Side effects of being tired
Burnout among Swedish sport coaches

Erik Lundkvist
In memory
Emma Lundkvist
Acknowledgements

In June 1998 I drove my father’s green Volkswagen van out of town I promised myself never to go back to. EVER! After two semesters at Umeå University I thought I was done with that hell hole of a town in the middle of nowhere. Twelve years later I broke that promise. I drove the largest truck you are allowed to drive with a regular driver’s license in Sweden north from Stockholm towards my new home, Umeå. I was totally terrified, not only because of the slippery road and bad weather (minus 15 degrees Celsius and a heavy snow fall), mostly because I had no idea what I was getting myself into more than I was becoming a PhD student at the department of psychology at Umeå University. The first month at my new job was also pretty scary. The psychology department is pretty large and you can go unnoticed for a very long time if you eat your lunch at one instead of twelve and get your coffee at nine and eleven instead of ten sharp. One day a guy knocked at my door, he said I looked lonely and asked if I wanted to join him for lunch. That was the first out of countless of lunches I have had with Andreas the last five years. I would really like to thank you Andreas for being such a nice and helpful person. Without your feedback this thesis would have been even worse. Further, my time in Umeå outside the office have not been that bad either. First, Hanna and Robert took an enormous responsibility and made me feel at home in Umeå pretty quick. I also want to thank Ellen (the best person I have ever met) for your amazing patience living with me due to my sometimes long workdays and for letting me lie in the sofa watching different sports when being exhausted. Now I do not regret moving to Umeå. In this part of this list (a part that in old punk records would have been called the “very special thanks list”) I also have to mention Henrik who have been the best associate supervisor a doctoral student can have. Always picking up the phone and taking time for my stupid questions or thoughts about research in general and burnout research in particular. I also want to send a very special thanks to the Tapper family, Gabbe, Anna, Herman and Olle for giving me my own room when being back in Stockholm and always having one or a few good Belgian starkpangare in the fridge ready to be consumed in the sofa during reports about life. Off course I also have to thank my parents, Zaida and Mats, for doing what parents are supposed to do, lending me money and thinking that I am a genius when all present proof is directed elsewhere. Further I want to thank David for being my oldest friend and Eva and August for all help when I was in my teens. Last on the very special thank you list is Freddebornlovecoach without any explanation.

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A little advice if you ever plan to write a PhD-thesis. Do not write the acknowledgements in the middle of the night seven hours before the thesis is supposed to be printed. You will forget people.
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Abstract

Burnout is a psychological concept that has got much attention since it was first defined in the middle of the 1970s. Although the definition of burnout differ there is consensus about exhaustion as the most important part. Burnout have also been in focus in sport psychology research. Mostly athletes have been studied but the coach profession have also been of interest. Research on coach burnout have mostly focused on demographic variables, organizational issues, behaviors and emotions and more holistic perspectives covering larger models or theories.

The aims with this thesis was to try to fill some of the knowledge gaps from earlier coach burnout research with three studies. Study 1 aimed to study subjective experiences associated with perceived causes and symptoms of burnout and the subsequent recovery process. Eight elite soccer coaches who previously had been troubled with high scores of exhaustion was interviewed. We found two burnout profiles that matched the coaches’ perceived causes and symptoms of burnout. The first covered problems with the performance culture itself and the second covered the overall life situation, including workload, family and health.

Study 2 focused on evaluating three self-report burnout measures that are available for researchers to use. Our analysis included Maslach Burnout Inventory (MBI), Oldenburg Burnout Inventory (OLBI) and Coach Burnout Questionnaire (CBQ). The main findings were that there are psychometric problems with all three measures and that MBI and OLBI cover similar definitions of burnout and CBQ cover somewhat different dimensions. Of the three methods that were tested CBQ seem to be most suitable for the coaching context. However, CBQ also have problems and other burnout measures need to be evaluated in the coach context.

Study 3 focused on the associations between workaholic tendencies and combining coaching job with having a family or a spouse, which can be a stressor since the work situation and family situation can be hard to combine. The main findings were that work seem to interfere more with family life than family life interfere with working live. Further workaholic tendencies and exhaustion was not associated.

When interpreting the aggregated results from the thesis there are two main findings. First, the way coach burnout has been measured until now is unsatisfying. Although the development of a coach specific measure (CBQ) is promising, further development is needed, both the theoretical aspects of the burnout construct and psychometric issues. Second, the symptoms and perceived causes in coach burnout is highly individual and makes burnout a very personal experience. Future research should focus on both the origins as well as the measurement of this detrimental concept.
**List of abbreviations**

<table>
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<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ABQ</td>
<td>Athlete Burnout Questionnaire</td>
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<tr>
<td>BM</td>
<td>Burnout Measure</td>
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<td>BMS</td>
<td>Burnout Measure Short</td>
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<td>CBI</td>
<td>Copenhagen Burnout Inventory</td>
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<tr>
<td>CBQ</td>
<td>Coach Burnout Questionnaire</td>
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<tr>
<td>CFA</td>
<td>Confirmatory factor analysis</td>
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<td>CFI</td>
<td>Comparative fit index</td>
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<td>COR</td>
<td>Conservation of resources theory</td>
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<tr>
<td>CT-C(M-1)</td>
<td>Correlated trait-correlated method minus one</td>
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<tr>
<td>DUWAS</td>
<td>Dutch Work Addiction Scale</td>
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<td>IPA</td>
<td>India Pale Ale</td>
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<td>JD-R</td>
<td>Job demands and resources model</td>
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<td>KEDS</td>
<td>Karolinska Exhaustion Disorder Scale</td>
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<td>MBI</td>
<td>Maslach Burnout Inventory</td>
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<td>MBI-ES</td>
<td>Maslach Burnout Inventory educators survey</td>
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<td>MBI-GS</td>
<td>Maslach Burnout Inventory general survey</td>
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<td>MTMM</td>
<td>Multitrait-multimethod</td>
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<td>OLBI</td>
<td>Oldenburg Burnout Inventory</td>
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<tr>
<td>RMSEA</td>
<td>Root mean square error of approximation</td>
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<td>RMSEA-CI</td>
<td>Root mean square error of approximation confidence interval</td>
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<tr>
<td>SEM</td>
<td>Structural equation model</td>
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<td>SMBM</td>
<td>Shirom Melamed Burnout Measure</td>
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<tr>
<td>SWING</td>
<td>Survey Work-Home Interference</td>
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<tr>
<td>TLI</td>
<td>Tucker-Lewis Index</td>
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<tr>
<td>WLMSV</td>
<td>Weighted least squares mean and variance-adjusted</td>
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Sammanfattning på svenska


Syftet med denna avhandling var att försöka fylla en del av de kunskapsluckor som funnits i tidigare forskning med tre studier. Studie 1 syftade till att studera tränarens subjektiva upplevelser av utmattning kopplat till upplevda orsaker och symptom av utbrändhet samt vägen tillbaka från utbrändhet. Åtta elitfotbollstränare som tidigare hade haft problem med utmattning intervjuades. Huvudresultatet i studien var att det fanns två sätt att uppfatta utbrändhetsprocessen. Antingen såg man miljön runt elitfotbollen som den stora orsaken eller så upplevdes hela livssituationen med små stressande händelser kopplade till arbetsbelastning, familj och hälsa som problematiska.

Studie 2 fokuserade på att utvärdera tre frågeformulär som är lämpliga i en tränarkontext. I analysen ingår Maslach Burnout Inventory (MBI), somoftast använts, Oldenburg Burnout Inventory (OLBI) och Coach Burnout Questionnaire (CBQ). De viktigaste resultaten var att det dels finns problem med alla tre samt att MBI och OLBI täcker liknande definitioner av utbrändhet medan CBQ mäter lite andra aspekter. Slutsatsen från studien är att CBQ verkar passa bäst för den kontext där idrottstränare arbetar även om CBQ också har en del problematiska inslag.

