore, once athletes become exhausted as a result of excessive training, burnout signifies a negative assessment of the self and the sporting experience (Lemyre, Treasure & Roberts, 2006). Athlete's burn out due to a negative shift in motivation; when athletes experience high motivation levels and personal investment, there is also a likelihood of stress (Gould, Udry, Tuffey & Loehr, 1996). Over time, athletes fail to endure with the constant appraisal due to the personal expenditure caused in their sport is considered to lead to negative outcomes, with athlete's finally experiencing psychological and physical disengagement (Smith, 1986). When athletes declare they are 'burned out' they experience feelings of passionate disengagement with their sporting activity which is characterised by a lack of motivation and lethargy, if not complete withdrawal (Creswell & Eklund, 2006). These individuals are no longer psychologically concerned with their sport due to experiencing continuous competitive pressure and experience emotional and physical withdrawal due to excessive amounts of stress (Smith, 1986; Gould et al., 1996). Gustafsson, Kentta, Hassmen & Lundgvist (2007) found that in some cases, the implications were more serious with athletes suffering from health issues as a result of burning out from sport.

Early theoretical models of burnout adapted a stress perspective through the use of the cognitive-affective stress model (Smith, 1986). The model indicates that burnout may be one potential aftereffect of chronic stress (Raedeke, 1997). The stress-related strain model suggests athlete burnout includes both a psychological and physical driven strain. The psychological strain contains two components, one which includes personal factors such as personality to develop burnout, and the other focuses on situational interests such as pressure from parents, coaches, or significant others. Whilst the physical strain is the physiological response to the appraised psychological stressors (Gould et al., 1996; Gustafsson et al., 2007). Following on, Coakley (1992) argued that although stress is heavily involved in burnout, it isn't the cause of burnout, but only a symptom (Gould et al., 1996), and so proposed a unidimensional identity development and external control model. The model suggests that the cause of burnout in young athletes is linked to the social structure of high performance sport which have autonomy and identity effects. Coakley (1992) suggested the social structure of sport can result in the development of a narrowed unidimensional identity and causes solitary focus on sport success. The framework limits a

young athlete's ability to oversee stressful situations and which can result in maladaptive efforts to promote autonomy such as declining support from significant others (Black & Smith, 2007) which can be detrimental in causing stress contributing to burnout symptoms.

The most widely accepted definition of burnout describes burnout as 'a psychological syndrome of emotional exhaustion, depersonalisation and reduced personal accomplishments that can occur among individuals who work with people in some capacity' (Maslach and Jackson, p.134, 1984). Raedeke (1997) argued that the definition was one dimensional and needed to be multidimensional, and so modified it to include a definition which relates to sports performance, which from an athlete's perspective is the most important element of sport. Maslach and Jackson's (1984) conceptual definition of athlete burnout was modified and described a multidimensional syndrome which is characterised by three stages; emotional and physical exhaustion, devaluation of sport participation, and a reduced sense of accomplishment which have been found as predictors of burnout (Raedeke, 1997; Raedeke & Smith, 2001). *Emotional and physical exhaustion* is characterised by a perception of being drained of energy due to the constant demands of sport participation and the impression of continually falling short of performance requirements (Creswell & Eklund, 2005). *Devaluation of sport participation* relates to a lost interest in sport and a reduced sense of sporting achievement. Leymre et al. (2008) highlighted that athletes who devalue their sport no longer care or cooperate, and the things they once valued are now completely diminished. The final predictor of burnout is *reduced sense of accomplishment* which represents a perceived drop in performance standards and lack of goal achievement. Although burnout is characterised by these three stages, burnout can't be categorised and these signs and symptoms exist along a continuum meaning the earlier the symptoms are noticed, to more chance of avoiding burnout (Raedeke & Smith, 2001).

In relation to Smiths (1986) cognitive stress model, who explains that burnout includes both personal and situational factors, it is important to understand the contributing factors which lead to athlete burnout. Coakleys (1992) model explains how the social structure of sport can result in the development of a narrowed unidimensional identity (personal) which can cause athletes to feel secluded within their sport. Lemyre, Roberts & Stray-Gundersen (2007) concluded that in order to fully understand why athletes burn out, it is important to understand the motivational climate (situational) which these individuals are in. Significant others' (i.e. coach) behaviours and attitudes can impact on athlete's motivation; and therefore burnout characteristics (Taylor & Wilson, 2005). Existing research has also

confirmed that the athlete's perception of the motivational climate can impact burnout levels (Lemyre et al., 2008).

2.2 Motivational Climate.

Early research by Nicholls (1989) introduced and developed his theory of achievement motivation to see if performers could optimise their motivation levels in different achievement settings. The theory suggest individuals need to engage in achievement situations in order to demonstrate competence (Nicholls 1989; Ames 1992). Vasou, Ntoumanis & Duda (2005) study on young athletes stated that in order to understand motivation amongst young athlete's, it is important to study the context of their goal-directed actions to focus on the demonstration of competence (Nicholls, 1989). The first goal orientation, formally known as a *Task* Orientation becomes evident when perceptions of competence are self-attributed and based upon maximum effort and improvement. The other goal orientation, also known as *ego* orientation is based upon social comparison and demonstrating competence through superior ability over others (Nicholls, 1989; Vasou et al., 2005).

According to Ames & Archer (1988) there are two different types of motivational climate, a *mastery/task* involving climate and a *performance/ego* involving climate. A climate where athletes perceive they will be punished, receive negative feedback and feel pressure to outperform others is described as a *performance or* '*ego*' involving climate. (Newton & Duda, 1999). This type of climate fosters the encouragement of social comparison and achievement evaluation, which creates worry and doubt in an athlete's mind about their ability to perform compared to others (Nicholls, 1989; Vasou et al., 2005). Whereas if learning is valued, athletes focus on their own personal accomplishments and coaches encourage athletes to aspire and achieve then that is known as a *mastery or 'task'* involved climate. Athletes who perceive a task-involved climate have been known to be associated with enjoyment, fun and interest in their sport (Newton & Duda, 1999).

2.3 Motivational Climate and Burnout.

Within the current literature it has been observed that athlete's perceptions of the motivational climate significantly correlates with predicting the determinants of burnout (Vazou et al., 2005; Lemyre et al., 2008). Results from Vazou, Ntoumanis & Duda (2006) study indicated that athlete's perceiving a mastery/task involved climate expressed higher levels of physical self-worth, enjoyment and effort. These findings were also consistent with Newton and Duda (1999) study who reported the affiliation between a task-involved climate and athletes experiencing enjoyment. Additionally, a study by Smith, Gustafsson and

Hassmen (2010) found that greater perceptions of a mastery/task involved motivational climate was significantly associated with lower burnout perceptions and supported an adaptive motivational profile. In contrast, the study by Leymre and his colleagues (2008) found that two of the three predictors of burnout (emotional exhaustion and devaluation of sport) significantly and positively correlated with an ego/performance climate. Interestingly, Smith et al. (2010) found that all three predictors of burnout significantly correlated when athlete's perceived an ego/performance climate focusing on intra-team conflict which promoted a maladaptive motivational profile and left athletes emotionally and physically exhausted. Vazou et al. (2006) results supported these findings as they found that athletes involved in a climate enforcing intra-team conflict displayed reduced sense of accomplishments as the athlete's success was reliant on uncontrollable external factors (ability of other athletes) which doesn't allow them to focus on their own ability, making it harder to accomplish personal goals. Athlete's that experience low perceptions of ability and enjoyment will eventually start to devalue their sport altogether (Leymre et al., 2008).

A quantitative study by Ethington, Smith, Li & Fry (2006) on female high school basketball performers established that athletes' perceptions of their coaches' behaviours contribute significantly to their perceptions of the climate. Reinboth & Duda (2006) add that a key social environmental component assumed to breed athlete's needs is the coach created motivational climate. Coaches are responsible for implementing training sessions, grouping athletes, providing recognition and evaluating performance which can develop athlete's behaviours, which has an essential impact on athlete's motivation levels (Reinboth & Duda, 2006). Athletes who perceive their coaches are providing encouragement and positive feedback, setting targets and appreciating their hard work has been found to be linked with a perceived task-involving climate. Diversely, when athletes perceived more negative feedback and punishments they were more likely to perceive an ego orientated climate. (Ethington et al., 2006). Although coaches can both positively and negatively influence the perceived climate through their behaviours and attitudes towards athletes, they are still however a dominant figure in influencing the motivational climate for their athletes (Reinboth & Duda, 2006). In relation to burnout, results from Smith et al's. (2010) study found that greater perceptions of a mastery/task involved motivational climate was significantly associated with lower burnout perceptions. Therefore clarifying the significant importance of the coaches' behaviours in creating the motivational climate and determining athlete burnout symptoms.

2.4 Coach Behaviours.

Within sport, coaches have a vital role in creating an athletes' sporting experience and their different coaching styles influence athletes motivation; coaches have a powerful situational influence over an athlete's sporting experience by the way in which they behave, which can have an effect on athlete's motivation levels (Vallerand & Losier, 1999). Coaches influence athlete's motivation through adopting unique leadership styles, intuitive responses and pre-performance behaviours (Keegan, Harwood, Spray & Lavelle, 2013). Keegan et al's (2013) qualitative study pinpointed that coaches can influence athlete's motivation by supporting autonomy style leadership behaviours and relatedness between athletes such as making decisions transparent and responding to athlete's ideas. Different coaching styles which coaches employ have the potential to affect athletes' sporting experiences (Vallerand & Losier, 1999). Mageau & Vallerand (2003) identified that coaches who value the athlete's opinion, allow the athletes to have an input into the decision making process and acknowledge athlete's thoughts and feelings are creating an *autonomy* supportive environment. Early research by Vallerand & Pelletier (1985) on young adolescent swimmers found that athletes who perceive their coaches to display a more autonomous style were associated with higher perceived competence and intrinsic motivation than those who perceived their coach to be more controlling. Additionally Mageau & Vallerand's (2003) results also suggested when coaches support their athletes' autonomy, the athletes consequently experience greater performance, increased persistence and enhanced psychological well-being. Whereas when a coach is using authority and assertive behaviours to pressurise athlete's too physically and psychologically behave in a certain manner, they are then creating a *controlling* interpersonal environment. Consequently when athletes perceive their coach as controlling, it results in amotivation in athletes and increases their probability of dropping out of sport (Pelletier, Fortier, Vallerand & Brière, 2001).

