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**A temporal investigation of the stressors amateur
coaches experience during a 7 day competitive
cycle.**

(Dissertation submitted under the Psychology area)

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stressors amateur coaches experience
during a 7 day competitive cycle.**

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Abstract

This paper is located within the field of coaching stress, specifically stressors. The aim of the study was to explore how demands faced by amateur coaches change over a competitive cycle. 15 amateur coaches completed a total of four identical questionnaires over a one week data collection period through survey monkey; identifying the demands they were facing at the time. Results were documented on SPSS where they were analysed using non-parametric tests (Friedman's test and Wilcoxon rank test with Bonferroni adjustment). Results found five demands which showed significant changes over time, indicating that for many coaches, demands are unstable and should be constantly reappraised. The five demands were: training environment, competition environment, internal expectations, physical team preparation and match outcome. It is suggested that locating an alternate training facility could solve training and match environment demands as maintenance would become more manageable. The findings of the present study also support the need for improved forms of communication with athletes, thus overcoming the uncontrollable characteristics associated with physical team preparation. Finally, results indicate the need for goal orientation alterations within a competitive environment. The consequences of possessing outcome orientated goals have been shown to cause maladaptive behaviours, hence the requirement to promote task orientation within competitive environments.

Chapter 1: Introduction

1.0 Introduction

Within sport, success is forever growing in importance, this is due to the amplified 'win at all costs' nature within competitive environments, thus elevating the level of performance that is required to be successful. For example the tour de France, where doping has become common place amongst elite athletes striving for success (Heuberger, Cohen, Schepers, Vliegthart, Rotmans, Daniels, Burggraaf, and Cohen, 2013). Where this is an example of an illegal aid, improving the quality of coaching to gain an advantage is not. The importance of coaching and the subsequent literature base surrounding it has increased, making significant progress over the last 30 years (Lyle and Cushion, 2010). Despite the increase in coaching literature, findings have been somewhat conflicting in nature. On the one hand theorists such as Abraham and Collins (2011), along with others, hold a simplistic, reductionist epistemological view, favouring the historically accepted notion that coaching is a one dimensional linear process; belief in a 'golden formula'. Conversely, Jones (2007) and colleagues embrace a diverse, realist approach that considers the complex and ambiguous nature of coaching. This study will embrace a realist epistemology, similar to Jones and colleagues.

Previous coaching literature has underlined the coaching process to be complex because it involves a lot of uncontrollable variables. Levy Nicholls, Marchant and Polman (2009) suggest that being a coach has the potential to be extremely demanding; with various studies highlighting demands faced by coaches (e.g. Fletcher and Hanton, 2003; Olusoga, Butt, Maynard & Hays ., 2010), a number of which resulted in some individuals experiencing stress. Findings from Bowes and Jones (2006) suggest that it is predominantly uncontrollable demands which result in stress, indicating that to be successful, coaches must adapt to change, while sustaining productive interaction through stable behaviour with participants.

Similar to the coaching process, stress research is also a little inconsistent. Bull (1991) identified problems that have plagued research; reporting a lack of agreement over the meaning of stress. This is reflected through the various stress models (Fletcher, Hanton, & Mellalieu, 2006; Thelwell, Weston, Greenlees & Hutchings 2008) that were developed following the transactional stress theory proposed by Lazarus (1991).

Fletcher *et al.* (2006, pg. 329) has defined stress as “an ongoing process that involves individuals transacting with their environment, making appraisals of the situations they find themselves in, and endeavouring to cope with any issues that may arise”. In contrast to extensive literature base regarding stress within athletes (e.g. Nicholls, Polman, Levy, Taylor & Cobley, 2007), few studies have exclusively examined the stress process within the field of coaching (e.g. Frey, 2007, Thelwell *et al.*, 2008 & Olusoga, Butt, Hays, and Maynard, 2009). Furthermore this research has tended to favour the responses to stress (e.g. Olusoga *et al.*, 2010) as opposed to sources, which to date Levy *et al.* (2009) claims to have been scant. The importance of stress in coaching is huge; Kellman and Kallus (1994) postulated that stress impacts the ability to execute required coaching behaviours, resulting in reduced performance. Additionally Frey (2007) suggested that coaches’ stress levels may disrupt the quality of many athletes’ performances.

It has been suggested that stress is a process that has been characterised as changing over time (Cerin *et al.* 2000). Cerin *et al.* (2000) suggested that emotional responses are likely to change over the duration of the stress process, characterised by the fluctuating environment found within the world of elite athletes. Although the literature is scarce, there is no reason this is not the case within an amateur sporting setting, which typically contain many uncontrollable factors similar to elite sport. Future studies may wish to examine the consequences of these changes because at present literature in this field is also limited. Olusoga *et al.* (2010) highlighted the need for future research, considering coaching stress with reference to particular stages of a competitive cycle.

As mentioned above, Fletcher *et al.* (2006) defined stress as an individual transacting with their environment, indicating that stress can emerge from a number of different demands sourced from an individual’s environment. Sport psychology research has termed the presence of these environmental demands as stressors (Fletcher *et al.*, 2006). Stressor research has been divided into two regions; work/ non- work based and performance, organisational and most recently personal factors, which have been identified as the three broad classifications (Fletcher *et al.*, 2006) which tend to be implemented within sport research. The three classifications outlined by Fletcher *et al.* (2006) will be discussed in greater detail within the literature review. As mentioned earlier the stress process suggests that responses occur through the appraisal of

demands. It is therefore reasonable to assume that fluctuating stress responses could be a result of changes in demands. The aim of this study is to assess how the demands placed on a coach change throughout a seven day competitive cycle. If differences are found it may be useful for future research to examine the effects of these changing demands.

Chapter 2: Literature review

2.0 Literature review

2.1 Introduction

This chapter will be broken up into three sub sections; each logically ordered to set the scene for the proceeding study. The first section outlines the stress process, critiquing contemporary stress models which are currently operational in research today. The second section delves into the different types of stressors; competitive, organisational and personal, linking them to literature within a sporting context, specifically coaches. Following this, more specific to this study, a review of temporal stressor research is provided, leading to the aims and objectives of this study.

2.2 Stress models

The aim of this section is to briefly examine the history of stress research and evaluate its functionality within a sport setting; specifically in terms of the coach as a number of models and definitions have been implemented in previous stress research. Difficulties have emanated with the way stress terms have been conceptualised and operationalised (Woodman and Hardy, 2001b). The foundations of contemporary stress research were laid by Lazarus and Faulkman (1984) who conceived the transactional stress and coping theory. The theory postulates that psychological stress is a relationship between a person and an environment. Stress is said to occur when the person appraises their demands as exceeding their coping resources or endangering their wellbeing. Particular emphasis within Lazarus and Faulkman's work is placed on the notion that stress is an individual's perception of the psychological situation; not a result of the environmental event or the person's response. The model is composed of three subcomponents, stress, appraisal (primary and secondary) and coping (Figure 1).

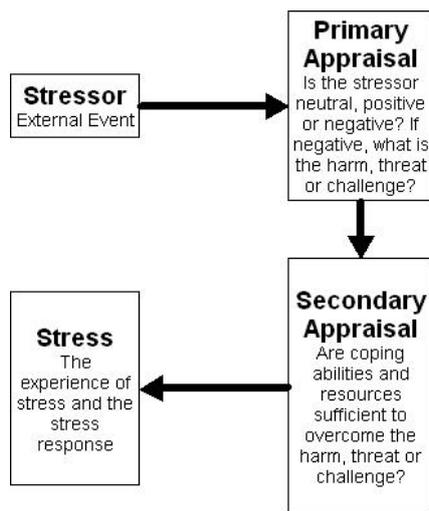


Figure 1. Stress as a Transaction (simplified) (Lazarus 1976)

A primary appraisal is said to be the perceived significance of the stressor or threatening event (Lazarus, 1999), while a secondary appraisal is the evaluation of the person's coping mechanisms in light of the proposed threat, recognising if they feel an imbalance is present (Lazarus 1991, Lazarus and Faulkman 1984). The final psychological process is coping – coping is defined by Lazarus (1999) as the constantly changing process of cognitive and behavioural efforts to manage demands that the individual deems as taxing. Coping has two main types; problem focused coping, which involves changing the reality of the relationship between the person and the environment and emotion based coping, which aims to regulate the emotions linked to stress without changing the reality of the stressful environment. The model is broken down simply for analytical reasons; Lazarus (1999) underlined that the pieces of the model belong together; forming a conceptual unit, realistic to the stress process in the real world. Although ground-breaking, the transactional stress model comes with its limitations. Empirical research providing evidence for the model is somewhat sparse. Due to its subjective nature, the variability and complexity of individual responses are extremely hard to measure consistently. A further limitation is that it does not take into account individual differences. Individual differences are likely to be influential upon stressor appraisal and subsequent emotions and behaviours, for example history of depression or whether a person is trait anxious.