Studie 3 fokuserade på arbetsnarkomani och att kombinera tränarjobb med familjeliv har ett samband med utmattning. Huvudresultaten i studie 3 var att det framförallt verkar vara arbetet som stör familjelivet än familjelivet som stör arbetslivet. Ytterligare fanns inget statistiskt stöd att arbetsnarkomani skulle ha ett samband med utmattning.

List of papers


Introduction

The concept of burnout has been studied in academic research since the mid-1970s (Schaufeli & Enzmann, 1998). Although debated, the predominant definition of burnout portrays it as a multidimensional construct containing two or three dimensions (Maslach, Schaufeli, & Leiter, 2001). Burnout has also been studied in a sport context since the early 1980s (Goodger, Gorely, Lavallee, & Harwood, 2007). The same multidimensional definition, although adapted to sport, has been used in the sport research to date (Kelley & Gill, 1993; Raedeke, Arce, Seoane, & De Francisco, 2013; Raedeke & Smith, 2001). My three studies, presented in this compilation dissertation, aim to fill some of the knowledge gaps in the area of coach burnout research. The first study explores experienced symptoms, causes, and recovery from burnout in elite coaches and presents a new idea in the area, which is that the burnout experience is very different depending on the perceived causes. The second study instead aims at studying the way burnout has been measured in the coach burnout research by evaluating alternative measures to the predominant measure. The third study focuses on two other antecedents to coach burnout that have been unexplored to date.

The reasons why these three topics were chosen are both empirical and theoretical. Regarding the first interview study, no previous interview studies had been conducted in a coach burnout context. Because interview studies have generated new fruitful knowledge about the burnout construct in other contexts (Gould, Tuffey, Udry, & Loehr, 1996; G. Gustafsson, Norberg, & Strandberg, 2008; H. Gustafsson, Hassmen, Kenttä, & Johansson, 2008), there was potential for gaining theoretically new knowledge about the burnout construct. The idiomatic method of analysis helped in identifying a new, more individual approach to experiences of burnout in coaches. The measurement of burnout has long been a subject of debate both in organizational psychology (Besèr et al., 2014; Kristensen, Borritz, Villadsen, & Christensen, 2005; Schaufeli & Taris, 2005; Shirom & Melamed, 2006; Shirom, 2005) and in studies on athletes (Cresswell & Eklund, 2006; Raedeke et al., 2013). However, in the coach burnout research, the issue of measurement has not been discussed. The Maslach Burnout Inventory (MBI; Maslach, Jackson, & Leiter, 1996), a commonly used measure, has been criticized for its old-fashioned wording (Demerouti, Bakker, Vardakou, & Kantas, 2003) and problems with the factor structure for the theoretical model (Aluja, Blanch, & Garcia, 2005; Beckstead, 2002; Boles, Dean, Ricks, Short, & Wang, 2000; Byrne, 1993; Oh & Lee, 2009; Schaufeli & Dierendonck, 1993). In the first study, two antecedents of burnout that had not previously been studied in coach burnout research were brought to light. First, combining family life with the responsibilities that come with the coaching job can be very stressful and a reason for high levels of exhaustion. Second, the work situation itself involves levels of engagement that can be obsessive and in the long run lead to exhaustion. Because both antecedents – the combination of coaching work and family life as well as obsessive work patterns – were new to coach burnout research and the coach work
environment is different from a normal, 9 to 5 job, this was very interesting. Therefore, my third study uses the two constructs work-home/home-work interference and workaholism to study the relations to the burnout construct.

This summarizing chapter of my dissertation contains six main sections. In the first section, I will introduce the burnout concept, its historical background, its theoretical foundations and how it has developed in the psychological research. Second, findings from burnout research on sport coaches will be introduced. The third sections present the aims and research questions I try to address in this doctoral thesis. Fourth, I will sum up my studies and to some extent discuss concerns I have with them and what could have been done differently. Fifth is the discussion, where past, present, and future challenges in the field of burnout are discussed. Sixth and last, I provide a final summary of what I have learned during these five years of burnout research.

The concept of burnout: Its history and development

Around 1975, the concept of burnout was introduced to the scientific community by Freudenberger and Maslach simultaneously, although independently (Freudenberger, 1975; Maslach et al., 2001; Schaufeli & Buunk, 2003; Schaufeli & Enzmann, 1998). Although Freudenberger and Maslach had slightly different views on the concept, both discuss symptoms resulting from stress-related responses. Further, both studied the concept in human service settings (Schaufeli & Enzmann, 1998). What both Maslach and Freudenberger found in their studies was that highly engaged health workers seemed to experience loss of energy when working in stressful environments (Schaufeli & Enzmann, 1998). Although there were several differences in the descriptions of burnout, there were also similarities. One important similarity was that exhaustion played a central role, and another was that they both saw burnout as a multidimensional construct that is the result of too much stress. Burnout research mostly focused on descriptive and interview data. The focus was on identifying symptoms and defining burnout. In this initial phase of the burnout research, the term burnout was very broad and in the beginning of the 1980s, there were 132 described symptoms of burnout. To understand the development of burnout in research, it is important to know how burnout as a concept has developed since it was introduced (Schaufeli & Enzmann, 1998).

Maslach’s definition

One important episode in the development of burnout research was the introduction of the first burnout measure. The Maslach Burnout Inventory (MBI) was introduced in 1981 and was developed by Christina Maslach and Susan E. Jackson (Maslach & Jackson, 1981). Following its introduction, Maslach’s three-dimensional definition of burnout has been dominant in the burnout research since the early 1980s (Schaufeli & Buunk, 2003; Shirom &
Melamed, 2006). The MBI is therefore the measure that other researchers have to relate to theoretically, and all other measures that have been developed to some extent build on exhaustion, which is seen as the core dimension of burnout (Schaufeli & Buunk, 2003; Schaufeli & Enzmann, 1998; Shirom, 2005). The other two dimensions of burnout defined by Maslach are depersonalization/cynicism, which is a maladaptive coping strategy for dealing with stress and exhaustion, and reduced sense of accomplishment, which is aimed at feelings of not really having the ability to be as productive at work as one use to be (Maslach et al., 2001).

It has been debated what mechanism underlies whether and how exhaustion, depersonalization and reduced sense of accomplishment actually are interrelated (Lee & Ashforth, 1990, 1993; Shirom & Melamed, 2006). Several models studying the temporal order of the dimensions have been proposed although no study to my attention have explored the causal relations with an experimental design or by the use of instrument variables (Antonakis, Bendahan, Jacquart, & Lalive, 2010). Maslach and Leiter (1988) argue that emotional exhaustion is the first symptom that eventually leads to depersonalization/cynicism and that the last step of burnout is a lack of personal accomplishment/professional efficacy. However, the temporal order has been criticized both from theoretical and from evidence-based perspectives (Lee & Ashforth, 1993; Shirom & Melamed, 2006; Taris, Le Blanc, Schaufeli, & Schreurs, 2005). Maslach’s order of the three dimensions is not the only tested model. The opposite relation, where personal accomplishment is the first symptom that leads to depersonalization and eventually to emotional exhaustion, has also been supported (Golembiewski, Munzenrider, & Stevenson, 1986). Lee and Ashforth (1993) instead showed that emotional exhaustion is the first symptom and that the causal progressions to depersonalization and lack of personal accomplishment are independent of each other. The problem with all studies looking at causality was pinpointed by Taris, Le Blanc, Schaufeli, and Schreurs (2005), who argued that all of the above-mentioned studies only had tested their own causal model. When testing all the proposed models, they found that there seemed to be causal relations going in all the proposed directions, leaving the conclusion that causal relations between the burnout dimensions differ and that focusing on only one proposed model is not a fruitful direction for burnout research to take. However, it is important to stress that using only two points of measurement when testing complex theoretical processes, with more than two steps in the causal chain, is problematic (Ployhart & Vandenberg, 2009). No previous study testing the causality of the three MBI dimensions has included more than two repeated observations. The results of previous studies should therefore be interpreted taking this fact into consideration.