2.5 Coach Behaviours and Burnout.

The previously mentioned research explaining the influence of coach behaviours on athlete's motivation has suggested that coaches' who adopt a democratic leadership style, whereby they share the decision making and allow athletes to feel a sense of control, has a beneficial impact on athlete's motivation (Vallerand & Losier, 1999; Mageau & Vallerand, 2003). Coaches are also known to control training loads and the amount of recovery time which are provided for athletes, which in relation to burnout may be a cause for physical and emotional exhaustion (Vealey, Armstrong, Comar & Greenleaf, 1998). Vealey et al's. (1998) study also stated that communication and feedback styles of coaches such as providing

praise or in some cases dispraise, establishes a motivational setting for the team which may catalyse symptoms of burnout in athletes. Vealey's (1998) study on female collegiate athletes found that athletes who scored higher for devaluation and physical and emotional exhaustio, perceived there coaches emphasised dispraise, adopted an autocratic coaching style and emphasised success as paramount, more so than the development of athletes. Whereas, athletes with stronger feelings of accomplishment and a strong coach-athlete relationship perceived their coaches to be less autocratic and development oriented. These findings are persistent in other studies which have indicated that athletes' perceptions of the coaching style influenced their level of burnout (Gould et al., 1996). Gustafsson, Hassmen, Kentta & Johansson (2008) study also found that athletes perceiving high pressure, high expectations, and low social support from the coach, along with conflict with the coach have also been associated with athlete burnout. This finding clearly highlights the importance of athlete's perceptions of coach's behaviours when predicting burnout, and also suggests the influence of the coach-athlete relationship when considering burnout.

2.6 Coach-Athlete Relationship.

The relationship between coach and athlete has been identified as an essential factor when considering athletes' motivation and performance levels (Mageau & Vallerand, 2003). Keegan et al's (2013) identified the importance of the relationship between the coach and the athlete and identified the coach-athlete relationship social facets contain factors connected to the emphasis of friendship, dedication and taking interest in your athletes. The key aspects that contribute to a strong successful coach–athlete relationship are respect, collective trust and mutual support (Lafreniere, Jowett, Vallerand, Donahue, Lorimer, 2008). Additionally, Kimball (2007) distinguished that having a trusting relationship with a coach whereby athletes are able to express thoughts and feelings, and share personal matters is extremely important for motivation. Whereas when athletes perceive conflict and negativity, it can have a detrimental impact and can influence a negative shift on motivation levels. Davis & Jowett (2014) stressed the importance of building an effective quality coach–athlete relationship which is crucial in determining athletes' satisfaction, motivation and performance.

Due to the dominant influence of the coach-athlete relationship on athlete's motivation (Mageau & Vallerand, 2003), it seems that incorporating this variable when investigating athlete burnout is essential. In relation to burnout, results from Gustafsson et al's (2008) study found that the quality of the coach-athlete relationship in terms of closeness, commitment and complementarity was negatively linked with the three dimensions of athlete

burnout. This was the first study to demonstrate that the perception of the quality of the coach-athlete relationship is linked, directly and indirectly, to athlete burnout, which provides a rationale for the current proposed study to investigate whether the coach-athlete relationship can serve to protect against burnout symptoms.

2.7 Athlete Identity.

Athlete identity has been defined as a multidimensional organisational process that is associated with how individuals socially behave and view themselves in different situations (Shavelson & Bolus, 1982). For example, the classic student athlete has to balance a variety of identities, of which being the student, the athlete, the boyfriend/girlfriend or the son/daughter; the student athlete chooses which identity to accommodate in different situations (Burns, Jasinski, Dunn & Fletcher, 2012). Brewer & Cornelius (2001) explained athlete identity as the extent to which an individual identifies with the athlete role. Individuals with high athletic identity appoint lots of their attention on their success or failure in the athletic domain and may accommodate large parts of their self-worth to their achievements. A study by Gustafsson et al. (2008) study identified that individuals with high athletic identity was associated with higher burnout levels. Diversely, another study with adolescent athletes found no significant relationship between athletic identity and burnout (Gould et al., 1996). More importantly, Black & Smith (2007) found athlete identity to be negatively related to burnout and athletes with higher levels of athletic identity were associated with lower levels of burnout. Researchers say that this may be due to athlete identity being measured as a unidimensional construct, and so factor analysis of the AIMS scale (Brewer & Cornelius, 2001) provided the identification of three subsequent dimensions.

The introduction of the athlete identity measurement scale (AIMS) was introduced by Brewer & Cornelius (2001). The scale identified three specific factors of athlete identity; *social identity*, *exclusivity*, and *negative affectivity* (Brewer & Cornelius, 2001). Social identity represents how the athlete believes he or she is viewed in the eyes of significant others. Exclusivity is the extent an athlete's identity classifies other self-concepts which results in a self-image exclusively as an athlete. The final component, negative affectivity is when an athlete worries about poor performance or not being able to achieve in their role as an athlete (Brewer & Cornelius, 2001). Black & Smith (2007) identify that exclusivity and negative affectivity relate to possible negative forms of identity, whereas the social identity aspect may be related to more positive forms of identity.

2.8 Athlete Identity & Burnout.

Research that has been conducted on athletic identity and burnout was primarily based on Coakley's (1992) unidimensional identity development and external control model. Coakley (1992) suggested that burnout should not be characterised as a negative or problematic construct but more as a social issue. Coakley (1992) advised that young individuals who finds themselves deeply invested in their athletic role and don't adopt participation in other activities may develop a unidimensional self-identity (see themselves as athletes only). Athletes with a unidimensional athletic identity who find themselves not achieving when it is expected of them might experience burnout symptoms (Martin & Thelma, 2013).

In a recent study by Martin & Thelma (2013) it was observed that individuals with high athletic identity place significant importance on their success or failure within their sports, causing athletes to attribute their self-worth to these accomplishments. In relation to burnout, individuals who experience low self-worth, start to devalue their sporting experience, and sometimes completely withdraw from their sport (Leymre at al., 2008). The study on student athletes found that individuals with larger social identities united with harmonious passion were found to be protected against burnout symptoms. In contrast, a negative athletic identity (negative affectivity) was associated with more hazardous behaviour such as overtraining, which was linked to symptoms of physical and emotional exhaustion (Martin & Thelma, 2013). Due to the mixed findings from previous research as to whether athlete identity is associated with burnout, and the partial findings that it can serve to protect against burnout, this provides a justification to investigate whether athlete identity might mediate the relationship between the motivational climate, coach behaviours and burnout.

2.9 Justification for study.

Existing research into the relationship between the perceptions of the motivational climate and its influence on predicting burnout (Vasou et al., 2005; Vasou et al., 2006; Leymre et al., 2008; Smith et al., 2010) has found that creating a mastery/task oriented environment will negatively predict the development of burnout in athletes. It has also been identified within the current literature that athlete's perceptions of coach behaviours influence the perceived climate; coaches providing positive and encouraging feedback, setting targets and appreciating athletes' hard work was associated with the athletes' perceiving a mastery climate (Ethington et al., 2006). Additionally, the coach-athlete relationship has been stated as an essential influence on athletes' motivation levels (Mageau & Vallerand, 2003; Kimball, 2007). Finally, as mentioned previously it's important to also consider personal factors (Chen

et al., 2007) in predicting burnout, athletic identity has been found to serve as a protector against burnout when high levels of positive social identity combined with harmonious passion are observed.

Previous research has only been conducted with female only participants (Martin & Thelma, 2013) and the study on perceptions of coaches' behaviours and the perceptions of the motivational climate didn't measure burnout (Ethington et al., 2006). The lack of existing literature examining the motivational climate and coach behaviours simultaneously along with burnout warrants further investigation into these constructs. Additionally, there is also little or no literature that examine whether athletic identity and the coach-athlete relationship mediate the relationship between the motivational climate, coach behaviours' and burnout. Therefore the aim of this current study is to investigate the relationship between the motivational climate, coach behaviours' and predicting burnout, and to see if athlete identity and coach-athlete relationship mediate the relationship. It would be reasonable to predict that a mastery orientated climate where coaches' promote encouraging feedback and appreciate hard work would negatively predict burnout symptoms. It is also hypothesised that a coach-athlete relationship is which is trusting, and a higher positive social identity is observed will protect against athlete burnout symptoms. Whereas, a performance orientated climate where the coach-athlete relationship shares conflict, along with athletes adopting a higher negative athletic identity will be linked to symptoms of burnout.

CHAPTER THREE:

METHOD

3.1 Participants.

Eighty three University Sports students agreed to take part in this study, consisting of forty eight males (57.8%) and thirty five females (42.2%) with a mean age (M=21.4) from a mixture of individual and team sports (See Table 1.). Participants were of mixed ability and competed at different levels. Participants were involved within their sport on average 11.13 years. Data collection was conducted roughly half the way through the season to allow time for both coaches and players to find themselves in a normal routine, whereby coach-athlete relationships and the motivational climate have been created.