Stress, as conceived by Lazarus and Faulkman's (1984) transactional stress model is defined as perceptions that demands exceed coping strategies. In constructing the transactional stress model, a number of ideas and theories were gathered from behavioural and cognitive stress literature in other domains. Behaviourist research postulates that stress is related to reward or punishment and can explain behaviour through observation. Within the transactional stress theory this relates to primary appraisals, whether or not the situation is threatening or potentially rewarding. Cognitive stress research on the other hand suggests stress occurs through manipulation of thoughts and emotions. This relates to secondary appraisals, where the athlete evaluates the problem against their potential coping mechanisms.

As could be expected, knowledge has developed since 1984 when Lazarus and Faulkman first introduced the transactional stress theory. Thus, there have been more models added, Fletcher and Fletcher (2005) introduced the meta-model of stress, which situates itself inside the transactional perspective of stress and successfully overcomes some of the highlighted limitations of the initial transactional stress model. The transactional perspective refers to the constant interaction between the different constructs within the stress model. According to Fletcher and Fletcher (2005) the meta model outlines the interactions between stress, emotions and performance in any possible circumstances, integrating the stress process with directional sport performance (how athletes interpret their emotions with regard to future performance – e.g. performers confident in ability to control and cope will experience facilitative emotion states in adverse situations). A number of theories were used as building blocks for the meta model: the conceptual model for integrating arousal construct terminology (Gould and Krane 1992), individual zones of optimal functioning model (Hanin, 1997), arousal performance model (Landers and Boutcher, 1998), cognitive motivational relational theory of emotions to sport (Lazarus 2000b), basic model of stress and coping (Jones, 2002) and perhaps most importantly the directional anxiety interpretations theory (Jones, 1991). Within anxiety research, Jones (1991) proposed the notion of anxiety direction, modifying the previously accepted CSAI- 2 questionnaire (Martens *et al.* 1990) to analyse responses to anxiety; whether performers interpret their emotions as debilitating or facilitative in respect to their future performance. The meta-model of stress contributes to knowledge significantly; Hanton

and Mellalieu (2006) state that it bridges the gap between theory and practice and allows the transfer of knowledge between mainstream and sport psychology. This is due to its non-sport related construction, using theoretical building blocks from other avenues of psychology.

The work of Lazarus and Faulkman (1984) and later Fletcher and Fletcher (2005) has formed a platform for which stress literature is able to build upon. Within a sport setting it has allowed sport psychology researchers to further understand experiences of stress within competitive sport environments through a transactional lens. Examples include Frey (2007) who looked at the stress process in regard to college coaches and Anshel and Delany (2001) who observed the stress process within male and female youth athletes. These are just two examples from a now relatively large field of literature (e.g. Anshel *et al.*, 2001; Dugdale *et al.*, 2002; Nicholls *et al.*, 2005a,b, 2006; Anshel & Sutarso, 2007; Thelwell *et al.*, 2007). These studies have provided a more complete overview of the competitive stress literature through providing awareness of why performers respond in certain ways within an environment. Studies such as Olusoga, Butt, Maynard and Hays (2010) and Nicholls, Polman, Levy, Taylor and Copley (2007) support Lazarus's notion of transactional stress, indicating that its use in this study is appropriate. Despite stress research developing significantly following the transactional stress theory, it took until Woodman and Hardy (2001) and later Hanton *et al.* (2005) to identify a lack of research regarding stressors, explaining that a broader understanding of stressors is required. An in depth discussion of these studies will take place later in this literature review.

2.3 Stressor classification

Stressor research poses an interesting concept. Defined by Fletcher *et al.* (2006) as the presence of environmental demands, there is an almost unanimous split between how stressors are categorised within previous literature. On the one hand there is work based and non- work based stressors, on the other, competitive, organisational and more recently personal stressors. Rosenthal and Alter (2012) suggest that work based stress results from a combination of high work place demands accompanied with low decision making capabilities. Using Fletcher *et al.*'s (2006) definition of a stressor, it seems reasonable to assume that in a work based context a stressor is the presence of a demand in the work place. The World Health Organisation (2003) highlighted job content, workload/ pace, working hours, lack of control, career development/ status, pay, interpersonal relationships and organisational culture as stressors found in the workplace. These were found to be supported in a number of studies (e.g., Payne, 2001; Siu, 2002). Previous literature has also recognised that stress can arise from demands that are non-work based, such as bereavement, relationship breakdowns, financial problems, personal/ family illness or commuting pressures, as demonstrated by Marchand, Beauregard and Blanc (2015) in a longitudinal study using a Canadian worker.

Although important, Scholars such as Meglino (1977) recognised that simply identifying stressors had little benefit in terms of practical implications, further research therefore strived to locate the types of stressors which affected performance. Unfortunately results were somewhat conflicting; for example a strong relationship was found between work stressors and performance by Barnes, Potter and Fiedler (1983). Conversely, Jex (1998) found the relationship to be weak. A study by Motowidlo, Packard and Manning (1986) consistently identified a negative relationship between work based stressors and performance; whereas Vandyne, Jehn and Cummings (2002) and Friend (1982) found the opposite, concluding that greater levels of workplace stressors equated to greater levels of work performance. Edwards *et al.* (2007) proposed that the conflicting results could be due to over simplistic hypotheses; failing to consider the complexity of transactional relationships between stressors and work performance, for example the effect of hardiness as a mediating variable, which Kobasa (1982) found to positively predict directional properties of stress in the workplace.

A further issue relating to this study is the classification of coaching as a job role. This study is exclusively using amateur coaches, which raises validity issues when classifying coaching as a work based or non-work based activity. This study will therefore align with Fletcher *et al.*'s (2006) alternative classification of stressors; competitive, organisational and personal. Previous literature within the sporting context has tended to organise stressors using these groups due to its improved functionality within a sport setting, examining them individually, as well as together.

2.4 Organisational stressors

Organisational factors play a major role in a performer's appraisal of stress, something that researchers had consistently overlooked (Jones, 1995). It seems fitting to begin with a brief overview of organisational stress, setting the scene before moving onto research specific to organisational stressors. An early definition of organisational stress came from Shirom (1982), who defined organizational stress as "work-related social psychological stress" (p. 21), highlighting it as a relationship between the work environment and the employee. Despite adding to knowledge at the time, the notion that organisational stress only occurs in a work related situation could be underlined as a potential limitation. In 2006, Fletcher *et al.* reconceptualised organisational stress, overcoming the aforementioned limitation of Shirom's (1982) definition, stating organisational stress is "an ongoing transaction between an individual and the environmental demands associated primarily and directly with the organization within which he or she is operating" (p.329). In addition, Fletcher *et al.* (2006) also provided a conceptual definition of organisational stressors, describing them as "environmental demands associated primarily and directly with the organization within which an individual is operating" (p. 329).