During the past decade, Maslach’s three-dimensional definition of the concept has been criticized from a number of perspectives. One criticism is that the personal accomplishment dimension seldom correlates with the other two dimensions and instead seems to progress independently from them (Lee & Ashforth, 1996). Further, questions concerning how the
burnout syndrome dimensions, as defined by Maslach, are theoretically related have never been answered (Shirom & Melamed, 2006), which may explain why the causal relations have been different across studies. Further, a very important critique of Maslach’s concept definition is that it is based neither on clinical observations nor on theory. Instead it has been inductively chiselled out using exploratory factor analysis (Lee & Ashforth, 1990; Shirom & Melamed, 2006). Another major problem is that the dimensions of burnout have large conceptual overlaps with other constructs used in psychological research. Personal accomplishment includes items that stem from several different psychological constructs such as self-efficacy, productivity, personal competence, and personal productivity. Apart from the conceptual overlaps that follow such a broad definition of burnout, the questions of why and how emotional exhaustion, depersonalization, and reduced sense of accomplishment can be condensed into one dimension have not been theoretically addressed as yet (Shirom & Melamed, 2006).

One way to deal with the critique that has been voiced concerning reduced sense of accomplishment in the three-dimensional definition is to use a two-dimensional definition instead. Although the Oldenburg Burnout Inventory (OLBI) relies on the definition that is used in the MBI, some slight changes have been made from the MBI-GS. Instead of measuring emotional exhaustion, it measures both physical and emotional exhaustion. The second dimension in the OLBI is disengagement and is a development of the cynicism dimension. Disengagement covers an evolving disengagement in one’s work. Further, the OLBI covers both positive and negative wording, where the positive is reversed (Demerouti et al., 2003).

**Freudenberger’s definition**

Both Freudenberger and Maslach focused their early research on workers in the human services, especially persons working in health care and education. Theoretically, the focus on human services may have had an impact on the definitions of burnout. Working in people-oriented jobs was seen as one of the preconditions of becoming burned out. The theory was that burnout stemmed from interpersonal relationships at the workplace between provider and recipient or between worker and the job (Maslach et al., 2001; Schaufeli, Leiter, Maslach, & Jackson, 1996).

According to Freudenberger (1975), burnout did not stem from the work environment exclusively; instead he argued that burnout can come from anything that creates an almost manic commitment to what a person does. He gives examples from business, drug addicts, and golf players. However, he also states that burnout is different in different areas; in the area of free clinics where he was a psychologist, he claims that workers have to battle on three fronts at a minimum. First, they fight the illness of society. Second, they deal with the individuals whom they are supposed to help. Third, they also have personal needs of their own (Freudenberger, 1975). Even if Freudenberger here broadens the definition of the burnout concept, he states
that people in helping occupations are at more risk than those in other occupations.

Freudenberger (1975) lists the signs that become manifest in burnout cases. His definition is not as clear as Maslach’s (Schaufeli & Enzmann, 1998). The signs that manifest themselves in burnout, according to Freudenberger, are mostly physical, including exhaustion, colds, and being tired; having headaches and problems with one’s stomach; also depression, weight loss and shortness of breath can all be included in his definition. He adds behavioural and psychological signs such as verbal persons becoming silent; feelings of anger and frustration; suspiciousness and paranoia; and the added risk of letting one’s job affect one’s private life. These behaviours lead to heightened risks of overuse of painkillers, tranquilizers, and medications for various psychological diagnoses. However, according to Freudenberger (1975), medication does not help, because the symptoms are psychosomatic and the medicines are of no use. Instead, it is argued that the use of medicine is similar to being a drug addict.

**Exhaustion-based definitions**

Although Freudenberger and Maslach were the first to use the concept of burnout in research, there have been others who have also used the concept and similar definitions. The similarities have mostly been to Maslach’s definition. Two of these definitions have focused on the exhaustion aspect of burnout and created three-dimensional definitions in relation to exhaustion.

Pines and Aronson based their definition on three different exhaustion dimensions: physical, emotional, and mental exhaustion, which are suggested to be caused by long-term involvement in emotionally demanding tasks. Physical exhaustion concerns feelings of tiredness, sleep problems, and continuous feelings of illness. Emotional exhaustion concerns feelings of depression and hopelessness. The third dimension, mental exhaustion, concerns feelings of being a failure, being worthless, and being a disappointment to other people (Malah-Pines, 2005). Pines and Aronson also saw burnout as a concept for all occupations, not only persons working in the human services and similar occupational settings. Further, they argued that burnout also can be caused by other settings than those found in working life, for example by relations (marriage) and political engagement (Pines & Keinan, 2005).

Pines also developed the Burnout Measure (BM) and a short version of the BM (BMS) that cover physical, emotional, and mental exhaustion (Malah-Pines, 2005). The BM has shown ambiguous psychometric properties, which of course may indicate that their theory and burnout dimensions are somewhat problematic. Some studies focused on clinical validity have found that the BM has good construct validity, as shown through clinical validation (Schaufeli, Bakker, Hoogduin, & Kladler, 2001). However, in a confirmatory factor analysis, the three dimensions could not discriminated from each
other, suggesting that they should be merged into one dimension (Malach-Pines, 2005) and then combined with an additional measure that covers an attitudinal dimension of burnout, such as depersonalization or cynicism (Schaufeli & Dierendonck, 1993). The high factor loadings indicate that what theoretically are three different dimensions in this sample seem to measure concepts that concern the same phenomena or concepts that are closely related. One explanation could be that physical, emotional, and mental exhaustion dimensions theoretically and in practice are very closely related or that the questions asked in the measurement tool are not formulated so as to cover what they are supposed to cover. The definition of mental exhaustion seems to be a combination of depersonalization and reduced sense of accomplishment from the MBI, though in a slightly different form. One further problem is that the dimension that covers emotional exhaustion adds even more conceptual overlap between burnout and depression.

**Brill’s definition**

Brill (1984) defines burnout as a job-related syndrome including dysphoric mood and a dysfunctional state, although the individual is not suffering from major psychopathology. Further, to be considered burned out, a person has to meet two conditions. First, he or she should have functioned for a time at inadequate performance and affective levels in the same job situation and, second, he or she should not be able to recover to previous levels without outside help or environmental rearrangement. The second part of Brill’s definition is very interesting, in that outside help or environmental rearrangement is presented as part of the solution to burnout. Brill’s definition of the concept is difficult to design research projects around. Research designs have to be longitudinal to make changes in job situation measureable. This may be one reason why Brill’s definition has not been used. For qualitative studies or case studies, however, it could be very useful. The core symptoms, according to Brill, are dysphoric mood and reduced job performance. Unmet expectations are always a cause of burnout. This may entail either that a person does not perceive the job as challenging, stimulating and varied as he/she had envisioned or that he/she feels less tolerant, empathic, patient or understanding than expected. Third the individual cannot cope with the symptoms without getting outside help. Finally, the symptoms are related the occupation and do not occur in people who have other psychopathological illnesses.

**Shirom & Melamed’s definition**

Since the early 2000s, two definitions of burnout have been discussed and researched in addition to the MBI. The first is the definition of Shirom and Melamed, which contains three dimensions and is based on the idea that burnout should be separate from other psychological concepts that burnout has previously overlapped with conceptually (Shirom & Melamed, 2006). Shirom and Melamed’s definition stems from one part of Hobfoll’s (1989) Conservation of Resources Theory (COR). COR builds on the idea that
humans have several resources they wish to hold on to. One of these is our perception of having the energy to work and do things in our spare time. To maintain this energy, we use several coping strategies. However, when resources that are important to the individual are lost and coping strategies are not fully functional, meaning that the demands the individual feels are greater than his/her resources, then he/she has a heightened risk of becoming emotionally, physically and cognitively exhausted. Research has shown that a lack of resources in one area often spill over to a lack of other personal resources. Therefore these three burnout symptoms should be related (Melamed et al., 1999; Shirom & Melamed, 2006). Shirom and Melamed’s conceptualization of burnout has also been used by other researchers (Brotheridge & Lee, 2002; Wilk & Moynihan, 2005).