3.2 Instrumentation.

3.2.1 Athlete Burnout Questionnaire.

The Athlete Burnout Questionnaire (ABQ) was developed by Raedeke and Smith (2001) and measures athlete's burnout symptoms. The 15-item inventory includes three sub-scales which measure physical and emotional exhaustion, reduced sense of accomplishment and devaluation. The questionnaire initiates with the phrase '*How often do you feel this way?*' which is what the items within the three sub-scales are based upon. Statements about sport devaluation account for feelings such as *'I feel wiped out from my sport'* while statements for physical and emotional exhaustion include statements such as *'I feel overly tired from my sport participation'*, and reduced sense of accomplishment is measured by statements such as *'I'm not achieving much in my sport'*. Each subscale is marked on a 5-point Likert scale and each score represents a response from (1='Almost Never'; 2='Rarely'; 3=' Sometimes'; 4= 'frequently' and 5='Very Much'). Two items which measure reduced sense of accomplishments are negatively-reverse scored. Preliminary validation analysis on the ABQ suggested internal consistency of each of the subscales. The internal consistency of the three subscales within the ABQ was supported with significant Cronbach alpha scores for devaluation of sport (α 0.78), physical and emotional exhaustion (α 0.89) and reduced sense of accomplishment (α 0.89) (Raedeke & Smith, 2001). Raedeke and Smith (2001) identified the ABQ as an extremely reliable measurement of burnout with every subscale included in the inventory reporting significant scores ($p<0.5$).

3.2.2 Perceived Motivational Climate in Sport Questionnaire – 2.

The Perceived Motivational Climate in Sport Questionnaire - 2 (PMCSQ-2) advanced by Newton *et al*. (2000) measures athletes perceptions of the motivational climate. This PMCSQ-2 was adapted from the original Perceived Motivational Climate in Sport Questionnaire-1 (Walling, Duda & Chi, 1993). The 33-item PMCSQ-2 inventory is split into two separate factors including a mastery scale and a performance/ego scale. The mastery scale contains 3 subscales which measure the existence of important roles, cooperative learning and effort/improvement. The performance scale contains 3 subscales which assess unequal recognition, intra-team rivalry and punishment for mistakes. The subscales are answered using a 5-point Likert scale, with the score of 1 meaning athletes *'strongly disagree'* with the statement, whereas a score of 5 suggests athletes *'strongly agree'* with the statements provided. Previous work on the PMCSQ-2 found the questionnaire to have acceptable internal reliability and factorial validity (Newton et al., 2000), with all subscales reporting acceptable Cronbach Alpha scores; Cooperative learning (α 0.74), Important role (α 0.79), Effort/Improvement (α 0.77), Intra-team rivalry (α 0.71), Punishment for mistakes (α 0.82) and unequal recognition (α 0.86).

3.2.3 Leadership Scale for Sport Questionnaire.

The leadership scale for sport questionnaire (LSS) was developed by Chelladurai & Saleh (1980), and is used to assess athlete's perceptions of coach's leadership. The 40-item LSS inventory is split into 5 sub-scales which assess five coach leadership behaviors; Training and instruction, democratic behavior, social support, positive feedback and autocratic behavior. Statements for *training and instruction* include 'My coach explains to each athlete the techniques and tactics of the sport"; *Democratic behavior* is measured using statements such as 'my coach lets the athletes share in decision making'; *Social support* contains statements proclaiming 'my coach helps members of the group settle their conflicts'; *Positive feedback* is measured using statements such as 'my coach tells an athlete when the athlete does a particularly good job'; *Autocratic behavior* is assessed using statements such as 'my coach does not explain his/her actions'. The sub-scales are measured using a 7-point Likert scale ranging from 1 ('strongly disagree') to 7 ('strongly agree'). The LSS originally had its construct validity confirmed through exploratory factor analysis (Chelladurai & Saleh, 1978). However, more recently a factor analyses has shown that the questionnaires factorial arrangement is questionable (Chelladurai & Riemer, 1998). Furthermore, Chelladurai and Riemer (1998) identified that the internal consistency of the autocratic behavior subscale

remained unacceptable in various studies. However, more recent research concerning the LSS (Fletcher & Roberts, 2013) suggested internal consistency with Cronbach alpha scores between; training and instruction (α .93-.96); democratic (α .75-.93); autocratic (α .83-.87); social support (α .87-.91); rewarding (α .85-.91). The LSS was used in this study as within psychology, the scale is intermittently used as the scale explicitly measures leadership behaviors in sport settings.

3.2.4 Coach-Athlete Relationship Questionnaire.

The coach-athlete relationship questionnaire (CART-Q) was developed by Jowett & Ntoumanis (2004), and measures the quality of the coach-athlete relationship. The 11-item CART-Q contains 3 sub-scales which measure; *level of interdependence* in terms of closeness (e.g., 'I like my coach'), *commitment* (e.g., 'I am committed to my coach'), and *complementarity* (e.g., 'when I am coached by my coach, I am responsive to his/her efforts'). The items are given a score ranging from 1 ('*strongly agree*') to 7 ('*strongly disagree*') with a mid-point of 4 (*half-way*). Jowett (2009b) supported the internal consistency of the direct subscales with adequate Cronbach alpha scores of closeness (α 0.87), commitment (α 0.78) and complementarity (α 0.85).

3.2.5 Athlete Identity Measurement Scale.

The athlete identity measurement scale (AIMS) was initially developed by Brewer et al. (1993) as a unidimensional scale. Brewer and Cornelius (2001) produced a multidimensional scale. This inventory of this version of the AIMS consists of 7 items split into three subscales; *exclusivity*, *social identity* and *negative affectivity*. The sub-scales are measured using a 7-point Likert scale ranging from 1 ('strongly disagree') to 7 ('strongly agree'). The social identity subscale contains statements such as 'I consider myself an athlete', the exclusivity subscale included statements such as 'Sport is the most important part of my life' and the negative affectivity subscale was measured using statements such as 'I feel bad about myself when I perform poorly in sport'. The abbreviated 7-item, three-factor version of the Athletic Identity Measurement Scale developed by Brewer and Cornelius (2001) has reported being internally consistent (α 0.81).

Procedures.

This study was approved at Cardiff Metropolitan University by the UWIC Ethical Committee (UEC). Data was collected using questionnaire booklets which were to be given out to Cardiff Metropolitan university sport students prior to lectures. Participants were instructed to answer the questionnaires through paperback response. Each questionnaire booklet contained a variety of numerical questions and inventories which assessed athlete burnout, perception of motivational climate, coach behaviours, coach-athlete relationship and athlete identity. Before the questionnaire booklets were handed out participants were given a verbal description of the objectives of the study. Included within the booklets were participant information sheets which provided them with a general overview of the study and consent forms which enlightened students that they were able to withdraw from the study at any time, and that their information and answers would be kept completely confidential.

Data Analysis.

Analysis will be conducted using the Statistical Package for the Social Sciences software (for Windows, Version 19.0, SPSS, IBM, New York, United States). The data which has been generated from the questionnaires and results of the ABQ PMCSQ-2, LSS, CART-Q and AIMS will be added into the SPSS software and the data will be screened. A preliminary analysis will then be conducted which will involve a Pearson's bivariate correlation test to identify the relationship between the dependant and independent variables, which will also check for multicollinearity between the subscales. An independent sample t-test will also be used to compare males and females scoring patterns. Additionally, an analysis to check for mediation will then be conducted using a hierarchical multiple regression analysis to determine if coach-athlete relationship or athlete identity mediate the relationship between the motivational climate, coach behaviours and burnout. Conducting this type of analysis allows us to predict athlete burnout scores (dependant) based on responses to the motivational climate and coach behaviours (independent variables) and coach-athlete relationship and athlete identity (mediating variables). According to Baron and Kenny (1986) a mediating variable in statistics describes 'how', compared to 'when' effects will occur by calculating for the relationship between the dependant and independent variables; a mediating variable will influence the independent variable(s), affect the dependant variable and relationship will exist when the path relating (A - Motivational Climate/Coach Behaviours) to (C - Athlete Burnout) is mediated by a third variable (B - Coach-athlete relationship/Athlete Identity) (illustrated in figure 1.)
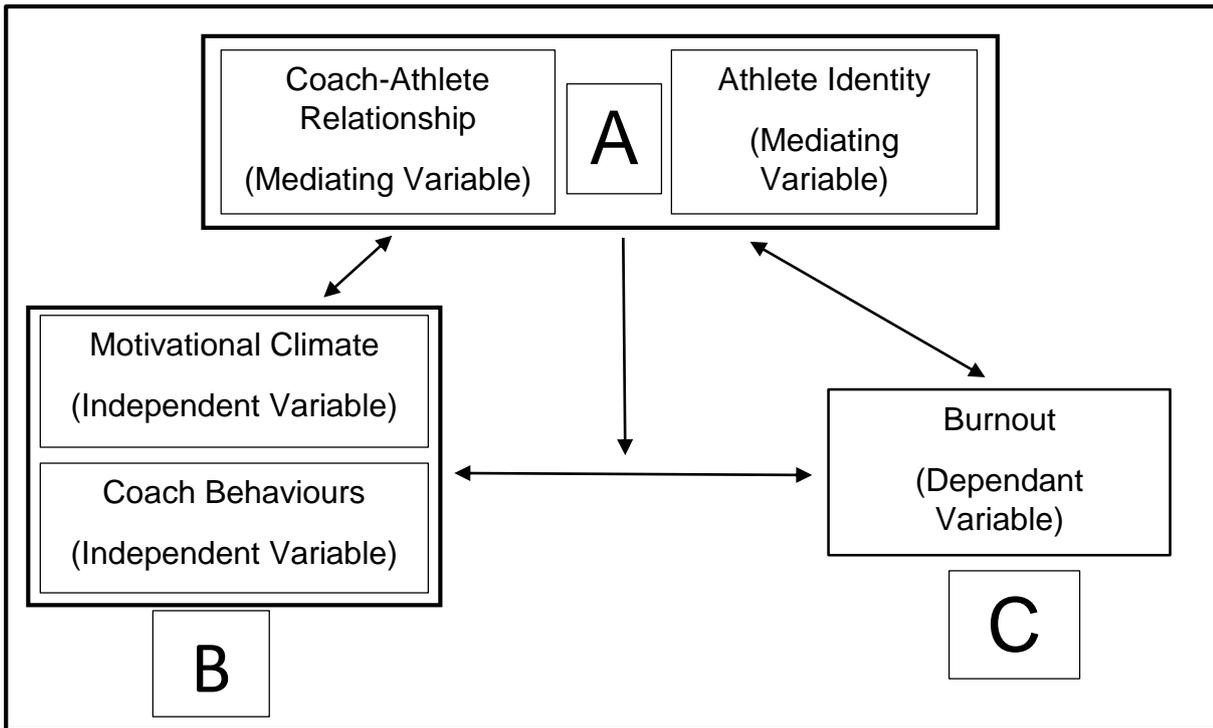
Figure 1. **Mediation relationship between the motivational climate and coach behaviours, coach-athlete relationship and athlete identity, and burnout.**