The first notable piece of organisational stress research carried out within a sport setting was conducted by Woodman and Hardy (2001a), exploring organisational stress in elite athletes. The study highlighted four main organizational stressors: environmental, personal, leadership and team issues. The study sparked the construction of a theoretical framework of organisational stress; similar to the transactional stress theory it emphasized the interaction between an individual and

sport organisation. Despite Woodman and Hardy's (2001a) work advancing the understanding of organizational stress in sport, there is a case to argue that a potential drawback to the research was their sample. Similar to Fletcher and Hanton (2003b), Hanton *et al.* (2005) and McKay *et al.* (2008) the study used only elite participants. This is slightly surprising given that emotion based research in areas such as competitive anxiety have regularly shown skill level differences across performers (Jones *et al.*, 1994; Jones & Swain, 1995). It was highlighted by Fletcher *et al.* (2012) that for sport psychologists to expand on their understanding of organizational stress then exploring experiences of amateur performers as well as elite is essential.

After locating a gap in the literature, Fletcher *et al.*'s. (2012) study aimed to closely examine the conceptual integrity of his previous organisational stress framework through the examination of organizational stressors in athletes. A second aim was to compare elite with non-elite athletes in terms of their experiences with organisational stress. This is important within this study as solely amateur coaches are being used where previous research tends to favour elite coaches. The sample consisted of 12 participants, six elite and six non elite. Findings revealed a total of 339 distinct organisational stressors, compared with 114 in a similar study that included just elite athletes (Fletcher and Hanton, 2003). However the study by Fletcher and Hanton (2003) did only use subjects from one organisation so this may have contributed to the reduced number of stressors, where Fletcher *et al.* (2012) utilised subjects from multiple organisations. Raw stressors were eventually placed into five general dimension: factors intrinsic to the sport, roles in the sport organization, sport relationships and interpersonal demands, athletic career and performance development issues, organizational structure and climate of the sport. In terms of elite and non-elite comparison, although many stressors were shared, it was found that elite performers encountered a greater volume of organisational stressors, mentioning income and funding, media attention, lack of decision making, travel and accommodation arrangements more frequently than non – elite athletes. As well as providing evidence supporting differences between elite and non-elite performers, the study has also highlighted the constantly changing nature of competitive sport. As a result, Fletcher *et al.* (2012) suggested that researchers should continue to explore different types and variations of stressors that may be prevalent in sport. They also outlined the need for a greater number of participants in studies in order to make the

data more generalisable. It is evident that the literature base has increased significantly in recent years with regard to demands in sport, however it was outlined by Fletcher *et al.* (2006) and Woodman and Hardy (2001b) that some investigators have failed to consider the origins of these demands; whether they originate from competitive or organisational sources.

2.5 Competitive stressors

As identified by Mellalieu, Neil, Hanton and Fletcher (2009) the literature base regarding competitive stress is scant; their study being the first to focus on competitive demands exclusively within a sport setting. The aim of the study was to inspect performance stressors encountered by both amateur and elite performers within a competitive environment. Mellalieu *et al.* (2009) identified two main categories beneath performance stressors; performance competition stressors and performance organisation stressors. Importantly the study was only looking at stressors within the competitive environment which justifies its inclusion within the competitive stressor section. Mellalieu *et al.* (2009) interviewed a total of 12 participants (6 elite, 6 non elite), from which 283 distinct competitive stressors were identified and were separated into the two main categories; performance competition stressors and organisation related stressors. Performance competition stressors included: preparation, expectation, injury, self-presentation, and rivalry; organisational related competition stressors comprised of: factors intrinsic to the sport, roles within the sport organization, athletic career and performance. An interesting finding was that despite highlighting many different stressors, between ability levels the number of stressors identified was similar, suggesting that both elite and amateur sport can be equally demanding. Mellalieu *et al.*'s. (2009) study aligns with previous competitive stress findings (Hanton et al., 2005; McKay et al., 2008; Thelwell et al., 2008), providing a comprehensive framework regarding performance and organisational demands within competitive stress. A limitation of the study was the use of deductive interview methods which could have overlooked demands which have not been identified in previous research.

Within the same year (2009) Olusoga *et al.* conducted a study aimed to identify stressors that coaches encountered in their coaching environment. The study utilised inductive methods to identify stressors, as opposed to deductive methods used by Mellalieu *et al.* (2009); perhaps due to conceptual differences between coach and athlete, or because at the time stressor research specific to sports coaching was scant, meaning a small literature base in which to gather information to work deductively. Ten major stressor themes emerged from the data: conflict, pressure and expectation, athlete concerns, managing the competitive environment, coaching responsibilities to the athlete, competition preparation, organizational management, sacrificing personal time, consequences of sport status and isolation; emphasizing the notion that elite coaches experience a diverse selection of stressors. The data revealed that coaches outlines their athletes as a stressor, this supports Frey's (2007) assertion that the coach athlete relationship is mutually stressful. Linking back to the work of Mellalieu *et al.* (2009), the findings of the present study support the combination of both organizational and competitive stressors within stress research.

2.6 Personal stressors

Study's investigating personal stress have been limited, with sport psychologists and practitioners having little knowledge concerning them. Fletcher *et al.* (2006) suggested that this could hamper the classification of stressors into categories. Despite this, Fletcher (2007) defined personal stressors as "an on-going transaction between the individual and their environmental demands which are primarily and directly associated with their personal life events" (p. 2). However, thus far, no empirical evidence has been identified to support this definition in a sport setting. The current literature which mention personal stressors often do so through indirect methods; labels including "off the field things", "issues at home", "relationship issues", "reduced social life", and "missing family and friends" (e.g. Giacobbi, Foore & Weinberg, 2004). Even with a lack of empirical data, personal stressors deserve a unique category in this study. As suggested by McKay *et al.* (2008), organising stressors into groups will assist understanding, making stressors easily detectible to performers and coaches as well as sport psychologists.

2.7 Temporal stressor research

It is noticeable looking at the highlighted studies above, that stressor research has developed significantly in recent years. However, a noticeable gap in the literature across all three stressor categories is observations over time, more specifically if they change over a given time frame. It was mentioned by Cerin *et al.* (2000) that temporal aspects of the stress process require further research within an athletic competition environment; this statement was also highlighted by Olusoga *et al.* (2009), stating that future research should consider coaching stress within different phases of a competitive cycle.

Research by Hanton *et al.* (2004) and Kingston, Lane and Thomas (2010) has revealed how other psychological constructs such as confidence (Kingston *et al.*, 2010) and competitive anxiety (Hanton *et al.*, 2004) change over time within athletic populations. In a sport setting stressors have only been assessed over time in one incident; Nicholls, Holt, Polman, and Bloomfield (2006) recorded stressors amongst eight elite rugby players for 28 days. Findings showed the number of stressors decreased over time, however the decrease was explained by the authors as a result of important fixtures early on in the study. Secondly the study's prime focus was not on stressors alone so little detail was available. Furthermore the stressor classification used by Nicholls *et al.* (2006) is now somewhat dated, highlighting the three main higher order themes as injury, mental error and physical error with no mention of organisational, competitive or personal stressor categories introduced by Fletcher (2006). With that in mind it would be reasonable to assume that stressors identified by coaches could also change over time, depending on the stage of competitive cycle. Therefore the aim of this study is to assess how the demands placed on a coach change throughout a competitive cycle. It was hypothesised that a number of competitive demands will increase up to/ on game day due to their particular reference to a competitive setting where a majority of the organisational and personal demands appear more general in nature and therefore are more likely to remain stable over time. It should be noted however that these are tentative predictions, this is because to the authors knowledge research regarding the temporal aspect of stressors has not previously been inspected meaning results will be novel.