Based on COR, Shirom and Melamed developed the Shirom Melamed Burnout Measure (SMBM). The SMBM has three subscales measuring emotional exhaustion, physical fatigue, and cognitive weariness. Emotional exhaustion and physical fatigue are often combined to form one subscale that covers both the mental and physical aspects of exhaustion. Cognitive weariness covers a cognitive symptom related to exhaustion, and the items included are aimed at a decrease in cognitive functions that are interrelated to exhaustion and intended to cover how the individual rates the cognitive functions of focus, complex thinking, and concentration (Melamed et al., 1999; Shirom & Melamed, 2006).

**PUMA project definition**

The other recently discussed burnout definition stems from the Danish burnout research project PUMA. The researchers stipulated six problems that, from their perspective, make both the MBI and the BM problematic in burnout research projects that focus on a wide range of occupations with and without intra-individual job descriptions (Kristensen et al., 2005). A new burnout definition was therefore proposed and a new measure was developed within the PUMA project: the Copenhagen Burnout Inventory (CBI). The CBI focuses solely on fatigue and exhaustion and has three dimensions that refer to different aspects of exhaustion. The dimensions from the CBI are: personal burnout, work-related burnout, and client-related burnout. Personal burnout is defined as both physical and mental exhaustion and aims at assessing how exhausted the individual is. Work-related burnout covers how much exhaustion the individual attributes to his/her work. Client-related burnout covers how much of a person’s exhaustion he/she attributes to other persons whom he/she has work contact with (Kristensen et al., 2005).

The CBI is a measure that clearly defines one main dimension, personal burnout, and two dimensions that serve as antecedents to this main dimension (Kristensen et al., 2005). The CBI has received critique because of its focus on one dimension, and for not viewing burnout as a syndrome, which is the core point of previous burnout theories (Schaufeli & Taris,
A response to Schaufeli and Taris’s critique was provided by Shirom (2005). The main point was that the concept of burnout is not owned by one group of researchers and that when the given definition of burnout as a syndrome seems problematic, further conceptual development is in order.

**Swedish National Board of Health**

In Sweden, burnout is a clinical diagnosis. However, the Swedish National Board of Health suggests that it should be called Exhaustion Disorder, because the term burnout translates poorly into Swedish and becomes a metaphor of something that is nearly impossible to recover from. Further, exhaustion disorder is not seen as a work-related illness, because humans may feel stress from both work and home environments (*Utmattningssyndrom: Stressrelaterad psykisk ohälsa*, 2003). Because it is a clinical diagnosis, the definition is aimed at applied settings. The clinical diagnosis of exhaustion disorder requires that six criteria be met; if they are not met, the problem is instead labelled work-related stress. First, the person should have had mental and physical symptoms of fatigue for at least two weeks caused by several stress-related antecedents that extend at least six months back in time. Second, there should be a severely reduced ability to handle demands and do things under time pressure. Third, during the past two weeks, the person should have suffered from at least four of the following symptoms on a daily basis: (1) problems with memory and concentration, (2) reduced ability to handle demands and to do things under time pressure, (3) emotional lability and irritability, (4) sleep problems, (5) physical weakness and tiredness and (6) physical symptoms such as ache, breast pain, irregular heartbeats, bowel problems, dizziness, or problems with noisy environments. Fourth, the symptoms should cause a clinically significant amount of suffering or a decrease in ability at work, socially or in other important areas. Fifth, the symptoms should not be caused by the physiological effects of drug abuse or drugs prescribed for other illnesses like diabetes. Sixth, if the person also suffers from depression, the exhaustion disorder is only an add-on diagnosis to the depression (*Utmattningssyndrom: Stressrelaterad psykisk ohälsa*, 2003).

The definition from The Swedish National Board of Health is seldom used in burnout research if such research is not based on clinical populations that already have the diagnosis. However, the Karolinska Exhaustion Disorder Survey (KEDS) was recently developed to measure the symptoms of exhaustion disorder. It is a nine-item self-report measure with one item for each symptom, including depression. A total score that follows the above-described symptoms of exhaustion disorder is then calculated (Besèr et al., 2014). Due to its recent development and the nature of the measure, the KEDS has not been used in the research to date.
Coach burnout research

The coaching profession can be stressful independent of one’s level of coaching. Coaching is driven by a passion for and engagement in sport and/or in the athletes being coached (Raedeke, Granzyk, & Warren, 2000). The passion-driven nature of the job combined with incoherent work hours mean that the job is easy to take home, and this combination may also result in long working hours. The nature of the coaching job requires expertise in several different areas, and coaches need to be able to handle different types of stressors: everything from individual athletes’ behaviours and skill levels to demands from the media and superordinates (Frey, 2007; Kelley, Eklund, & Ritter-Taylor, 1999; Lundkvist, Gustafsson, Hjälm, & Hassmén, 2012). Demands do not only come from media, however, but they also may come from the board of the club, sports federations, parents, or fans. In times of prosperity, these factors may be experienced as stressful and in times of adversity, negative coping with stress may lead to depression and/or burnout. In addition to the demand to give results, the coach should be able to handle complicated administration and long trips. Altogether, various stressors increases the risk of burnout (Kelley et al., 1999; Weinberg & Gould, 2007).

Unfortunately, very little research has been performed in the area of coach burnout. Although coach burnout was studied before athlete burnout, only 20 peer-reviewed studies were published between 1984 and 2011. For athlete burnout, the number of published studies is 75 (H. Gustafsson, Hancock, & Côté, 2014). Since 2011, two additional studies have been published on coach burnout, giving a total of 22 studies. The coach burnout studies can be categorized into six areas. The first area contains seven studies that focused on demographic variables and/or incidence in certain groups or comparisons of incidence in groups, like gender or team vs. individual sports. The second group contains two studies on the relationship between organizational issues and burnout. The third group contains four studies on behaviours and emotions. The fourth group contains six studies that all take a more holistic perspective using certain models that contain intrapersonal and/or situational variables that explain coach burnout or have a clear theory of burnout in coaching. The fifth group contains one interview-based article. The last group only contains one study focused on how to measure burnout. Out of the 21 articles that use statistical data analysis of self-report questionnaires, all except one use cross-sectional designs. Only one study uses a longitudinal design with two measurement points over the course of one year.

Coach Burnout Measures

Twenty out of the 22 coach burnout studies have used different, reworded versions of the MBI, all of which are based on a definition in which a recipient relation is central to the coaching job. The two studies employing other measures have both used a sport-specific coach version of the Athlete
Burnout Questionnaire (Harris & Ostrow, 2008; Malinauskas, Malinauskiene, & Dumciene, 2010; Raedeke & Smith, 2001). One of the two studies not using the MBI is Study two of the present thesis, which compares alternative coach burnout measures.

Based on the definition from the MBI, a context-specific athlete burnout measure has been reworked to fit coaches as well (Harris & Ostrow, 2008; Raedeke et al., 2013; Raedeke & Smith, 2001). The ABQ/CBQ has slightly changed the dimensions to be more sport specific. Exhaustion now covers both physical and emotional exhaustion, as physical exhaustion is a very central aspect for athletes who practice and compete on numerous occasions every week. Instead of focusing on recipients, the devaluation dimension aims at feelings of lost interest in the sport the athlete is active in. Third, reduced sense of sporting accomplishment covers feelings of lowered abilities in one’s sport (Raedeke & Smith, 2001).