CHAPTER FOUR:

RESULTS

4.1 Introduction.

This section will aim to answer the previously mentioned hypothesis that a relationship between the motivational climate, coach behaviours and burnout exists, and will also intend to answer the question whether the coach-athlete relationship and athlete identity mediate the relationship. The results will be accumulated from the statistical analysis data from the ABQ, PMCSQ-2, LSS, CART-Q and AIMS subscales accordingly, and a clear description of the results will be produced. The preliminary analysis conducted was a Pearson's bivariate correlation test and the objective of this type of analysis is to firstly see whether a relationship between the independent variables and dependent variable exists, and to check multicollinearity between the subscales. The secondary analysis conducted was a hierarchal multiple regression and the objective of regression analysis is to examine the premise that the scores of the dependent variable can be mediated by the independent variables. Before any testing was conducted, careful attention was given to Field's (2009) statistical assumptions of multiple regression which assumes that; (i) all independent variables are numerical and the subscales contain ordinal or scaled data and have variation in their values; (ii) a linear relationship between the dependent and independent variables exists with normally distributed data; (iii) there is no clear multicollinearity between the dependent and independent variables, no errors within the data and no sequential correlations between the discrepancies in the data exist. A Pearson's bivariate correlation analysis was used to check for multicollinearity between variables and a Cronbach Alpha reliability test was used to measure scale reliability between data sets and check for any discrepancies in the data (See Table 2.).

4.2 Preliminary Screening of Analysis and Data Descriptive.

Prior to multiple regression analysis being conducted, descriptive values and internal consistencies of all subscales being explored were assessed by undertaking preliminary screening. Multiple subscales being assessed were PMCSQ-2 Mastery, PMCSQ-2 Performance, LSS Training and Instruction, LSS Democratic Behaviour, LSS Social Support, LSS Positive Feedback, LSS Autocratic Behaviour, CART-Q Level of Independence, CART-Q Commitment, CART-Q Complementarity, AIMS Exclusivity, AIMS Social Identity, AIMS Affectivity, ABQ Reduced Sense of Accomplishment, ABQ Physical & Emotional Exhaustion, and ABQ Devaluation. Table 1. Below illustrates the descriptive statistics for males and females, with both means and standard deviations in each subscale variable under attention. The results show that males scored higher mean values for (PMCSQ-2 Performance, CART-Q Level of Independence, CART-Q Complimentary, ABQ Reduced Sense of Accomplishments and ABQ Devaluation), while female participants scored higher mean values for (PMCSQ-2 Mastery and LSS Training and Instruction).

Table. 1. Descriptive statistics and mean value difference between male and female participant subscale scores.

	Males	Females
	Mean	Mean
	(±SD)	(±SD)
1. PMCSQ-2 Mastery	3.67* (±.51)	3.96* (±.55)
2. PMCSQ-2 Performance	3.47* (±.61)	3.12* (±.72)
3. LSS Training & Instruction	3.19* (±.40)	3.56* (±.60)
4. LSS Democratic Behaviour	2.72 (±.67)	3.02 (±.73)
5. LSS Social Support	2.59 (±.64)	2.88 (±.72)
6. LSS Positive Feedback	3.70 (±.61)	3.84 (±.78)
7. LSS Autocratic Behaviour	2.61 (±.56)	2.46 (±.65)
8. CART-Q Level of Independence	3.18* (±1.22)	2.33* (±1.11)
9. CART-Q Commitment	3.50 (±1.12)	3.02 (±1.27)
10. CART-Q Complimentary	3.68* (±1.09)	2.78* (±1.24)
11. AIMS Exclusivity	3.68 (±1.47)	4.16 (±1.19)
12. AIMS Social Identity	4.44 (±1.32)	5.00 (1.31)
13. AIMS Negative Affectivity	5.03 (±1.44)	5.51 (±1.61)
14. ABQ Reduced Sense of Accomplishment	2.93* (±.84)	2.47* (±.78)
15. ABQ Physical & Emotional Exhaustion	2.59 (±.74)	2.66 (±.67)
16. ABQ Devaluation	3.00* (±.92)	2.55* (±1.08)

M=Mean; SD=Standard Deviation. *P*-values are significant *p<.05.

In order to compare mean scores for each of the subscales between males and females, an independent sample *t*-test was applied to check if there was a difference in gender scores. Data obtained from the *t*-test suggests that scoring patterns for seven of the subscales (PMCSQ-2 Mastery, PMCSQ-2 Performance, LSS Training & Instruction, CART-Q Level of Independence, CART-Q Complimentary and ABQ Devaluation) were significantly different between male and female participants. The results from the independent *t*-test analysis (shown in Table. 1.) Display that the aforementioned seven subscales all recorded significant *t*-test values (p <.05*). Therefore, when considering these subscales we must be cautious in generalising these results to the whole population.

Reliability analysis was conducted to establish to internal consistency scores for each of the subscales. Cronbach's (1951) alpha coefficients (See Table 2.) indicated that all of the measures were internally consistent and reliable and there was little error in measurement which supports Field's (2009) statistical assumptions of regression analysis. Fifteen of the sixteen subscales reported Cronbach alpha scores over the approved criterion α.70 (Cronbach, 1951). LSS autocratic behaviour reported a low Cronbach alpha value α<.70 which was believed to be unacceptable and as a result was withdrawn from further analysis. Field (2009) stated that coefficient values over the recommended criterion shows high internal consistency of the measures under review.

Table 2. Bivariate Correlations between subscales and Internal Consistency scores of each subscale.

	1. PMCSQ-2 Mastery	2. PMCSQ-2 Performance	3. LSS Training & Instruction	4. LSS Democratic Behaviour	5. LSS Social Support	6. LSS Positive Feedback	7. ABQ Reduced Sense of Accomplishment	8. ABQ Physical & Emotional Exhaustion	9. ABQ Devaluation
1. PMCSQ-2 Mastery	(α .91)								
2. PMCSQ-2 Performance	-.26*	(α .80)							
3. LSS Training & Instruction	.60**	-.30**	(α .87)						
4. LSS Democratic Behaviour	.41**	-.53**	.50**	(α .87)					
5. LSS Social Support	.28*	-.37**	.46**	.50**	(α .86)				
6. LSS Positive Feedback	.44**	.11	.40**	.21	.41**	(α .86)			
7. ABQ RSA	-.46**	.43**	-.51**	-.60**	-.33**	-.22*	(α .87)		
8. ABQ P&E Exhaustion	-.07	.15	-.09	-.37**	.09	.03	.55**	(α .87)	
9. .ABQ Devaluation	-.39**	.40**	-.43**	-.63**	-.21	-.12	.82**	.63**	(α .89)

Bivariate Correlations in the study's variables are significant **$p<.01$, *$p<.05$. Cronbach Alpha coefficients (α) for subscales are illustrated along the diagonal.

4.3 Bivariate Correlation Analysis.

A Pearson's bivariate correlation analysis (explained in Table 2.) was conducted to test the premise of multicollinearity between the ABQ subscales (dependant) and the PMCSQ-2 & LSS subscales (independent). This form of correlation analysis was conducted to check for the strength or significance of the correlations between variables, and also to check for the linearity of the relationship. The bivariate correlation analysis reported that PMSCQ-2 Mastery values shared a significant positive relationship with the four LSS subscales (ranging between 0.28*- 0.60**), and documented significant negative relationships with both ABQ Reduced Sense of Accomplishment (-0.46**) and ABQ Devaluation (-0.39**). In comparison, PMSCQ-2 Performance scores displayed significant negative relationship with three of the LSS subscales (ranging from -0.30 - -0.53), while recording significant positive relationships with both ABQ Reduced Sense of Accomplishment (0.43**) and ABQ Devaluation (0.40**). All four LSS subscale values were significantly negatively correlated with ABQ Reduced Sense of Accomplishment (ranging from -0.22* - -0.60**), and also negatively correlated with ABQ Devaluation (ranging from -0.12 - -0.63**), while LSS Democratic Behaviour and LSS Training & Instruction was negatively correlated with ABQ Physical & Emotional Exhaustion (ranging from -0.09 - -0.37**). These results confirmed there was no presence of multicollinearity between the dependant variable and both independent variables as not every subscale variable was significantly correlated with the other (>.85). The evidence that multicollinearity between variables does not exist suggests the results from the correlation analysis meet the criteria of the assumption of multiple regression (Field, 2009).