Chapter 3: Methodology

3.0 Method

3.1 Participants

15 coaches agreed to participate in the study and fitted the requirement criteria. Similar to other studies of this nature, purposive sampling was used (e.g. Hanton, Thomas & Maynard, 2004). Eligibility for the study was three fold; coaches must have been 18 years or older, currently active coaches and must have been coaching a team that has regular weekly fixtures and training throughout the time of data collection. A further requirement was that they must be coaching in an amateur setting, this was determined by whether their coaching role provided their main source of income. The mean (\pm SD) age of the group was 27 ± 11.2 years with an average (\pm SD) of 8.9 ± 8.4 years coaching experience. Coaches from many different sports were recruited in order to maximise the number of participants. Of the 15 participant 5 coached football, 5 hockey, 3 Rugby and 2 netball. Hanton, Jones, and Mullen (2000) and Martens, Vealey, and Burton (1990) indicated that different sports, and the different individuals involved in them elicit different stress responses. Using Lazarus's definition of stress; demands, along with characteristics of the individual influence the stress response, therefore a demand change over time comparison between different sports could be appropriate with a larger sample size that holds more power.

3.2 Instrumentation

It has been reported by Hanton, Thomas and Mellalieu (2009) and Thomas, Picknell and Hanton (2011) that memory bias affects recall, finding differences between actual and retrospective data collection methods. Put simply, differences between answers gathered directly after/during an event were identified to be different to when identical questions were asked about the event after a prolonged time frame. As a result, a strength of the work by Kingston, Lane and Thomas (2010) was the efficient collection of data; giving them a reliable state measure of participants sources of confidence. Kingston *et al.* (2010) used a temporal repeated measures design, gathering data at their desired intervals (6 weeks, 4 weeks, 3 weeks, 2 weeks and 1 week before competition). A similar design will be used in this study, exploiting a repeated

measures design. Coaches will complete multiple questionnaires throughout a cycle (cycle = from 1 fixture to the next, in this case a weekly fixture. e.g. Saturday to Saturday). The questionnaire will be completed by participants four times throughout the week: Monday, Wednesday, Friday and Game day. Each participant will be asked to complete questionnaires for one full cycle. The questionnaire included three questions, the first containing a list of organisational demands that the coach could be facing at that time, the second and third questions were identical in nature, identifying competitive and personal demands. The list of demands within each question were gathered from research conducted by Fletcher and Hanton (2003), Thelwell *et al.* (2008) and Olusoga *et al.* (2009) who located exhaustive lists of stressors through qualitative methods. With some of the demands overlapping, and others differing slightly from paper to paper the lists of relevant demands were picked by the lead investigator. Due to the aforementioned papers not being identical to this study, specifically using amateur coaches, some of the findings from them were irrelevant, which consequently swayed the decision to categorically pick demands rather than using the respective exhaustive lists which would have significantly increased the time taken to complete the questionnaire. All questionnaires were completed electronically through survey monkey, accessible via a computer or even a smartphone. It should be noted that a critical aim of the questionnaire used in this study was to minimise completion time whilst still gaining quality information; consequently allowing participants to complete it as quickly and easily as possible and avoid unneeded intrusion.

3.3 Procedure

After gaining ethical approval from the institution, participants were recruited via email. The email included an information sheet; explaining the purpose of the study and a brief explanation of what would be required from them. Emphasis was placed on the anonymity of the study and their right to withdraw at any moment; the main investigator's contact details were added in case of any queries. With so little information required from the participants, a consent form was not required. Once participants had received the email, responsibilities in completing the questionnaires at the correct times were left down to them. After completing each questionnaire the

results were automatically saved to the survey monkey database for the lead investigator to use once sufficient data had been collected.

3.4 Data analysis

Data was first coded into SPSS where it could be further analysed. With only 15 participants the power of the sample was relatively weak, meaning parametric analysis tests were not suitable (Lehmann, 1998). Additionally, parametric tests are not commonly used when analysing nominal data (Bren School, Cited 13/02/2016). Consequently, to avoid violating statistical assumptions, non-parametric tests were used to analyse the data. Firstly, Friedman's test was run on each stressor category to expose significant differences within the four time periods. Friedman's test does not require the data to be normally distributed and can be used for repeated measures on three or more different occasions, in this case each stage of the one week cycle ($\alpha=0.05$). After differences were found the Wilcoxon signed rank test with Bonferroni correction ($p<0.008$) was used as a post hoc test to pinpoint where within the four time frames the significant differences were situated.

Chapter 4: Results

4. Results

As mentioned in the methods section, non-parametric tests were used to analyse the data, this was because the study only used 15 participants, a small sample. The results section begins with Friedman test scores, Friedman's test was used to identify whether significant differences lie between any of the different time frames for each potential demand. Following this, results for the Wilcoxon rank test with Bonferroni adjustment are listed; this test specifically locates where, if any specific differences lie, in this case between which days are demand scores significantly different. The final data included in the results section is descriptive statistics for the individual stressor categories (organisational/ personal and competitive) between the four cycle stages. Throughout the results section, significant differences according to test procedures are highlighted in yellow.

4.1 Friedman's test.

Friedman's test was used to detect significant differences in demand changes over the different stages in the one week cycle. The test was run using a 95% confidence level; Zar (1984) outlined this to be acceptable in representing the true mean of the sample population in applied practice.

4.1.1 Organisational stressors

Table 1. Friedman test significance scores for organisational demands

Demand	Friedman test Significance (95% confidence level)
Team selection	0.815
Club financial issues	0.172
Training environment	0.024
Travel	0.261
Competition environment	0.003
Other coaches	0.599
Your coaching style	0.127

Team atmosphere	0.682
Support network	0.343
Roles	0.455
Communication	0.212
Player injury	0.106
Player returning after absence	0.069
Other (O)	1

Within the organisational stressor category Friedman's test located two demands which showed significant difference ($p < 0.05$) over time, Training environment ($p = 0.024$) and competition environment ($p = 0.003$).

4.1.2 Personal stressors

Table 2. Friedman test significance scores for personal demands

Demand	Friedman test Significance (95% confidence level)
Team goals	0.096
Personal Goals	0.534
Personal Expectations	0.158
Personal finances	0.187
Support system (Outside)	0.337
Social life	0.308
Contractual issues	1
Sacrificing personal time	0.108
Other (P)	0.733

Within the personal stressor category Friedman's test located no demands which showed significant difference ($p < 0.05$) over time.

4.1.3 Competitive stressors

Table 3. Friedman test significance scores for competitive demands

Demand	Friedman test Significance (95% confidence level)
Physical team preparation	0.011
Mental team preparation	0.125
Technical team preparation	0.425
Tactical team preparation	0.425
Player injury	0.351
Internal expectations	0.043
Opponents ability	0.534
Opponents behaviour	0.066
New opponents	0.337
Match performance	0.122
Match outcome	0
Other (C)	1

Within the competitive stressor category Friedman's test located three demands which showed significant difference ($p < 0.05$) over time, physical team preparation ($p = 0.011$), internal expectations ($p = 0.043$) and match outcome ($p = 0.00$).

As mentioned above, demands highlighted in yellow showed significant differences when Friedman's test was used. This means those demands, according to Friedman's test change over time to a level which indicates the difference is unlikely to be a result of chance (95% confidence level). As a result those demands were consequently eligible for the Wilcoxon rank test with Bonferroni adjustment. Those demands which did not meet the significant threshold level in the Friedman's test were not analysed using the Wilcoxon rank test. Although in many cases differences were present to some extent they did not meet the 95% confidence level which suggests differences have an increased likelihood to be a result of chance. The Wilcoxon rank test was used as a post hoc test; used to confirm differences found in the primary difference

test (Friedman’s), for this reason those demands which did not meet significance levels using Friedman’s test were not analysed using the Wilcoxon rank test.