**Demographic variables and incidence**

Coach burnout studies focusing on demographics and prevalence have been published. Most often this has been accomplished by comparing burnout levels between coaches in different contexts or between male and female coaches. Several studies have showed that when mean levels of burnout have been compared, female coaches have higher levels of self-reported burnout than male coaches do (Caccese & Mayerberg, 1984; Kelley et al., 1999; Kelley & Gill, 1993; Kelley, 1994; Pastore & Judd, 1993; Vealey, Udry, Zimmerman, & Soliday, 1992). However, it is important to note that the variance within genders tends to differ more than between, rendering problematic the conclusion that female coaches are more prone to burnout than male coaches are. Further, results from another study showed no statistically difference between male and female coaches (Malinauskas et al., 2010). In a recently published meta-analysis looking at occupational burnout research, very small differences were found between males and females. Regarding emotional exhaustion, females were slightly higher than males were, and regarding depersonalization, males were slightly higher than females were (Purvanova & Muros, 2010).

Some studies have focused on incidence in a certain group of coaches. Among Swedish elite football coaches, 17% were classified as high on emotional exhaustion based on the cut-off levels established for the MBI (Maslach et al., 1996). However, only four per cent were classified as high on all three dimensions. Interestingly, coaches who were on a lower elite level scored higher on the MBI than did those at the highest male level. One explanation was that the coaches were seldom employed on a full-time basis as coaches. They also had smaller coaching staff, less organizational help, and were paid less (Hjälm, Kenttä, Hassmén, & Gustafsson, 2007). A study conducted in an American college context found that being a part-time coach can give relief from the pressure of a coaching job and actually lower perceptions of exhaustion (Raedeke et al., 2000). It is possible that the
pressure differs in different context depending on the job. In the US, coaches often combine their coaching jobs with teaching jobs at the same college/university, whereas in Sweden and Europe those who have more than one job often work more than full time and have long commutes between jobs (Lundkvist et al., 2012).

Coaching experience and age also seem to influence burnout scores. Younger and/or less experienced coaches have shown higher levels of burnout, which was explained by their inability to cope with the pressure that comes with coaching (Gencay & Gencay, 2011; Vealey et al., 1992).

**Organizational issues**

Issues that stem from the coaching job itself, like budget questions or relations between leaders, staff, and/or athletes, have previously been associated with coach burnout. Problems that stem from the training sessions and other coach-related issues have shown similar relations (Kelley & Gill, 1993). There are also indications that coaches in larger organizations with larger coaching staff report lower burnout scores than do coaches working in smaller organizations. One possible explanation could be that coaches in larger organizations can focus their time on coaching, whereas those working in smaller organizations also have to assume other responsibilities that are not related to the coaching role. Therefore coaches in smaller organizations may be exposed to a more stressful work situation, which may lead to higher burnout scores (Hjälm et al., 2007; Lundkvist et al., 2012).

Being a coach is a complex job involving several different demands. These demands can involve the pressure for successful results, a great deal of administration, long trips to competitions, critique and demands from the media or persons outside sports (Lundkvist et al., 2012). Coaches who perceive ambiguous roles and/or role conflicts, where the coach is required to complete assignments that are not in his/her job description, also have higher levels of burnout (Capel, Sisley, & Desertrain, 1987). Long workdays and high workload are related to higher burnout scores as well (Capel et al., 1987; Wilson & Bird, 1984). Factors such as inadequate social support also appear to be related to stress among male coaches, and interpretation of the stressful situation also relates to emotional exhaustion, depersonalization and reduced sense of accomplishment (Kelley, 1994; Vealey et al., 1992).

Another variable that theoretically has a conceptual overlap with reduced sense of accomplishment in the context of sports is sporting results. Winning percentage is one way to study the results of the season, but this measure has previously not been associated with coach burnout (Kelley, 1994; Omotayo, 1991). However, performance-related problems are described to be very central to some coaches with previous high scores on emotional exhaustion. The conflicting results show that more research is needed and that better
measures than winning percentage may be needed to study performance issues (Lundkvist et al., 2012).

**Behaviours and emotions**

Leadership style is one behavioural aspect that has been of particular interest. Results have shown that both leadership styles labelled as “considering” and “initiating” were related to lower levels of burnout, when burnout was conceptualized as a combined latent variable of emotional exhaustion, depersonalization, and reduced sense of accomplishment (Kelley et al., 1999). Another coach burnout study found that considering coaches had higher scores on all burnout dimensions than did initiating coaches (Dale & Weinberg, 1989).

Relations between several dispositional traits and burnout have also been studied. Individuals’ ability to cope with the demands that go with the coaching role and their ability to communicate and interact with athletes, coaching staff and boards of directors have been shown to be important in relation to burnout, in that persons who lack these dispositional traits have higher levels of burnout (Kelley, Eklund & Ritter-Taylor, 1999; Weinberg & Gould, 1999). Further, anxiety and worry are the variables that are related to coach burnout. Anxiety and worry were interpreted as cognitive perceptions that, together with a decrease in confidence, are crucial to the development of burnout (Vealey et al., 1992).

Some interest has been placed on the relations between burnout and perfectionism. Perfectionism is a debated personality trait, where some researchers think there are adaptive and maladaptive types of perfectionism and others believe that all types of perfectionism are bad (Flett & Hewitt, 2005). Coaches with maladaptive perfectionism – defined by exaggerated concern over mistakes, need for approval, perceived peer pressure, and rumination – have higher levels of burnout (Tashman, Tenenbaum, & Eklund, 2010).

Another characteristic that has been studied in relation to coach burnout is hardiness. Hardiness was defined as a person being committed instead of alienated in relation to his/her work, family, self, and hobbies. A person who scores high on hardiness also sees changes in life as challenges instead of problems, and he/she also feels a direct control over outcomes in life. Two studies have found that persons who score high on hardiness also have lower scores on burnout (Kelley et al., 1999; Kelley, 1994).

**Cognitive-affective model**

One well-cited model for burnout in sports is the cognitive-affective model. The cognitive-affective model was developed by Smith (1986). It was originally developed to explain burnout among athletes, but has also been tested in coach contexts (Kelley et al., 1999; Kelley & Gill, 1993; Kelley, 1994;
Vealey et al., 1992). According to the original model, burnout is a consequence of stress-induced load. When an activity that once created satisfaction has changed to be perceived as too stressful, a relevant option is to discontinue the activity. The cognitive-affective model assumes that situational, cognitive, physiological, and behavioural components of stress are related to burnout. The emphasis is on the cognitive process of interpretation and evaluative thinking in terms of the ability to cope with the challenges faced. The stress response triggers the individual to misjudge his/her ability to solve the task, either due to low self-esteem or irrelevant incorrect beliefs about the importance of meeting this challenge. One possible outcome of this process is burnout (Smith, 1986). The cognitive affective model has served as a theoretical framework in several coach burnout studies with samples from American college or university coaches. Smith’s model has been tested in a series of cross-sectional studies on coach burnout, where the model has served as a theoretical foundation on which to test different situational, cognitive, and behavioural variables’ relations to burnout (Kelley & Gill, 1993; Kelley, 1994; Kelley et al., 1999).

**Commitment theory**

Commitment theory build on the sport commitment model which define why a person want to resume their sport participation (Scanlan, Carpenter, Schmidt, Simons, & Keeler, 1993). Commitment theory have been used in sport burnout research where interest have been directed to the relation between burnout and motivational issues, and the connection between the reasons why individuals are engaged in the coaching profession and burnout are studied (Raedeke et al., 2000). A central idea underlying commitment theory is that individuals may feel entrapped, "caught in the profession", and that entrapment increases the risk of burnout. The cause of entrapment may be that elite coaches’ backgrounds tend to be as players in the sport they now coach. Persons who, in their youth, are highly engaged in sports often forsake studies for the benefit of practicing and competing in sports. Alternatively, they have invested all of their time and training to reach the coaching profession. Both forsaking school and investing time in becoming a coach mean that the person’s career prospects are small outside coaching due to lack of educational resources. A third reason for entrapment may be the perception on the part of the individual that persons close to him/her, like parents, coaches or teammates, expect him/her to continue and become a coach. The coaching profession is often seen as a dream profession. But like all other professions, it also has less glamorous elements.