4.4 Regression Analysis.

4.4.1 Motivational Climate and Burnout subscales – Coach-athlete relationship.

Hierarchical multiple regression analysis was conducted to identify if the coach-athlete relationship, and athlete identity mediated the effects of the motivational climate and coach behaviours on each of the burnout subscales. Results from the multiple regression analysis suggested coach-athlete relationship had a significant mediating effect on the relationship between motivational climate and all of the burnout subscales (see Table. 3). Regression analysis showed that the coach-athlete relationship had a significant mediating effect on the relationship between the motivational climate and physical and emotional exhaustion (R^2_{cha}= 0.01, $F_{3,227}$ = 3.06, P = N/S). Less than one percent of additional variance was accounted for motivational climate. Examination of coefficients suggests that the level of independence

(β= -0.66, $p<0.05^*$) and complimentary (β= 0.64, $p<0.05^*$) contributed most to the prediction. Further analysis indicated that the coach-athlete relationship partially mediated the relationship between the motivational climate and reduced sense of accomplishment (R^2_{cha}= 0.15, $F_{3,227}$ = 10.10, $P<0.01^{**}$). Examination of the coefficients suggests that commitment (β= -0.43, $p<0.01^{**}$) and level of independence (β= -0.45, $p<0.05^*$) contributed most to the prediction. The analysis showed the coach-athlete relationship also partially mediated the relationship between motivational climate and devaluation values (R^2_{cha}= 0.08, $F_{3,227}$ = 9.01, $P<0.05^*$). Examination of the coefficients suggests that commitment (β= 0.42, $p<0.05^*$) and level of independence (β= -0.47, $p<0.05^*$) contributed most to the prediction.

4.4.2 Coach Behaviours and Burnout subscales – Coach-athlete relationship.

Results from the multiple regression analysis reported significant mediating relationships between the coach-athlete relationship, coach behaviours and all of the burnout subscales (see Table. 3). The results from the analysis showed that the coach-athlete relationship had a significant mediating effect on the relationship between coach behaviours and reduced sense of accomplishment (R^2_{cha}= 0.22, $F_{3,227}$ = 9.58, $P<0.01^{**}$). Examination of the coefficients suggests that commitment was the most significant predictor (β= 0.38, $p<0.05^*$). Results also reported the coach-athlete relationship partially mediated the relationship between coach behaviours and physical and emotional exhaustion (R^2_{cha}= 0.16, $F_{3,227}$ = 4.85, $P<0.01^{**}$). Examination of the coefficients revealed there was no significant contributor to the prediction. Results also found coach-athlete relationship to partially mediate the relationship between coach behaviours and devaluation (R^2_{cha}= 0.22, $F_{3,227}$ = 10.95, $P<0.01^{**}$). Examination of the coefficients revealed commitment to be the strongest significant predictor (β= 0.38, $p<0.05^*$).

4.4.3 Motivational Climate and Burnout Subscales – Athlete Identity.

Furthermore regression analysis reported athlete identity to have a significant mediating effect on the relationship between motivational climate and all of the burnout subscales (see Table. 4). Results from the regression analysis showed that athlete identity partially mediated the relationship between the motivational climate and reduced sense of accomplishment scores (R^2_{cha}= 0.19, $F_{3,227}$ = 11.20, $P<0.01^{**}$). Examination of the coefficients revealed there were no sig contributors to the prediction. Further analysis indicated that athlete identity fully mediated the relationship between motivational climate and physical and emotional exhaustion values (R^2_{cha}= 0.01, $F_{3,227}$ = 2.39, P= N/S). Only one percent of the variance was predicted when motivational climate was added. Examination

of the coefficients revealed there were no significant contributors to the prediction. Athlete identity was also found to partially mediate the relationship between motivational climate and devaluation scores (R^2_{cha}= 0.32, $F_{3,227}$ = 10.46, $P<0.01^{**}$). Examination of the coefficients revealed there were no significant contributors to the prediction.

4.4.4 Coach Behaviours and Burnout subscales – Athlete Identity.

After further investigation regression analysis found that athlete identity also had a significant mediating effect on the relationship between coach behaviours and all of the burnout subscales (See table 4.). Results showed that athlete identity partially mediated the relationship between coach behaviours and reduced sense of accomplishment (R^2_{cha}= 0.28, $F_{3,227}$ = 11.09, $P<0.01^{**}$). Examination of the coefficients revealed that social identity was the most significant contributor to the prediction (β= -0.35, $p<0.01^{**}$). Athlete identity was found to partially mediate the relationship between coach behaviours and physical and emotional exhaustion scores (R^2_{cha}= 0.19, $F_{3,227}$ = 4.92, $P<0.05^{*}$). Examination of the coefficients revealed social identity to be the most significant predictor (β= -0.37, $p<0.05^{*}$). Athlete identity was also found to partially mediate the relationship between coach behaviours and devaluation values (R^2_{cha}= 0.32, $F_{3,227}$ = 10.46, $P<0.01^{**}$). Examination of the coefficients revealed social identity to be the most significant predictor (β= -0.35, $p<0.05^{*}$).

4.4.5 Gender Comparison mediation scores between subscales.

After conducting a *t*-test in the analysis, a gender difference in the scoring patterns appeared which rationalised the need to include this within the analysis on that basis. Regression analysis was conducted to compare mediation relationships between male and female participants. Results from the *t*-test revealed a significant difference in scoring patterns between males and females. Results from the analysis showed that the coach-athlete relationship full mediated the relationship between motivational climate and physical and emotional exhaustion and devaluation scores (*p*= N/S), while showing partial mediation with reduced sense of accomplishment scores in male participants, whilst within females partial mediation only existed between motivational climate and devaluation scores (see Table 3.). Commitment was found to be a significant predictor within reduced sense of accomplishment and devaluation in male participants. Results from the analysis also found coach-athlete relationship to fully mediate the relationship between coach behaviours and physical and emotional exhaustion in male participants (*p*= N/S), while it partially mediated reduced sense of accomplishment and devaluation scores. In contrast, coach-athlete

relationship only showed partial mediation with coach behaviours and devaluation scores within female participants.

After further investigation, regression analysis found athlete identity was found to fully mediate the relationship between motivational climate and physical and emotional exhaustion in male participants, while it was found to partially mediate reduced sense of accomplishment and devaluation in both male and female participants (see Table 4.). Athlete identity also recorded partial mediating effect on the relationship between coach behaviours and all three burnout subscales, whilst only resulting in partial mediation with reduced sense of accomplishment within female participants. Social Identity remained the most significant predictor in two of these relationships.

Table. 3. Summary of the mediating relationships of coach-athlete relationship subscales and most significant predictors.

Dependant Variable	Coach-athlete Relationship / Motivational Climate	Significant Predictors β= <0.05*	Coach-athlete Relationship / Coach Behaviours	Significant Predictors β= <0.05*
Overall				
• ABQ- Physical and Emotional Exhaustion	**Mediation**	Level of Independence/ Complimentary	Partial Mediation	-
• ABQ- Reduced Sense of Accomplishment	Partial Mediation	Commitment** Level of Independence	Partial Mediation	Commitment
• ABQ- Devaluation	Partial Mediation	Commitment/ Level of Independence	Partial Mediation	Commitment
Males				
• ABQ- Physical and Emotional Exhaustion	**Mediation**	-	Mediation	-
• ABQ- Reduced Sense of Accomplishment	Partial Mediation	Commitment	Partial Mediation	Commitment
• ABQ- Devaluation	**Mediation**	Commitment	Partial Mediation	Commitment
Females				
• ABQ- Physical and Emotional Exhaustion	No Mediation	-	No Mediation	-
• ABQ- Reduced Sense of Accomplishment	No Mediation	-	No Mediation	-
• ABQ- Devaluation	Partial Mediation	-	Partial Mediation	-

Values are significant *$p<0.05$, **$p<0.01$.

Table 4. Summary of the mediating relationships of athlete identity subscales along with most significant predictors.

Dependant Variable	Athlete Identity / Motivational Climate	Significant Predictors β= <0.05*	Athlete Identity / Coach Behaviours	Significant Predictors β= <0.05*
Overall				
• **ABQ- Physical and Emotional Exhaustion**	**Mediation**	-	Partial Mediation	Social Identity
• **ABQ- Reduced Sense of Accomplishment**	Partial Mediation	-	Partial Mediation	Social Identity**
• **ABQ- Devaluation**	Partial Mediation	-	Partial Mediation	Social Identity
Males				
• **ABQ- Physical and Emotional Exhaustion**	**Mediation**	-	Partial Mediation	Social Identity
• **ABQ- Reduced Sense of Accomplishment**	Partial Mediation	-	Partial Mediation	-
• **ABQ- Devaluation**	Partial Mediation	-	Partial Mediation	-
Females				
• **ABQ- Physical and Emotional Exhaustion**	No Mediation	-	No Mediation	-
• **ABQ- Reduced Sense of Accomplishment**	Partial Mediation	-	Partial Mediation	Social Identity
• **ABQ- Devaluation**	Partial Mediation	-	No Mediation	-

Values are significant *$p<0.05$, **$p<0.01$.

CHAPTER FIVE:

DISCUSSION

5.1 General Overview.

The aim of the present study was to firstly examine the relationship between the motivational climate, coach behaviours and burnout prediction, and secondly to see if the coach-athlete relationship and athlete identity mediated the relationship. Previous research has established that the motivational climate influences the predictors of burnout and have identified that a mastery orientated climate negatively predicts the development of burnout symptoms (Vazou et al., 2005; Vazou et al., 2006; Leymre et al., 2008; Smith et al., 2010). Additionally, previous research has found that athletes' perceptions of the coaching style influences their level of burnout; athletes perceiving high pressure, high expectations, and low social support from the coach, along with perceiving dispraise and conflict with the coach have also been associated with athlete burnout (Gould et al., 1996; Gustafsson et al., 2008; Vealey, 1998). The lack of existing literature which has investigated the interplay of the motivational climate along with coach behaviours and burnout warrants further investigation into these constructs. It was hypothesised that a mastery oriented climate, where coaches were perceived as adopting a democratic leadership style and encouraging positive feedback, would negatively correlate with burnout predictions. It was hypothesised that a strong coach-athlete relationship in terms of closeness, commitment and complimentary may help protect against burnout symptoms. It was also hypothesised that a higher positive social identity would help protect against burnout symptoms.