4.2 Wilcoxon rank test with Bonferroni adjustment

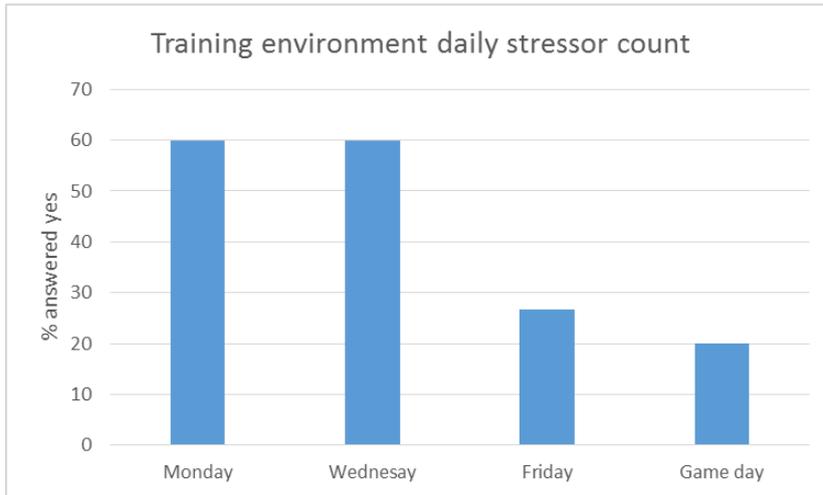
To examine where the differences actually occur over the four time frames, a Wilcoxon signed-rank test was run on the different day combinations (e.g., Monday Vs Game day) of demands which showed significant difference in the Friedman test. Because multiple comparisons were made on the demands across the time periods a Bonferroni adjustment was required to avoid making type 1 errors. After the Bonferroni adjustment the significance level was $0.05/6$ (6 = number of tests – as recommended by Laird statistics, cited 23/02/2016) = 0.008, meaning that if the p value exceeds 0.008 the result is not statistically significant.

4.2.1 Training environment

Table 4. Training environment demand Wilcoxon rank test scores with Bonferroni adjustment.

	Mon - Wed	Mon - Fri	Mon - Game	Wed - Fri	Fri - Game	Wed - Game
Significance	1.000	.059	.014	.059	.655	.034

Statistically there was no significant differences in training environment stressors over the four time periods. Post hoc analysis using the Wilcoxon sign rank test with Bonferroni correction resulted in a significance level of $p < 0.008$ which was not met by any of the time frame comparisons.



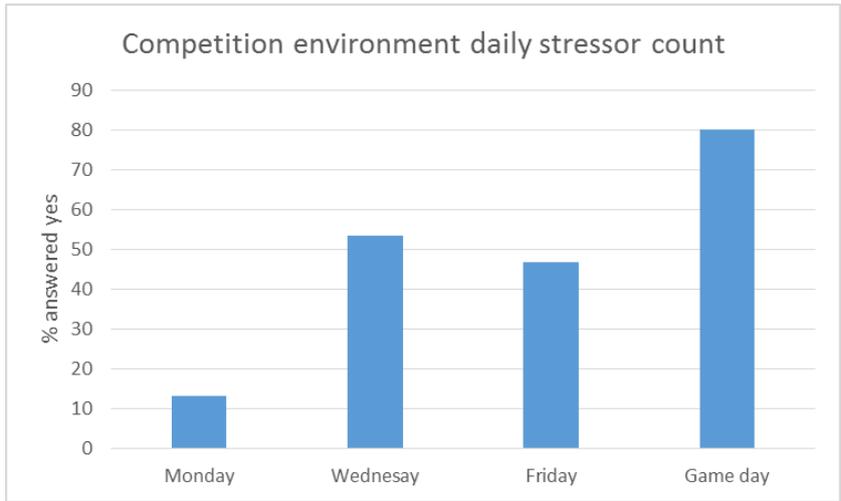
Graph 1. Training environment stressor count against day of week.

4.2.2 Competition environment

Table 5. Competition environment demand Wilcoxon rank test scores with Bonferroni adjustment.

	Mon - Game	Mon - Fri	Mon - Wed	Wed - Fri	Wed - Game	Fri - Game
Significance	.002	.096	.034	.655	.102	.025

Statistically there was a significant difference in competition environment stressors between Monday and Game day. Post hoc analysis using the Wilcoxon sign rank test with Bonferroni correction resulted in a significance level of $p < 0.008$ which was met by the Monday to Game day comparison ($p = 0.002$). None of the other time frame comparisons met the required level suggesting no other significant differences.



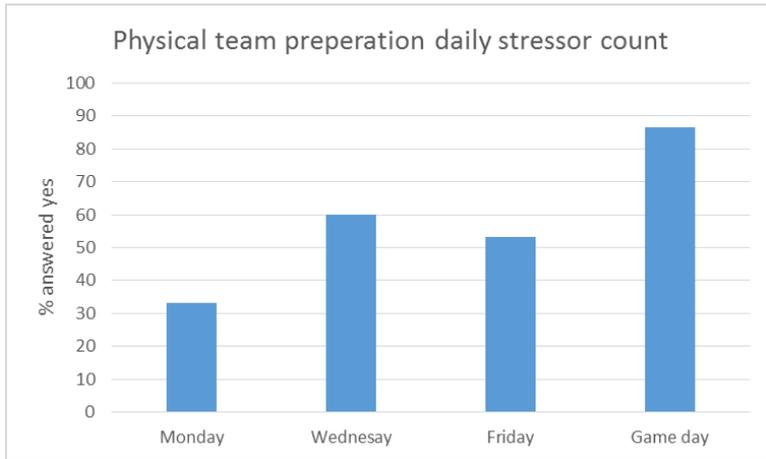
Graph 2. Competition environment stressor count against day of week.

4.2.3 Physical team preparation

Table 6. Physical team preparation demand Wilcoxon rank test scores with Bonferroni adjustment.

	Mon - Wed	Mon - Fri	Mon - Game	Wed - Fri	Wed - Game	Fri - Game
Significance	.102	.180	.005	.705	.046	.025

Statistically there was a significant difference in physical team preparation stressors between Monday and Game day. Post hoc analysis using the Wilcoxon sign rank test with Bonferroni correction resulted in a significance level of $p < 0.008$ which was met by the Monday to Game day comparison ($p = 0.005$). None of the other time frame comparisons met the required level suggesting no other significant differences.



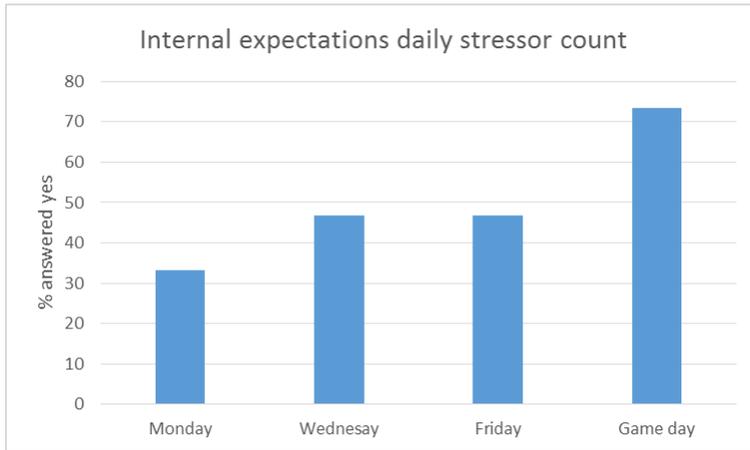
Graph 3. Physical team preparation stressor count against day of week.

4.2.4 Internal expectations

Table 7. Internal expectation demand Wilcoxon rank test scores with Bonferroni adjustment.