Commitment theory has also been tested using longitudinal designs. With two measurement points one year apart, a longitudinal cluster analysis was used to study whether coaches who changed cluster had also changed their burnout scores. The aim was to examine whether burnout was related to involvement in the profession over time. The results showed that two-thirds were classified in the same profile after one year, while one-third changed profile. Interestingly, the coaches whose interest in the coaching profession
decreased also showed reduced satisfaction, increased values on the perceived costs of practicing as coaches, and reported increased levels of burnout. Those coaches who instead had moved to a cluster indicating higher levels of engagement in their coaching job reported decreased levels of burnout (Raedeke, 2004).

**Aims**

This thesis general aim to fill some of the knowledge gaps from earlier research of coach burnout by doing three studies. The first study aimed to gain more knowledge about individual experiences of burnout in relation to symptoms, causes, and recovery by interviewing eight coaches who previously had reported high scores on exhaustion. The second study aimed to evaluate and compare the convergent and discriminant validity of three coach burnout measures theoretically based on the MBI (Demerouti et al., 2003; Maslach et al., 1996; Maslach & Jackson, 1981; Raedeke et al., 2013). The aim of my third study was to investigate the relations between obsessive work engagement (workaholism) (Clark, Michel, Zhdanova, Pui, & Baltes, 2014), stressors stemming from combining work life and family life (Montgomery, Panagopolou, Wildt, & Meenks, 2006), and burnout.

My aims then resulted in six pertinent questions:

1. How do coaches who have previously scored high on exhaustion perceive their symptoms of burnout? (Study 1)
2. What symptoms do coaches with previous high scores on exhaustion perceive caused their problems? (Study 1)
3. What strategies did the coaches use to recover from their high levels of exhaustion? (Study 1)
4. Do Oldenburg Burnout Inventory (context free measure) and Coach Burnout Questionaire (sport context measure) show method- and trait specificity, convergent and divergent validity with Maslach Burnout Inventory in a coach context? (Study 2)
5. Does the level of workaholism associate with the level of burnout differently depending on how high coaches’ burnout scores are? (Study 3)
6. Does the level of work-home/home-work interference associate with the level of burnout differently depending on how high coaches’ burnout scores are? (Study 3)
Methods

My focus has been on developing methodological skills that can be valuable both in the context of this thesis and in the future. Study 1 focuses on analysing interviews using Interpretative Phenomenological Analysis (IPA), which is a method where the researcher uses both inductive and deductive approaches. IPA also requires the researcher to have a clear ideographic focus, that is, to be able to focus on the individual experiences of burnout (Smith & Osborn, 2003, 2008). In Study 2, structural equation models were used to examine the factor structure (CFA) of three burnout instruments and in combination with multitrait-multimethod (MTMM) models. Specifically in Study 3, quantile regressions were used to analyse whether persons who score in different percentiles of burnout show different relations to the independent variables.

Study 1.

Sample

The sample contained eight coaches who had previously scored over the cut-off rated as high on the exhaustion subscale of the MBI-ES measure (Hjälm et al., 2007). The eight coaches were included because they, theoretically, could supply rich information on our research questions concerning perceived symptoms and causes of as well as recovery from burnout. All eight were male and between 37 and 49 years of age.

Measure

The MBI Educational Survey (MBI-ES) was used in Study 1 as a sampling criterion to include coaches who had scored high on the emotional exhaustion dimension in a previous study (Hjälm et al., 2007). Categorizing them as high on this dimension was based on the cut-off criteria in the MBI manual (Maslach et al., 1996). The MBI-ES uses the original three dimensions from Maslach’s early work. It was originally developed for caring occupations, but has been reworded to suit educational occupations. The coach version has been reworded to fit the coach environment, where the word “students” has been changed to “athletes” (Vealey et al., 1992). Emotional exhaustion is measured using nine items. A sample item is “I feel fatigued when I get up in the morning and have to face another day on the job”. Depersonalization is measured using five items. A sample item is “I don’t really care what happens to some athletes”. Reduced sense of accomplishment is measured using eight items. A sample item is “I feel exhilarated after working closely with my athletes” (reversely scored). Responses are made on a 7-point Likert scale ranging from zero to six: 0 =
Never, 1 = A few times a year or less, 2 = Once a month or less, 3 = A few times a month, 4 = Once a week, 5 = A few times a week, 6 = Every day.

**Interpretative phenomenological analysis**

Interpretative Phenomenological Analysis (IPA) is a method used to analyse interview data. IPA suggests how to work with sampling, data collection, and analysis. IPA is a relatively new method that began being developed from the work of Jonathan Smith in the mid-1990s. First it was mostly used in health psychology (Brocki & Wearden, 2006), but it has spread to other disciplines, for example, sport psychology (Lundkvist et al., 2012; Nicholls & Holt, 2005).

The purpose of the method was to combine different epistemological schools and develop guidelines for how to conduct interview-based research (Smith, 2004). IPA builds on three schools: phenomenology, hermeneutics, and ideography. The phenomenological approach aims to describe people’s lived experiences according to how they interpret and understand their world and formulate their stories about it. The hermeneutic approach highlights the researcher’s interpretative and preconceptive freedom in text analysis. The ideographical approach aims at a clear focus on relating the individual’s perspective (Smith & Osborn, 2003). Phenomenological research aims to explore personal experiences and how individuals themselves give meaning to these experiences (Smith, 2004). As a researcher, you have the interpretative freedom to pose critical questions in relation to the text as well as to use this freedom to highlight and interpret aspects of the text that the interviewee does not need to be aware of or agree with. In hermeneutic research, it is assumed that the researcher’s preconceptions serve as the key when interpreting the data. Interpretation of the respondent’s statements is divided into two stages, because the respondent is trying to make sense of the world, and the researcher is trying to make sense of the world of the respondent (Smith & Osborn, 2003).

When using IPA, the researcher is interested in the individual’s perception of her/his own experiences. The goal is not to generalize to broader samples, and therefore the focus is on individuals’ perceptions of their own reality (Smith & Osborn, 2003).

IPA is often based on a semi-structured interview form, which is the type of interview recommended by Smith (2003, 2004). The semi-structured interview is based on creating a dialogue between the interviewer and the respondent. A template of questions or themes of questions is used, but to maintain a flow and dialogue during the interview, follow-up questions are asked and further questions are developed based on what the researcher believes is particularly interesting and relevant (Smith & Osborn, 2003). The interviewer does not follow the template chronologically. Instead, the interviewer is free to follow up questions if something feels especially important. Questions can also be asked in a different order than they appear.
in the template if the respondent says something pertinent to a given topic area (Smith & Osborn, 2003). IPA is well suited to studies with relatively small and homogenous samples. Theoretically, the respondents should have rich experiences of a particular phenomenon.

In our study, we used the cut-off values for the exhaustion dimension of the MBI to find a sample that was homogenous with regard to experiencing exhaustion. The small homogenous sample underlines the ideographic focus of IPA, where subtle individual differences between participants can give an interesting picture of the phenomena under study (Smith, Flowers, & Larkin, 2009).