The key findings from this study were that mastery orientated climate values shared a significant positive relationship with all four coach behaviours subscales, whilst sharing a significant negative relationship with reduced sense of accomplishment and devaluation scores. Additionally, a performance orientated climate shared a significant negative relationship with three of the coach behaviours subscales, whilst sharing a significant positive relationship with reduced sense of accomplishment and devaluation scores. Further regression analysis identified the coach-athlete relationship had a significant mediating impact on the relationship between the motivational climate and all three of the burnout subscales; in particular physical and emotional exhaustion of which full mediation occurred. The coach-athlete relationship was also found to partially mediate the relationship between coach behaviours and all three burnout subscales. Multiple regression analysis also found that athlete identity had a significant mediating impact on the relationship between the motivational climate and all of the burnout subscales; in particular physical and emotional exhaustion which it fully mediated. Athlete identity was also found to partially mediate the relationship between coach behaviours and all three burnout subscales, with social identity

being the most significant predictor on all occasions. A *t*-test was also carried out and found that the scoring patterns of a majority of the subscales during multiple regression analysis were influenced by gender differences. The coach-athlete relationship had little mediating effect within females compared with male participants. Coach-athlete relationship didn't have any mediating effect on the relationship between motivational climate and two of the burnout subscales within female participants. Athlete identity had no mediating effect on the relationship between motivational climate and physical and emotional exhaustion, while it also had no mediating effect on the relationship between coach behaviours and physical and emotional exhaustion and devaluation within female participants. The results from the current study supported the previously mentioned hypotheses.

5.2 Theoretical Implications.

The findings from this study have significant theoretical implications as it has presented evidence that there is a significant positive relationship between a mastery orientated climate and all four coach behaviours subscales. There is also evidence that there is a significant negative relationship between coaches providing training and instruction, social support and behaving in a democratic manor, on reduced sense of accomplishment and devaluation. This study has presented new findings that the coach-athlete relationship has been found to have a significant mediating effect on the relationship between both motivational climate and coach behaviours and all three of the burnout subscales, with both commitment and closeness being the strongest predictors. Coach-athlete relationship was found to fully mediate the relationship between motivational climate and physical and emotional exhaustion. This finding expands current research which has identified the quality of the coach-athlete relationship to be directly linked with burnout symptoms (Gustafsson et al., 2008). Additionally, this present study has presented new findings that athlete identity was found to have a mediating effect on both motivational climate and coach behaviours relationships with all three of the burnout subscales. Athlete identity was found to fully mediate the relationship between motivational climate and physical and emotional exhaustion, whilst partially mediating the relationship between the motivational climate and the other two subscales. Social identity remained the most significant predictor of the mediating interaction between coach behaviours and the three burnout subscales as it was continually the strongest predictor; thus meaning social identity may be the best prognosticator to explain the relationship between athlete's perceptions of their coach's behaviours and burnout.

Findings from this study provides support to the current literature which has explored the relationship between the motivational climate and burnout (Vazou et al., 2005; Gustafsson et al., 2008; Leymre et al., 2008). This study has produced similar findings with other research that a performance orientated climate is positively related with reduced sense of accomplishment and devaluation, while a mastery orientated climate negatively predicts symptoms of reduced sense of accomplishment and devaluation. Consistent with studies that have investigated the relationship between coach behaviours and perceptions of the motivational climate, this study found that a mastery orientated climate shared a significant positive relationship with all four coach behaviours subscales (Ethington et al., 2006). The results from this study also provides support to the current literature which has examined the relationship between coach behaviours and burnout (Gould et al., 1996; Gustafsson et al., 2008; Vealey, 1998), by finding that four of the coach behaviour subscales shared a significant negative relationship with reduced sense of accomplishment and devaluation. In addition, this study has found mediating effects of the coach-athlete relationship and athlete identity, when considering both motivational climate and coach behaviours with burnout. This study has revealed that the coach-athlete relationship fully explains the relationship between the motivational climate and physical and emotional exhaustion. Whilst it partially explains the relationship between motivational climate and the other two burnout subscales; and the relationship between coach behaviours and all of the burnout subscales. An additional new finding from this study is that athlete identity has been found to fully explain the relationship between motivational climate and physical and emotional exhaustion. Whilst partially explaining the relationship between motivational climate and the other two burnout subscales; and the relationship between coach behaviours and all three burnout subscales, in particular social identity.

The results from this study suggest that a mastery orientated climate where athletes perceive their coaches are providing training and instruction, adopting a democratic leadership style, providing social support and encouraging positive feedback negatively predicts the development of reduced sense of accomplishment and devaluation. This finding is consistent with the work by Vealey (1998) who suggests that a coach's feedback style creates a particular climate, which when less positive feedback is produced a performance orientated climate is promoted. This type of climate may restrict athletes from feeling successful, and cause them to be conscious of their own personal limitations of ability (Reinboth & Duda, 2004), and was associated with physical and emotional exhaustion and devaluation. Whereas athletes with stronger perceptions of accomplishment was associated

with a more democratic leadership style (Vealey, 1998). Additionally, Gustafsson et al. (2008) found that athletes perceiving low social support from their coach was associated with burnout symptoms, which was consistent with this study's findings.

Results from this study presents confirmation that the relationship between the motivational climate and physical and emotional exhaustion can be explained by the quality of the coach-athlete relationship in terms of closeness and complementarity. This finding suggests that athletes who find themselves within a mastery oriented climate are more likely to possess a close relationship with their coach and are responsive to their efforts are less vulnerable to becoming exhausted. This finding is particularly important as physical and emotional exhaustion has been known to be the first symptom experienced when burning out (Raedeke, 1997). Closeness and commitment also partially explains the relationship between the motivational climate and reduced sense of accomplishment and devaluation. It was also found to partially explain the relationship between coach behaviours and all three burnout dimensions. This finding supports the work of Gustafsson et al. (2008) who found that high quality coach-athlete relationships was negatively linked with the three dimensions of burnout. The study found that when athletes perceived a lack of input and control around training sessions they became physically and emotionally exhausted, although due to the respect, trust and commitment they have with their coach some were able to modify their training efforts and avoid overtraining. A recent study by Isoard-Gautheur, Trouilloud, Gustafsson & Guillet-Descas (2016) also confirmed that reduced accomplishments and devaluation were negatively related to the quality of the coach-athlete relationship. Their study found that athletes who reported a good relationship with their coach reported higher accomplishments, lower physical and emotional exhaustion and diminished negative feelings towards their sport compared with athletes who perceived a negative relationship with their coach. This suggests that if athletes feel close to their coach and have a sense of appreciation, they may feel less emotionally exhausted as they are receiving positive perceptions which could increase senses of accomplishment. Additionally, athletes who feel they are committed to their coach are more likely to feel less physically exhausted as they are able to modify their training efforts and avoid excessive overtraining in order to maintain positive appraisals about their relationship with the coach. Moreover, athletes who appreciate their coach's efforts may have lower perceptions of devaluation given their positive attitudes towards their sport which could facilitate greater interest and positive feelings towards their sport (Isoard-Gautheur et al., 2016).

Another alluring finding from this study was that athlete identity was found to fully explain the relationship between motivational climate and physical and emotional exhaustion. This finding advocates that athletes who perceive a mastery oriented climate are more inclined to have a strong sense of self and feel competent within their role as an athlete are less likely to experience exhaustion symptoms. Athlete identity was also found to partially explain the relationship between motivational climate and reduced sense of accomplishment and devaluation. Additionally, Social identity was constantly found to be the most significant predictor of the relationship between coach behaviours and all three burnout dimensions. This finding suggests that athletes who believe they are viewed highly as athletes by significant others, and have a strong sense of self are more likely to score lower on the three burnout subscales. This finding provides additional knowledge to the work by Martin & Thelma (2013) who found that all three of the AIMS subscales did add a significant amount to the prediction of reduced accomplishment and physical and emotional exhaustion. However, interestingly results from this study found that athlete identity had little mediating effect in female participants. This finding suggests that female athletes may still be susceptible to burnout symptoms when perceiving a certain climate or certain coach behaviours, even when having a high athletic identity. Martin & Thelma (2013) found that athletes scoring high on negative affectivity were linked to risky sporting behaviour such as overtraining as they felt bad for underachieving in sport, and started to become physically and emotionally exhausted. Whereas, athletes with a multidimensional higher social identity were found to be protected against burnout symptoms (Black & Smith, 2007; Martin & Thelma, 2013). Physical and emotional exhaustion has been described as the most central and first symptom of burnout development (Raedeke, 1997), which eventually leaves athletes with feelings of lack of accomplishment (Gustafsson et al., 2008). Due to athlete identity fully mediates the relationship between the motivational climate and physical and emotional exhaustion; therefore suggesting that athletes with high athletic identity, are more likely to perceive a mastery climate and consequently will be less susceptible to burnout symptoms. Furthermore, social identity was found to be a constant significant predictor of the relationship between coach behaviours and all three burnout subscales; which suggests that athletes who feel they are viewed highly by their coaches and consider themselves as athletes are less susceptible to burnout symptoms than those who have lower social identities.

5.3 Practical Implications.

The present studies findings are essential for athletes and coaches who wish to raise performance standards and improve player welfare in sporting environments as it was identified that to avoid burnout, a strong coach-athlete relationship must be obtained. Closeness, commitment and complementarity proved to be the strongest predictors of the mediating relationships, therefore it is fundamental that coaches should learn to bond and create strong, trusting relationships with their players within a practical setting. This study revealed a good way to create a strong coach-athlete relationship was to promote a mastery orientated climate for athletes and for coaches to provide positive feedback, social support and adopt a democratic leadership style. Gustafsson et al. (2008) believed it was crucial for coaches to obtain strong relationships with athletes, as 70% of athletes who experienced poor communication and open conflict with their coaches felt this was a contributing factor to burnout. Therefore, highlighting the importance for coaches to be made aware of certain strategies to promote a mastery oriented climate to encourage positive coach-athlete relationships.