	Mon - Wed	Mon - Fri	Mon - Game	Wed - Fri	Wed - Game	Fri - Game
Significance	.414	.317	.014	1.000	.102	.046

Statistically there was no significant differences in training environment stressors over the four time periods. Post hoc analysis using the Wilcoxon sign rank test with Bonferroni correction resulted in a significance level of $p < 0.008$ which was not met by any of the time frame comparisons



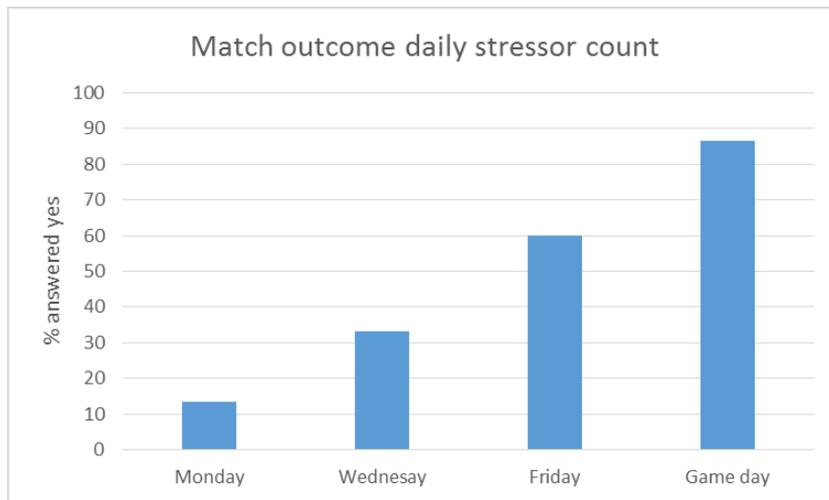
Graph 4. Internal expectation stressor count against day of week.

4.2.5 Match outcomes

Table 8. Match outcome demand Wilcoxon rank test scores with Bonferroni adjustment.

	Mon - Wed	Mon - Fri	Mon - Game	Wed - Fri	Wed - Game	Fri - Game
Significance	.180	.020	.001	.102	.011	.046

Statistically there was a significant difference in match outcome stressors between Monday and Game day. Post hoc analysis using the Wilcoxon sign rank test with Bonferroni correction resulted in a significance level of $p < 0.008$ which was met by the Monday to Game day comparison ($p = 0.001$). None of the other time frame comparisons met the required level suggesting no other significant differences.



Graph 5. Match outcome stressor count against day of week.

4.3 Stressor type cumulative descriptive statistics

Table 9. Shows mean percentages of the three stressor types; organisational, personal and competitive for each day.

Stressor type	Mon	Wed	Fri	Game
Organisational	37%	43%	38%	34%
Personal	34%	40%	35%	43%
Competitive	31%	42%	46%	59%

Both organisational and personal stressor counts stay relatively stable over the one week cycle with ranges of 9%. Competitive stressors however appear to collectively change over the one week cycle with a range of 28%.

Chapter 5: Discussion

5.0 Discussion

5.1 Introduction

The aim of the study was to identify if demands faced by coaches change over time using a one week, game to game cycle. Findings suggest that significant changes over time occur in training environment, competition environment, physical team preparation, internal expectation and match outcome demands. In line with the hypothesis three of the five demands which changed over time are situated within the 'competitive' category. Other temporal findings indicate that organisational and personal demands tend to remain relatively stable over time, whereas competitive demands appear to become more frequent as competition nears. The results also highlighted team selection, team atmosphere, communication, team goals, personal goals, personal expectations, technical team prep and tactical team prep as the most commonly cited demands across the combined time periods. Least cited demands were identified as club financial issues, travel, personal finances, contractual issues and opponent behaviour. Finally, stressors mentioned within the 'other' demand questions were recruitment, work demands, home issues and housing problems. The following discussion will begin by exploring the aforementioned findings and attempt to explain them using peer reviewed literature. Practical implications of the data will then be suggested, followed by limitations of the study and directions for future research.

5.2 Findings

5.2.1 Demands that changed over time

According to Friedman's test and the follow up Wilcoxon rank test, match outcome between Monday and Game day showed significant difference over time. Results revealed that match outcome demands increase up to and on game day. Olusoga *et al.* (2009) identified that elite coaches also reported the pressure of producing results, however issues were usually attributed to employment and funding from their governing bodies, which in an amateur setting does not apply. Furthermore, the present study exposed contractual issues as one of the least cited stressors over the one week cycle which further supports the rejection of match outcome demands due

to employment and funding issues. A possible explanation for match outcome demands increasing over time in amateur coaches is the coach's heavy investment within the team and endeavour for success. With no wages or funding, amateur coaches are likely to be intrinsically motivated to coach at least a majority of the time, doing it for the 'love of the game'. However, success is desirable for all teams and often can enhance the atmosphere amongst the team, which was highlighted as a commonly cited demand in this study. Hardy, Jones and Gould (1996) identified that individuals may be high or low in both task and ego orientation simultaneously in any given situation, which could help explain their concern regarding the outcome of the match. Campbell and Furrer (1995) stated that competition can be dysfunctional for already established goals, potentially causing an individual's goal orientations to change and therefore adjust their goals. For example the coach may generally focus on process goals such as technical or tactical team preparation, which were both identified as commonly cited demands within this study. However, in the light of competition the coach may avert to outcome goals due to the dysfunctionality of the previously held process goals, explaining the increase in match outcome demands on game day.

Similar to match outcome, another demand which significantly changed over time was internal expectations. It should be noted however that although significant using Friedman's test, no between time frame values were significant using the Wilcoxon rank test. In elite coaches Olusoga *et al.* (2009, p447) found that the "desire to see results from hard work" was a common source of self-imposed pressure. Considering this in conjunction with the aforementioned match outcome demands provides a logical explanation for its increase as game day approaches. There are likely to be other sources which form internal expectation demands for the coach, for example expectation from previous success or expectations of athletes in training (Mellalieu *et al.* 2009) but its increase parallel to competition indicates that many of a coaches internal expectation demands arise from outcome related sources.

Results also point out that playing surface demands change over the given time periods. Both competition environment and training environment highlighted

significant differences using Friedman's test, although only competition environment met the required level of significance on the Wilcoxon rank test, therefore results related to training environment should be approached with caution. Competition environment revealed a significant difference between Monday and game day values, revealing that competition environment stressors increase as game day approaches. Training environment demands on the other hand appear to reduce as game day approaches, likely due to most teams training early on in the week (Mon - Weds). In elite coaches Thelwell *et al.* (2008) identified facilities as a main source of stress within both competition environment and training environment demands. Where elite teams often have separate facilities for training and matches, amateur teams typically have one facility that must act as a training and competition environment. The BBC (cited 08/03/16) revealed that poor facilities has resulted in a sharp decline in people playing amateur football which is particularly relevant to this study where a third of the coaches were football centred. Consequently It is easy to see how this could be a demand for amateur coaches, struggling to maintain the quality of the pitch with so much use, especially in the winter months with poor weather. This will be exacerbated with the added demand of players dropping out due to poor facilities. Considering a large percentage of the sample in this study were from rugby and football (played on grass pitches) it would be a logical explanation for the changes in competition and training environment demands to increase on their appropriate days, coming to training or match days knowing the playing surface will be below par.

Another possible explanation is the organisation of equipment and resources for training and games. Thelwell *et al.* (2008) highlighted equipment and resources as sources of stress for both training and competition environments for elite coaches. It would be reasonable to assume that these demands would only be appraised near the relevant training session or match by the coach should they not feel fully prepared, thus explaining the increase of training environment and competition environment demands closer to their relevant days.

The final demand which significantly changed over time, meeting required Friedman test and Wilcoxon rank test significance thresholds was physical team preparation. As well as being a source of stress for athletes (Mellalieu *et al.* 2009) Thelwell *et al.* (2008b) also highlighted competition preparation demands as a source of stress for coaches. It was highlighted by Gamble (2010) that the importance of physical

competence within sport is becoming increasingly significant, indicating that identifying physical preparation as a demand is warranted by coaches. A possible reason for physical team preparation demands changing over time is the notion of inadequate physical team preparation and lack of recovery. Unless injury related a coach is unlikely to worry about the physical readiness of their players in the few days following a match (Nixon, 1994). Players are expected to be sore due to investing a lot of effort, and not until game day approaches will the coach begin to appraise the physical preparation/ readiness of their team, especially within amateur teams where contact time is minimal. At this point demands are likely to be high due to the lack of control the coach possesses over the situation (Bowes and Jones, 2006).