Transcribed texts are most often analysed inductively, letting the text shape themes instead of relying on a theory to shape themes (Smith, Flowers, & Larkin, 2009). Doing IPA involves a stepwise procedure that goes from reading through all or the first interviews to embrace the text to ideographic line-by-line analysis to find excerpts that can be used to thematize the data. Further, the researcher works in a stepwise fashion towards more general categorizations to form themes and create a more analytical and theoretical approach, resulting in themes that are coherently arranged. Using already discovered themes can be of great help in promoting the visibility of differences and similarities between the different transcripts. Localization of the different themes is otherwise the same as in the first transcription. Because of the idiographic nature of IPA and to present data in a way that I felt got the most from the material, one more step was added to the analysis. I carried out a kind of clustering of the participants to identify narratives that held together and those that were separated from each other. The clustering was done because the perceived causes of exhaustion seemed to be different for the coaches and to depend on what they thought had caused burnout as well as their descriptions of symptoms and recovery. This allowed me to fully present and illuminate the ideographic approach to IPA, describe different perceptions of the research question and give voice to the various perspectives (Smith & Osborn, 2003). The last part of the analysis process is to describe and illustrate the themes that are constructed in the analysis of the interviews. The analysis phase proceeds in the writing phase if the researcher finds passages that are irrelevant (Smith, Flowers & Larkin, 2009). In the writing phase, the themes are located and translated into a more narrative language, which serves to explain, illustrate, interpret and nuance the material (Smith & Osborn, 2003).

**Study 2**

**Participants**

The sample contained 277 coaches coaching on different levels from the highest male and female Swedish football leagues and the second highest male football league. Unfortunately the sample was not very balanced, in
that 236 participants were male and 39 were female, while two did not specify their gender. Further, 38 sports were covered, where 28 were individual sports and 10 were team sports. The distribution between team and individual sports was a bit more balanced, with 125 individual sport coaches and 154 team sport coaches. The employment rate was between 20 to 100 per cent of full time. The majority (149 coaches) had full time employment, 36 were employed between 75 to 99%, 49 were employed between 50 to 74% and 38 had less than 50% employment. Six coaches did not respond concerning their employment rate.

**Measures**

Three different burnout measures were used in the study. Besides the MBI-ES, which was presented above in Study 1, the Oldenburg Burnout Inventory (OLBI) and the Coach Burnout Questionnaire were used. The OLBI is based on the same theory as MBI-GS, but only uses two dimensions owing to psychometrical problems, where reduced sense of accomplishment has shown low correlations with the other two burnout dimensions. The exhaustion dimension covers both emotional and physical exhaustion. A sample item is “After my work, I usually feel worn out and weary”. Disengagement covers a somewhat different definition of cynicism (depersonalization on the MBI-GS), which deals with feelings of disengagement from the job itself. A sample item is “Lately, I tend to think less at work and do my job almost mechanically”. Responses are made on a 4-point Likert scale where 1 = Strongly agree, 2 = Agree, 3 = Disagree and 4 = Strongly disagree.

The third burnout measure was the Coach Burnout Questionnaire (CBQ), which is a reworded version of the Athlete Burnout Questionnaire (Harris & Ostrow, 2008; Raedeke & Smith, 2001). The exhaustion dimension covers both physical and mental exhaustion. A sample item is “I feel so tired from coaching that I have trouble finding energy to do other things”. The second dimension is sport devaluation, which deals with reduced engagement in the sport he/she is coaching. A sample item is “The effort I spend coaching would be better spent doing other things”. Reduced sporting accomplishment is the third dimension and it covers feelings of diminished competence and results as a coach. A sample item is “I am not performing up to my ability in coaching”. Answers are given on a 5-point Likert scale where 1 = Almost never, 2 = Rarely, 3 = Sometimes, 4 = Frequently and 5 = Almost always.

**Confirmatory Factor and Multi-trait Multi-method Analyses**

The statistical analysis in Study 2 was performed in two steps. First, confirmatory factor analysis (CFA) tested the factor structure, and thereafter internal consistency was tested for each measure individually. Second, multi-trait multi-method (MTMM) analyses tested the factor structure of all
measures in one model, where specificity to each method and convergence to the proposed definition of burnout were tested. The three measures were analysed using CFA to test the hypothesized factor structure for the individual measures. The second step was to combine all three models into one MTMM analysis to test for discriminant validity, convergent validity, and method specificity by combining all three measures in one structural equation model (SEM model). We used the weighted least squares mean and variance-adjusted (WLSMV) estimation method because it performs well when variables are not normally distributed, sample size is small, and the statistical model is complex. WLSMV estimation is also favourable in SEM modelling with ordinal variables (Nussbeck, Eid, & Lischetzke, 2006).

The questionnaires were analysed for internal consistency and internal structure using confirmatory factor analyses (CFAs). For the CBQ and MBI, both three- and two-dimensional versions were tested. Some items were deleted, as described below, in line with previous research to see whether this improved the model fit.

**Multi-Trait Multi-Method Analysis**

The correlated trait-correlated method minus one model (CT-C[M-1]) was used, as shown in Figure 1. The CT-C[M-1] model allows both trait factors and method factors to correlate. M-1 indicates a chosen comparison standard method that is contrasted against the other tested method factors and is not linked to any of the other method factors. The indicators of the comparison standard method do not have a method factor and therefore only correlated with the trait factor (Eid et al., 2003). The choice of comparison standard method should be based on previous research results and theoretical considerations (Geiser, Eid, & Nussbeck, 2008). The MBI was chosen as the comparison standard method for this study because it is the most commonly used and serves as a theoretical base for the other tested measures. In the tested model, all indicators load on a trait – emotional exhaustion, depersonalization, or lack of personal accomplishment – defined by the comparison standard method. The comparison standard is therefore the method that the other method factors are compared with (Eid et al., 2003). The indicators also load on their specific method and cover the variance that is specific to the method and not shared with the comparison standard method. If the factor loading for an indicator is higher on the trait factor than on the specific method factor, this means it has high convergent validity with the comparison standard and the measures cover similar constructs (Grigorenko, Geiser, Slobodskaya, & Francis, 2010). Trait correlations test discriminant validity, with low correlations indicating high discriminant validity, meaning that traits measure different dimensions of burnout and with high correlations (r ≥ .70) indicating that traits cover similar constructs that are difficult to separate (Eid et al., 2008).
Convergent validity was tested using consistency coefficients and method specificity. Consistency coefficients indicate the degree of true variance of an observed indicator of a method factor that is explained by the comparison method. The method specificity coefficients represent the proportion of true variance in an observed indicator that is specific to the particular method factor and not shared with the comparison standard. In our case, between 5% and 100% of the variance in the CBQ and OLBI items was explained by the standard method (MBI). If the consistency coefficient is larger than the method specificity coefficient, this indicates that intraindividual differences in the ratings are primarily determined by trait differences rather than by trait-specific method differences. Higher consistency coefficients indicate higher convergent validity.

**Model fit indices**

To evaluate both CFA models and MTMM models, a number of fit indices were used. Chi-square ($\chi^2$), comparative fit index (CFI), root mean square error of approximation (RMSEA), RMSEA with a 90% confidence interval (RMSEA-CI), and Tucker-Lewis Index (TLI) were used to assess model fit. In evaluating model fit, values greater than .90 indicate acceptable fit for CFI and TLI. For RMSEA, values under .08 indicate acceptable fit (Marsh, 2007).

**Study 3**

**Participants**

The sample contained 253 coaches ranging from 20 to 66 years, with a mean age of 42. The gender distribution was uneven with 223 males, 27 females and three who did not state their gender. In the sample 138 worked full time as coaches, 34 worked between 75 to 99%, 48 worked between 50 to 74%, 38 worked less than 50% and four did not specify. Out of those that did not work full time two persons worked less than 50%, 27 worked between 50 to 99%, 220 worked full time or more than full time and four did not specify.