Mageau and Vallerand (2003) proposed strategies which coaches could employ to assist the encouragement of a mastery orientated climate. They believed that coaches adopting an autonomy supportive coaching style allowing athletes the opportunity to take initiatives and become part of the decision making process would maximise their opportunities to feel autonomous. This, in turn, will foster the advancement and maintenance of athletes' motivation and adaptive outcomes. Additionally, Isoard-Gautheur et al. (2016) believed that coaches should allow athletes to have a sense of control in training and competition related situations to allow athletes to maintain positive appraisals about their relationship with the coach, making them less likely to become emotionally exhausted.

Due to additional findings from this study it is advised that athletes need to adopt a I high athletic identity in order to avoid experiencing burnout symptoms (Martin & Thelma, 2013). As social identity remained the strongest predictor of the mediating relationship between coach behaviours and burnout, it is advised that coaches should adopt an autonomy supportive style to promote social identity within athletes. Findings suggest a good way to promote social identity was for coaches to adopt a democratic leadership style, provide positive feedback, social support and adopting a democratic leadership style. Peers and coaches should also encourage athletes' interest in other activities outside of their primary sport to avoid unidimensional identity development which may lead to their primary sport consuming an excessive amount of their attention and time (Black & Smith, 2007; Martin &

Thelma, 2013). Additionally, coaches should learn to foster a mastery orientated climate that promotes autonomy and choice for athletes in order to promote a multidimensional social identity within their athletes (Martin & Thelma, 2013). Vazou et al. (2006) suggested that when athletes perceive higher levels of a mastery climate they report higher levels of physical self-worth, enjoyment and effort, which is a far more controllable criteria for success, therefore athletes are less likely to experience symptoms of reduced accomplishment (Reinboth & Duda, 2006; Smith et al., 2010). Athletes who aren't experiencing high levels of enjoyment and effort within their sport are associated with reaching the higher end of the burnout continuum and start to devalue their sport all together (Leymre et al., 2008).

If coaches are able to devise practical settings within a mastery orientated motivational setting, and adopt an autonomous leadership style focusing on positive feedback, and providing social support to athletes, this will allow athletes to perceive stronger coach-athlete relationships and adopt higher social identities. This will help athletes avoid the most central and first symptom of athlete burnout; physical and emotional exhaustion and reduce further development on the burnout continuum.

5.4 Limitations and Future Research.

A major strength of this study was its ability to support the previously mentioned hypotheses stated prior to analysis. The study's contribution to existing research, and its potential to present an important explanation and provide a better understanding to the current knowledge when investigating the motivational climate, coach behaviours and burnout, makes this a noteworthy strength. This study aimed to provide an explanation to the relationship between the motivational climate, coach behaviours and burnout using coach-athlete relationship and athlete identity as potential mediators. Present research on the motivational climate, coach behaviours and burnout had directly measured the relationship between the three concepts in isolation, and little existing research had investigated coach-athlete relationship and athlete identity as mediators. Results from the study revealed a significant positive relationship between coach behaviours and burnout, whilst also revealing significant relationships with the motivational climate and burnout. Results from this study revealed when coach-athlete relationship was observed with motivational climate and burnout, there was a significant interaction with coach-athlete relationship being the mediator. Also, when observed with coach behaviours and burnout, coach-athlete relationship was also a partial mediator. Athlete identity was also found to be a partial mediator when observed with both motivational climate and coach behaviours with burnout.

These findings assisted the development of the current literature on the relationship between these three variables and it is advised that any future research on the relationship between the variables measured within the present study, should consider the effects of the coach-athlete relationship and athlete identity due to their mediating influence on the relationships.

Before additional research is conducted, the limitations of the current study should be recognised. The present study used a quantitative approach which used numbers to try and represent facts to try and provide explanations of the relationships which were investigated (Gratton & Jones, 2010). According to Patton (2002) using a quantitative approach fails to provide scientific explanations behind the relationships observed, and provides a lack of detailed information which would increase the depth of understanding around the topic area. In terms of developing practical strategies using the theoretical knowledge learnt, it is essential to provide evidence as to 'why' these relationships occurred, which this study failed to include.

Another major limitation was the significantly reduced sample size; Tabachnick & Fidell (2001) suggest at least thirty participants per variable should be included within the sample. The characteristics of the sample also provided to be a limitation of the present study as the sample was of university student athletes (non-professional) and were from a variety of both team and individual sports which weren't measured within this study. Coakley (1992) identified that team and individual sports differ when measuring burnout; athletes from individual sports are more likely to suffer from burnout as they generally base their success on social recognition from judges rating their performances, or completing tasks within certain time limits. Therefore any future research should conduct with a larger sample size and measure either a team or individual sporting sample.

An additional limitation of this study was that it didn't measure the effect of time on the mediating relationship of coach-athlete relationship and athlete identity. Cresswell & Eklund (2005) discovered that burnout symptoms vary over prolonged periods of time such as pre-season, post-season. Additionally, Lafreniere et al. (2008) identified that it takes time to build a quality coach-athlete relationship which suggests that it's important for future research to consider the temporal relations which might influence the mediating relationships which were investigated in the present study.

Future research should be careful when making assumptions from the results found in this study due to the limitations, but also consider the potential to broaden knowledge which was gained from observing the mediating properties of the coach-athlete relationship, and athlete

identity and their effect on the relationship between the motivational climate, coach behaviours and burnout. Therefore, it's suggested that future research investigating these constructs should always consider the mediating impact of the coach-athlete relationship and athlete identity. As a result of the difference in scoring patterns between males and females reported from the *t*-test, future research should consider investigating the difference between males and females in relation to burnout. It is also recommended that a longitudinal research design should be used in order to see if the mediating relationships change over time.

Chapter Six:

Conclusion

The objective of the current study was to analyse the relationship between the motivational climate, coach behaviours and burnout, and to see whether the coach-athlete relationship and athlete identity mediate the relationship. The findings of this investigation provided support that both coach-athlete relationship and athlete identity has significant mediating effects on the relationships between the motivational climate, coach behaviours and burnout. In particular, both coach-athlete relationship and athlete identity were found to fully mediate the relationship between the motivational climate and physical and emotional exhaustion. The current findings have practical importance for coaches and athletes as the findings from this study propose that coaches should establish strong bonds and relationships with their athletes in order to raise performance standards and welfare within their athletes. The findings from this study also suggest that if coaches are able to create a mastery orientated climate where athletes share in the decision making process and receive positive feedback and support from their coach, they are able to encourage the development of athletes' social identities. As social identity was found to be the most significant predictor of the relationship between coach behaviours and burnout, this would reduce the likelihood of athletes suffering from symptoms of burnout.

Any assumptions made from the findings of the current study should be taken with caution as the study did contain some major limitations including a significantly reduced sample size. Furthermore, the essence of the sample failed to account for the influence of gender and sport type on the mediating relationships. An inclusion of the temporal influence on the mediating relationship would be recommended as it has been previously stated that burnout symptoms vary between different times in the season (Cresswell & Eklund, 2005). Therefore future research should examine the mediating effects of the coach-athlete relationship and athlete identity over time using a longitudinal research design, and also investigate the influence of gender and sport type on these mediators. The findings from the present study provide extensive support to developing a better understanding on the relationship between motivational climate, coach behaviours and predicting burnout, as it has provided evidence that the coach-athlete relationship and athlete identity provide an explanation to the relationship. Therefore it is recommended that all future studies should include these mediating variables when looking at the motivational climate, coach behaviours and burnout.

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Appendices

Appendix A – Example of Participant Information Sheet.

<u>Participant Information Sheet</u>

Examining the relationship between motivational climate, coach behaviours and predicting burnout, and if athlete identity and coach-athlete relationship mediate the relationship.

Brief background:

This study is aiming to examine the relationship between the situation, perceptions of the coach, and motivation. An additional aim of this study is to investigate how an athlete's identity and the relationship they have with their coach can protect against athlete burnout.

Therefore the aims of this study are:

   a) To investigate the relationship between motivational climate, coach behaviours and burnout.
   b) Whether athlete identity and coach-athlete relationship mediate the relationship.

<u>What would happen if you agree to take part?</u>

   1. You will be given a questionnaire booklet in which you will need to respond to in your own time.
   2. You have the right to withdraw from the study at any time
   3. All personal information will remain **completely confidential** and not shown to anybody apart from the researchers involved in the study.

<u>Are there any risks?</u>

There are no physical risks involved in this study. If any of the questions asked in the booklet cause any offense or personal emotional disengagement then you have the right to withdraw from the study at any time.

<u>What happens to the results from the study?</u>

The answers will be analysed using a statistical test using SPSS software and the names will be removed and you will not be identifiable in the results. The results may be published but no description of individual will be provided.

<u>Are there any benefits from taking part?</u>

Yes, you will gain experience in answering questionnaires and you may gain knowledge on burnout in sport.

<u>What happens next?</u>

With this information sheet you should have been given a participant consent form that you will need to fill out and hand in, to confirm that you are willing to take part in the study.

<u>How your privacy is protected?</u>

Careful steps will be taken to ensure that you are not identifiable. Consent forms will be kept for 10 years and then destroyed because it is a requirement of Cardiff Met.

<u>Further Information:</u> If you have any questions about the research or how we intend to conduct the study, please contact: Huw Rogers - @cardiffmet.ac.uk

Appendix B - Example of Participant Consent Form.

PARTICIPANT CONSENT FORM

Name / Student no: _____

Age: _____

Time Involved in sport (Years): _____

Gender: Male [   ]   Female [   ]

Participant to complete this section: Please tick appropriate box.