5.2.2 Demands that remained stable

It is important to note that demands that remained stable throughout the cycle could be of equal significance as those who showed change over time. A high result on Friedman's test (close to 1.0) shows little difference between any of the time frames, indicating that the demand stayed relatively constant over time. Team selection was one demand which scored highly; Thelwell *et al.* (2008) identified team selection as a stressor for elite coaches. Team selection for the coach can occur in two stages, firstly picking the match day squad, usually completed after training days and secondly picking the starting team which is typically picked close to or on match day. This could explain the relative stability of team selection over the one week cycle.

Team atmosphere demands also remained consistent over time. It would be reasonable to assume that team atmosphere is an important factor throughout the playing season, not only because of performance enhancements but due to the cohesive/ family nature of most amateur squads (Zaccaro, Blair, Peterson, & Zazanis, 1995). Thelwell *et al.* (2008) mentioned arguments between athletes as the most cited team atmosphere related source for elite coaches which undoubtedly would affect the cohesiveness of the team. Most amateur teams will meet twice a week (training and game) meaning team atmosphere demands will remain fairly stable for the coach, whose responsibility it is to manage any team atmosphere issues. The final demand identified in this study that remained stable according to Friedman's test was 'other coaches'. Tension between coaches was highlighted by Thelwell *et al.* (2008) as by far the most commonly cited source of 'other coach' stressors by elite coaches; this

could provide a logical explanation as to why it remained constant over time. Disagreements over team selection, training methods, match preparation and tactics, which as mentioned earlier do not all occur at the same time could explain the unwavering nature of other coach demands.

As defined by Fletcher *et al.* (2006) stressors were separated into three categories; organisational, competitive and personal. The three stressor categories were divided within this study with the use of three separate questions, one for each demand category. Findings indicate that while organisational and personal demands remained similar over time, the number of competitive demands increase as competition nears. Nicholls *et al.* (2005) found that during important competitions of the season adolescent golfers described more stressors. Data in this study furthers knowledge in this area, demonstrating that the increase in stressors near competitions may be attributed to competitively sourced demands rather than organisational or personal. It should be noted however that the study did not initially aim to identify cumulative stressor frequencies and was very much a secondary aim. Future research may wish to use a more rigorous state demand measure to identify if the broad stressor categories change over time. The data in this study also identifies with the work of Mellalieu *et al.* (2009) who found the existence of both organisational and competitive stressors within stress research. This study also identified the existence of personal stressors, indicating its continued inclusion within coaching stress research is warranted. Interestingly a majority of the 'other' listed demands fall into the personal stressor category; work demands, home issues and housing problems. It appears that within the personal demand question some key demands were overlooked, perhaps due to a lack of conceptual clarity and small research base to gather demands from.

5.2.3 Frequently cited demands

Frequently cited demands are also an important factor within the current study and could act as an indicator for the reliability of the results; whether they align with the previous coaching stressor identification literature (e.g. Olusoga *et al.*, 2009, Frey, 2007, Thelwell *et al.*, 2008). Within this study demands most commonly cited were team selection, team atmosphere, communication, team goals, personal goals, personal expectations, technical team prep and tactical team prep. It should be noted

that recent stressor identification literature using amateur coaches is scant. Therefore, supporting literature will be from stressor source research outside of the amateur coach field and should be interpreted with caution. Team selection has been commonly identified as a demand in previous coaching stressor literature (Sullivan and Nashman, 1993, Gould *et al.*, 2002). Team selection was underlined as the most commonly cited demand in this study; Thelwell *et al.* (2008) identified a number of sources which could explain team selection demands for amateur coaches; lack of flexibility for selection and inability to drop players. Results from this study demonstrate that recruitment is a demand faced by amateur coaches. This could indicate squad sizes are small which would limit the option of making team changes. Although this reduces conflict over dropping players, the consequence of poor results due to lack of strength and depth in the squad is likely to cause tension. As previously mentioned it is likely that coaches have strong personal relationships with many of their players, this in itself is likely to make dropping/ leaving players out a common demand.

In accordance with Frey (2007) communication was also identified in this study as a frequent demand. Despite using college coaches who received a salary, coaching is unlikely to have been their main paid service. For this reason the participants used by Frey (2007) are likely to share many demands with the amateur coaches in this study. Where Frey (2007) used American university coaches, many of the coaches in this study were from British universities and thus likely to share numerous characteristics; for example communication demands. The most commonly cited source of personal expectation stressors by Olusoga *et al.* (2009) was the notion that ultimately the performance of athletes is out of the coach's control, which could be equally true for the amateur coaches in this study.

Finally, technical and tactical preparation were also highlighted as frequently cited stressors in the present study. Preparation has also been mentioned as a demand for elite coaches (Olusoga *et al.*, 2009), ensuring players are technically sound as well as up to speed on the desired tactics employed by the coach for the upcoming fixture. Furthering this, team goals and personal goals were also frequently cited in this study. Fletcher *et al.* (2012) identified unclear personal goals and lack of clarity about team goals as common sources of stress for elite athletes. Considering the direct responsibilities of the coach to outline individual and team goals it comes as no

surprise that team goal and personal goal demands were cited by amateur coaches in this study, especially when communication demands were also reported.

5.2 Practical implications

For coaches in the present study the findings suggest that there are multiple demands which change over time. This finding highlights the requirement for continued reappraisal of demands and possible subsequent changes in coping mechanisms according to different stages within a coach's competitive week. Coaches reported competition environment and training environment as demands which were cited most commonly at time frames closer to their specific days (training day/ match day). A possible solution for these demands would be to hire an external facility, reducing the workload on the game pitch meaning maintenance would become more manageable. A possible draw back would be the cost, however club financial issues were identified as a least cited demand in this study, indicating that hiring an external training facility would be feasible. It should be noted however that while club financial issues were not commonly cited by coaches they could still be a concern; coaches may not have listed them as a demand as they have little knowledge on the financial situation of the club.

Participants also highlighted physical team preparation as a demand which increased nearing competition, potentially due to lack of recovery. A logical solution for this would be to communicate with players more often, allowing the coach to monitor athlete's fitness and introduce extra recovery measures if necessary. A possible issue arises with communication, which was a commonly cited demand in this study. Frey (2007) suggested the use of communication skills training and helping coaches become more aware of different communication techniques could aid coaches with communication issues. These interventions could to some extent be useful in this context. With some coaches being older, an introduction to chat groups or group messages for example may overcome communication issues with players, especially as competition nears and direct contact is limited.

Internal expectation and match outcome demands were also found in this study to change over time, the change over time is thought to be a result of outcome related

sources, indicating that the coaches in this study become more outcome orientated as competition approaches. Outcome orientation has been linked with burnout: physical/emotional exhaustion, sport devaluation, and reduced sense of accomplishment (Vitali, Bortoli, Bertinato, Robazza and Schena, 2015). In amateur coaches, where competence levels are unlikely to be high, performance orientation is even more likely to cause maladaptive outcomes (Williams and Gill, 1995) which is particularly relevant for this study. Coaches in this study may find benefit in manipulating their goal perspectives, from outcome related to task related as match day approaches. Coaches should begin with adapting the way in which they judge success, setting process and performance goals. Performance goals will indicate their level of performance based on themselves, rather than using normative feedback and judging success on results.

5.3 Limitations

An obvious limitation of this study is the small sample size. With only 15 participants the reliability of the results is limited and hold little statistical power (Everitt, 2002). Additionally the small sample required the use of non-parametric tests, which in comparison hold less statistical power than their parametric counterparts. In hindsight a greater sample size would have been used in this study. However, the largest challenge during the study was recruiting coaches, particularly those with the commitment to complete the questionnaire over all the time periods. Despite the small sample size it should be reminded that a 95% confidence interval was employed in this study, meaning demands which met the required significance levels are 95% likely to be due to changes over time and not chance.

The inclusion of multiple team sports increases the generalisability of the results to a wide variety of coaches. Unfortunately with the small sample and heavy favouring of football and hockey meant that individual differences are likely to have had an effect. For example the results may not represent a true indication for netball coaches where only two coaches participated. Another possible weakness of the current study is the quality of the questionnaire; with a lack of previous literature on amateur coach stressors the list of demands had to be taken from previous elite coach and performer stressor research. Some demands were purposively left out by the lead researcher as

they were deemed irrelevant; for example demands specific to an elite sport setting. The frequent use of 'other' categories indicates that demands were missed in the questionnaire. It is likely that even participants who did not add 'other' demands may have had they been included in the primary lists. Despite this, as previously mentioned the majority of the demands mentioned in the 'other categories' were personal related where there is a dearth of literature in any sport context (e.g., Fletcher *et al.* 2006, Mckay *et al.*, 2008).

A final possible limiting factor of this study was the short one week data collection window. It is likely that demands may change differently during other weeks, depending on the fixture and other external factors. However, the 7 day pre-competition period provides a micro level perspective which has not been explored in previous research and was deemed an important line of enquiry based on the research in this area (e.g., Olusoga *et al.*, 2009). Moreover, the largest challenge during this study as mentioned previously was recruiting coaches. Increasing the data collection period, for example two weeks would result in even less participants, further decreasing the power of the data.

5.4 Recommendations for future research

A fundamental piece of research to be completed following this study is the qualitative analysis of demands and how they change over time. This would provide data regarding why changes occur and will assist researchers and practitioners on possible intervention strategies. Previous stressor research (e.g., Fletcher *et al.*, 2012) suggests differences between elite and amateur coaches do exist, therefore subsequent research should also compare elite and amateur coaches with reference to demand changes over time. While the current study included multiple sports the sample size was limiting and all sports were team orientated. It would be beneficial to conduct a more in depth study looking specifically at demand changes over time between different sports; for example team Vs individual, gross Vs fine or open Vs closed amongst others. The sample size should be increased significantly, thus improving generalisability and statistical power of the findings. Differences between demands over time for gender and years coaching experience would also be interesting topics for future research. Another potential area for future research is the

notion of whether demand changes are perceived as beneficial or limiting to coaches. The Meta model of stress by Fletcher (2006) incorporates a directional hypothesis; an interesting line of enquiry would be to observe the mediating effect of temporal demand patterns on perceived performance benefits or limitations for coaches. Again this would assist practitioners on potential intervention strategies. Finally, the formation of a specific state demand identification questionnaire is critical to the quality of future research. Currently no such questionnaire exists which has resulted in a validity issues and affected the ability to compare across previous studies.

Chapter 6: Conclusion

6.0 Conclusion

The aim of this study was to assess how the demands placed on a coach change throughout a competitive cycle, something that thus far has not been attempted in any other studies. Despite identifying it as a path for future research (Olusoga *et al.* 2009) previous studies have not explored the temporal patterns of stressors, meaning until now research has inadvertently characterised stressors as stable over time. Findings from this study indicate that a number of demands faced by amateur coaches do change throughout a competitive cycle. This result could have extremely important practical implications for coaches. The results found in the present study indicate the constant need for coaches to reappraise their demands, even at a day to day level where this study has shown demands can change significantly over a short micro level time frame. Consequently this will allow coaches to frequently re-evaluate their coping mechanisms and ensure no imbalances are present. It could also avoid debilitating stress responses and decrease the likelihood of burnout.

It should be noted however that although separated in this study stressors are not exclusive to one another and in a practical situation would be experienced in combination, which could cause slightly different results. From a transactional stress viewpoint these demands are part of a dynamic stress procedure. Responses to such a combination of stressors and the coping mechanisms of coaches are likely to be slightly more complex than presented in this study. Despite this, the acceptance of these categories is overwhelming, with many stressor papers adopting the organisational and competitive classifications (e.g. Olusoga *et al.* 2009 and Thelwell *et al.* 2008). As mentioned previously there are a number of avenues which warrant further research; however in light of this study there appear to be two which stand out. The first is the formation of a specific state demand identification questionnaire. Currently no such measure exists, resulting in validity issues as well as affecting the ability to compare across studies. Of equal importance is the need for a qualitative investigation into the temporal patterns of stressors; identifying why demands change and thus giving a good indication of suitable intervention strategies.

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Appendix

Appendix 1 (Participant information form)

Information and form.

Thank you for considering to take part in the study. Stress in coaching is an important, yet largely disregarded subject, that until recently has slipped under the radar of rigorous research. The demands placed on us as coaches are constantly changing and therefore our levels of stress differ accordingly. My study aims to identify how stressors (Things that make us stressed) change over a competitive cycle. Your participation is completely voluntary, you are also free to withdraw at any moment, without reason (Not complete all of the 4 questionnaires).

This form is aimed to inform you of the details of the study, allowing you to make an informed decision as to whether you would like to take part. Any questions feel free to contact me.

What do you have to do?

I would like you to complete a questionnaire 4 times over a one week period, helping me understand what demands coaches are under throughout a competitive cycle and how they change. Please note that there are no right or wrong answers, so please answer as honestly as you can. The questionnaire simply includes different types of demands that have been outlined in previous research looking at stressors in coaching, you simply just tick the ones which feel apply to you at the moment in time. In this case a cycle consists of one week. You will be required to complete the questionnaire on Monday, Wednesday, Friday and Sunday through one week (Click the link below, complete and press submit on each day). Each should take approximately 5 minutes.

How will your data be used?

Your data will be used in a number of ways:

1. To write up a research article which will be used for my undergraduate dissertation project.
2. Provide data which can be used to further knowledge regarding stressors in coaching in the future

Will my data and taking part be confidential?

Data will be confidential throughout. The logistics of the study mean that no personal details will ever be required, meaning you will be anonymous throughout. Additionally only me (the investigator) will have access to your personal results.

What can I gain from taking part in the study?

Taking part in this study will increase your awareness of the demands you face in regard to your coaching; this could allow you to plan and implement interventions to overcome them. If these demands are causing you stress which is impacting you negatively, this could have a beneficial effect not just to the performance of your team but to your personal life too.

Your rights

As a participant your participation is completely voluntary. You are also free to withdraw at any moment, without reason (Not complete all of the 4 questionnaires).

Potential risks

The questionnaire may cause you to appraise potentially stressful thoughts, which could cause discomfort. If this occurs then do not feel obligated to complete the remainder of the questionnaires, you are free to withdraw at any point without reason or notice.

What next?

If you are happy with the details of the study and are happy to participate the links to questionnaires are listed below (As well as attached to the Email). Any queries/questions feel free to contact me @ outlook.cardiffmet.ac.uk

Thanks

Sam Loud

Monday: <https://www.surveymonkey.co.uk/r/2QCHKVG>

Wednesday: <https://www.surveymonkey.co.uk/r/2W3SCJH>

Friday: <https://www.surveymonkey.co.uk/r/2SZ9KT3>

Game day: <https://www.surveymonkey.co.uk/r/2T376KF>

Appendix 2 (Questionnaire)

1. Age?

2. What sport do you coach?

3. Years coaching experience?

4. What Organisational demands are you facing at this time?

- Team Selection
- Club financial issues
- Training Environment
- Travel
- Competition environment (Facilities, Rules, Distractions, Equipment etc.)
- Other coaches (Communication, inadequacy etc.)
- Your coaching styles

-
- Team atmosphere
 - Support network (Within the club - lack off? Conflict?)
 - Roles (Players and support staff etc.)
 - Communication (Players, support staff ect.)
 - Player injury (Outside of sport)
 - Player returning after absence (Injury, holiday etc.)
 - Other (please specify)

5. What Personal demands are you facing at this time?

- Team goals (Working towards same goals?, lack of shared goals? etc.)
- Personal goals (impacting positively on the team etc.)
- Personal expectations (League position, training effort ect.)
- Personal finances
- Support system (Outside of club)
- Social life
- Contractual issues

Sacrificing personal time

Other (please specify)

6. What Competitive demands are you facing at this time?

Physical team preparation

Mental team preparation

Technical team preparation

Tactical team preparation

Player injury

Internal expectations

Opponents ability

Opponents Behavior

New opponents

Match performance

Match outcome

Other (please specify)