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

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.

3.   I agree to take part in the above study.   [   ]

Signature of Participant: _____

Date: _ _ / _ _/ _ _ _ _

Appendix C – Example of Participant Questionnaire.

Example of Questionnaire 1.

Please think about how you felt playing on your team this season. Read the following statements carefully and circle the response using the scale provided. Highlight the number which you think fully represents your response to the statement. Please answer the statements as honestly as possible; there are no right or wrong answers. **Make sure you fully complete all questions.**

Each statement begins: *On this team……*

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
1. The coach wants us to try new skills	1	2	3	4	5
2. The coach gets mad when a player makes a mistake	1	2	3	4	5
3. The coach gives most of his or her attention to the stars	1	2	3	4	5
4. Each player contributes in some important way	1	2	3	4	5
5. The coach believes that all of us are crucial to the success of the team	1	2	3	4	5
6. The coach praises players only when they outplay team-mates	1	2	3	4	5
7. The coach thinks only the starters contribute to the success of the team	1	2	3	4	5
8. Players feel good when they try their best	1	2	3	4	5
9. Players are taken out of a game for mistakes	1	2	3	4	5
10. Players at all skill levels have an important role on the team	1	2	3	4	5
11. Players help each other learn	1	2	3	4	5
12. Players are encouraged to outplay the other players	1	2	3	4	5
13. The coach has his own favourites	1	2	3	4	5
14. The coach makes sure players improve on skills their not good at	1	2	3	4	5
15. The coach yells at players for messing up	1	2	3	4	5

16. Players feel successful when they improve	1	2	3	4	5
17. Only the players with the best 'stats' get praise	1	2	3	4	5
18. Players are punished when they make a mistake	1	2	3	4	5
19. Each player has an important role	1	2	3	4	5
20. Trying harder is rewarded	1	2	3	4	5
21. The coach encourages players to help each other	1	2	3	4	5
22. The coach makes it clear who he thinks are the best players	1	2	3	4	5
23. Players are 'psyched' when they do better than their team-mates in a game	1	2	3	4	5
24. If you want to play in a game you must be one of the best players	1	2	3	4	5
25. The coach emphasises always trying your best	1	2	3	4	5
26. Only the top players 'get noticed' by the coach	1	2	3	4	5
27. Players are afraid to make mistakes	1	2	3	4	5
28. Players are encouraged to work on their weaknesses	1	2	3	4	5
29. The coach favours some players more than others	1	2	3	4	5
30. The focus is to improve each game/practice	1	2	3	4	5
31. The players really 'work together' as a team	1	2	3	4	5
32. Each player feels as if they are an important team member	1	2	3	4	5
33. The players help each other to get better and excel	1	2	3	4	5

D

Example of Questionnaire 2.

Please read each statement and indicate how regularly you feel this way when involved in your main sport. Please specify how often you have had this feeling by circling a number 1 to 5 on the scale provided. The score of 1 means, *"I almost never feel this way"* and giving a score of 5 suggests, *"I always feel that way."* Please answer each question honestly; there are no right or wrong answers. Could you also make sure you fully complete all the questions provided.

How often do you feel this way?	Almost Never	Rarely	Sometimes	Frequently	Always
1. I'm accomplishing many worthwhile things in my sport	1	2	3	4	5
2. I feel so tired from my training that I have trouble finding energy to do other things	1	2	3	4	5
3. The effort I spend in my sport would be better spent doing other things	1	2	3	4	5
4. I feel overly tired from my sport participation	1	2	3	4	5
5. I am not achieving much in my sport	1	2	3	4	5
6. I don't care as much about my sport performance as I used to	1	2	3	4	5
7. I am not performing up to my ability in my sport	1	2	3	4	5
8. I feel "wiped out" from my sport	1	2	3	4	5
9. I'm not into my sport like I used to be	1	2	3	4	5
10. I feel physically worn out from my sport	1	2	3	4	5
11. I feel less concerned about being successful in my sport than I used to	1	2	3	4	5
12. I am exhausted by the mental and physical demands of my sport	1	2	3	4	5
13. It seems that no matter what I do, I don't perform as well as I should	1	2	3	4	5
14. I feel successful at my sport	1	2	3	4	5
15. I have negative feelings toward my sport	1	2	3	4	5

E

Example of Questionnaire 3.

Using the following scale, please **circle** a number from 1 to 5 to indicate your level of agreement with each of these statements **regarding your <u>COACH</u>**. Please make sure you FULLY complete all questions.

	Never	Seldom (25% of the time)	Occasionally (50% of the time)	Often (75% of the time)	Always
1. Sees to it that every athlete is working to his/her capacity	1	2	3	4	5
2. Explains to each athlete the techniques and tactics of the sport	1	2	3	4	5
3. Pays special attention to correcting athletes' mistakes	1	2	3	4	5
4. Makes sure that his/her part in the team is understood by all the athletes	1	2	3	4	5
5. Instructs every athlete individually in the skills of the sport	1	2	3	4	5
6. Figures ahead on what should be done	1	2	3	4	5
7. Explains to every athlete what he/she should and should not do	1	2	3	4	5
8. Expects every athlete to carry out his/her assignment to the last detail	1	2	3	4	5
9. Points out each athlete's strengths & weaknesses	1	2	3	4	5
10. Gives specific instructions to each athlete as to what he/she should do in every situation	1	2	3	4	5
11. Sees to it that the efforts are coordinated	1	2	3	4	5
12. Explains how each athlete's contribution fits into the whole picture	1	2	3	4	5

F

13. Specifies in detail what is expected of each athlete | 1 | 2 | 3 | 4 | 5

14. Asks for the opinion of the athletes on strategies for specific competitions | 1 | 2 | 3 | 4 | 5

15. Gets group approval on important matters before going ahead | 1 | 2 | 3 | 4 | 5

16. Let's his/her athletes share in decision making | 1 | 2 | 3 | 4 | 5

17. Encourages athletes to make suggestions for ways of conducting practices | 1 | 2 | 3 | 4 | 5

18. Let's the group set its own goals | 1 | 2 | 3 | 4 | 5

19. Let's the athletes try their own way even if they make mistakes | 1 | 2 | 3 | 4 | 5

20. Asks for the opinion of athletes on important coaching matters | 1 | 2 | 3 | 4 | 5

21. Let's athletes work at their own speed | 1 | 2 | 3 | 4 | 5

22. Let's the athlete decide on the plays to be used in a game | 1 | 2 | 3 | 4 | 5

23. Works relatively independent of the athletes | 1 | 2 | 3 | 4 | 5

24. Does not explain his/her action | 1 | 2 | 3 | 4 | 5

25. Refuses to compromise a point | 1 | 2 | 3 | 4 | 5

26. Keeps to himself/herself | 1 | 2 | 3 | 4 | 5

27. Speaks in a manner not to be questioned | 1 | 2 | 3 | 4 | 5

28. Helps the athletes with their personal problems | 1 | 2 | 3 | 4 | 5

29. Helps members of the group settle their conflicts | 1 | 2 | 3 | 4 | 5

30. Looks out for the personal welfare for their athletes | 1 | 2 | 3 | 4 | 5

31. Does personal favours for the athletes | 1 | 2 | 3 | 4 | 5

G

32. Expressed affection he/she feels for his/her athletes

1	2	3	4	5

33. Encourages the athlete to confide in him/her

1	2	3	4	5

34. Encourages close and informal relations with athletes

1	2	3	4	5

35. Invites athletes to his/her home

1	2	3	4	5

36. Compliments an athlete for his performance in front of others

1	2	3	4	5

37. Tells an athlete when he/she does a particularly good job

1	2	3	4	5

38. Sees that an athlete is rewarded for a good performance

1	2	3	4	5

39. Expressed appreciation when an athlete performs well

1	2	3	4	5

40. Gives credit when it is due

1	2	3	4	5

H

Example of Questionnaire 4.

Please read carefully the statements below and **<u>circle</u>** the answer that indicates whether you <u>agree</u> or <u>disagree</u>. Please respond to the statements as honest as possible and relevant to how you personally feel **with YOUR PRINCIPLE COACH**.

	Strongly Agree			Moderately		Strongly Disagree	
I am close to my coach	1	2	3	4	5	6	**7**
I am committed to my coach	1	2	3	4	5	6	**7**
I like my coach	1	2	3	4	5	6	**7**
When I am coached by my coach, I am at ease	1	2	3	4	5	6	**7**
I trust my coach	1	2	3	4	5	6	**7**
I feel that my sport career is promising with my coach	1	2	3	4	5	6	**7**
When I am coached by my coach, I am responsive to his/her efforts	1	2	3	4	5	6	**7**
I respect my coach	1	2	3	4	5	6	**7**
I appreciate my coach's sacrifices in order to improve performance	1	2	3	4	5	6	**7**
When I am coached by my coach, I am ready to do my best	1	2	3	4	5	6	7
When I am coached by my coach, I adopt a friendly stance	1	2	3	4	5	6	7

Example of Questionnaire 5.

Please read each of the statements below carefully and <u>circle</u> the answer whether you <u>agree</u> or <u>disagree</u>. Please respond to the statements as honest as possible and relevant to how you personally feel.

		Strongly Disagree			Moderately		Strongly Agree	
1.	I consider myself an athlete	1	2	3	4	5	6	**7**
2.	I have many goals related to sport	1	2	3	4	5	6	**7**
3.	Most of my friends are athletes	1	2	3	4	5	6	**7**
4.	Sport is the most important part of my life	1	2	3	4	5	6	**7**
5.	I spend more time thinking about sport than anything else	1	2	3	4	5	6	**7**
6.	I feel bad about myself when I do poorly in sport	1	2	3	4	5	6	**7**
7.	I would be very depressed if I were injured and could not compete in sport	1	2	3	4	5	6	7