**Measures**

Study 3 used two independent measures to investigate how they are related to coach burnout. The first measure was the Survey Work-Home Interference (SWING) (Geurts et al., 2005). SWING measures work-home interference in four ways: negative and positive work-home interference and negative and positive home-work interference. In Study 3, only the two subscales measuring the negative aspects were included owing to our interest in burnout as a negative concept. Negative work-home interference investigates a person’s perception that the work environment negatively spills over onto life at home with both family and friends. A sample item is
“You do not have the energy to engage in leisure activities with your spouse/family/friends because of your job”. Negative home-work interference refers to when life at home with family and friends interferes with one’s work. A sample item is “Problems with your spouse/family/friends affect your job performance”. Answers are given on a 4-point Likert scale where 0 = Never, 1 = Sometimes, 2 = Often and 3 = Always

Workaholism was measured using the Dutch Work Addiction Scale (DUWAS) (Schaufeli & Taris, 2004). The DUWAS has two subscales that measure two aspects of the workaholism concept. The first subscale measures compulsive work, which is levels of engagement in work that can reach compulsive levels. A sample item is “I find myself continuing to work after my co-workers have called it quits”. Excessive work habits cover another aspect of the workaholism construct. Excessive work refers to when a person seems to spend more time at work than superordinates expect him/her to spend. A sample item is “It is hard for me to relax when I’m not working”. Answers are given on a 4-point Likert scale where 1 = (Almost) never, 2 = Sometimes, 3 = Often and 4 = (Almost) always.

**Quantile regressions**

The data were analysed using the R application for quantile regression in IBM SPSS (version 22). Quantile regressions were chosen as the statistical method because the study’s aim was to determine whether the level of exhaustion influences the strength of the association between the independent variables and exhaustion (Binder & Coad, 2011; Cade & Noon, 2003). Quantile regression is a nonlinear method that analyses regression estimates (slopes) and variation in the data by examining whether the independent variable influences the dependent variable differently depending on how high scores the individuals in the set quantile have on the dependent variable (Cade & Noon, 2003). Quantile regression analyses associations between independent and dependent variables as nonlinear by looking at the influence of the independent variable in different percentiles of the dependent variable (Binder & Coad, 2011; Cade & Noon, 2003; Ivarsson & Johnson, 2014). Quantile regression added the possibility to focus on those individuals with high scores on exhaustion (Binder & Coad, 2011). The quantiles were set to the 25th, 50th, 75th and the 95th percentiles. The reason for choosing 25th, 50th, 75th and 95th percentiles was that we wished to cover participants who seem to have low scores on burnout (25th percentile), those who are in the mid-range (50th percentile) and those scoring high (75th percentile). We also wanted to separate those who score extremely high (95th percentile), because persons who score this high are, theoretically, very exhausted and therefore have a higher risk of experiencing burn out.
Results

Study 1. An interpretative phenomenological analysis of burnout and recovery in elite soccer coaches

Because we know very little about how the burnout process is described by elite coaches, the first study in the present thesis used interviews. An interview-based study was also chosen to give me new ideas about what kind of research to do on coach burnout in the future, considering the limited amount of research performed in the European context since the late 1990s. The sample I had access to was also unique in many ways, because it included football coaches at the elite level – a group that is very prominent in the media as well as often difficult to gain access to. Therefore, an interview study had the potential to be both interesting and unique.

The sample was a subsample of the coaches included in Hjälm (2007), a study in which almost all Swedish elite football coaches participated during the course of a certain year. The eight coaches with the highest self-rated values on exhaustion, based on the cut-off values for the MBI, were interviewed about their experiences of stress and possible burnout. The interviews focused on their experienced symptoms, causes, and what strategies they had used when recovering from their exhaustion. It is also worth mentioning that when the interviews were conducted, none of the eight coaches was on sick leave for stress-related issues.

Interpretative Phenomenological Analysis (IPA) was chosen because I wanted a clear individual focus that also offered sufficient interpretative freedom. The individually focused analysis of the eight interviews resulted in two profiles – one performance-oriented profile and one life event profile – that characterized the eight persons’ experiences of exhaustion in an interesting way.

The performance profile was related to the performance culture of elite sports, in general, and elite football, in particular. In the performance profile, coaches described a very similar background because they all had completed a similar coach education programme provided by the Swedish Football Association, and some of them also attended an academic coach education programme together. Some of the coaches described how their education had shaped a culture in which one should work extremely hard and do everything to win, which resulted in extremely long workdays, also because they did not have a fixed working schedule. Further, it was easy to think about coaching around the clock. For a person who is perfectionistic, this may be extremely harmful. The coaches’ identity was also described as a potential problem. If a coach had the drive needed to become a coach, he/she could get caught up with this role and leave other responsibilities like family and friends behind. The identity of being a coach can lead, in the short term, to extreme engagement in the job, but when things start to turn it may have disastrous consequences both for family life and for themselves – for
example if they get fired or begin to doubt their competence. Also, handling streaks of poor results was perceived as very problematic, for example when the coach’s mood was based on his/her team’s performance.

Another cause of burnout had to do with the coach having the ultimate responsibility for the team’s performance; if one’s team does not perform well, there is an immediate risk of getting fired. The same insecurity came when contracts were about to expire and no new offers from the club or other clubs were presented. For coaches in the top leagues or for coaches who have been in the job for a long time, the risk of getting fired or being without a club for a while may not be terribly problematic, because they may have an economic buffer and will most surely get a new offer. However, for coaches who are at the elite level but have not reached the top, it is not as easy. They may not have an economic buffer and getting fired could also decrease their chance of getting a new job.

Other causes that were brought up were the limited number of coaching jobs available in Swedish elite football. Therefore, a coach may have to accept any coaching job offered, even if it is not particularly attractive. The job may not be attractive because the commute to the training ground is very long from home or because the club does not feel like the right club for the coach at the moment. But such jobs must be accepted in any case if there are no other offers on the table. The scenarios related to logistics and the work situation could be perceived as extremely stressful.

The symptoms described by coaches in the performance profile were mostly related to the dimension of cynicism or disengagement from the job, although they were chosen based on their exhaustion scores. The coaches could change their personalities, get angry over things they thought were minor before, they could become unsocial and did not want to run into friends or fans when they were at the grocery store or in town.

For the performance profile coaches, the way back was often focused on the job or how to handle the job. This could involve beginning psychotherapy or getting help from a doctor. However, another strategy was to change jobs instead of learning to handle the consequences. This could entail, for example, beginning to work with academy teams instead where the performance demands are lower. It could also involve changing jobs completely and removing oneself completely from the performance environment of sports.

The second profile was characterized by combinations of smaller life hassles and stressors that, when added together, were perceived as being too much to handle, at least for some of the eight coaches. The result was different types of perceived time conflicts. For example, some coaches did not get paid as much as they needed to support their families and therefore needed a second job. The working hours of an elite football coach can be very challenging when one has a family. This does not necessarily need to be a matter of long working hours, although it was for some, but could also be
that their team has its practices and matches in the afternoons, evenings, and weekends. If you have a family, working at these times can be very problematic, because these are the times when the children need to get picked up from preschool or school or have activities that a parent wants to and should be a part of. Also finding time to spend with your family during the weekends can be very hard. Combining two jobs can also pose problems. Another aspect of the life situation profile was that getting away from the coaching job could be very difficult and the coaches could experience feelings of entrapment in the sport. The entrapment concept comes from commitment theory. People who become coaches have most likely been engaged in a sport for a long time. When engagement in one’s sport becomes a job, it can be very difficult to get out of, because the individual has invested most of his/her time and energy in becoming good first at sports and then at coaching sports, sometimes instead of investing time in education or making alternative career plans (Raedeke et al., 2000; Raedeke, 2004). Situations resembling entrapment were almost exactly what some of our coaches described, combined with the fact that it is difficult to leave a coaching job when one has become used to a certain salary. Maintaining one’s high salary requires continued work as a coach, as other available jobs do not pay as much. Further, organizational shortcomings and conflicts were perceived as very stressful.

When individuals were faced with combinations of life situation stressors, the outcome was exhaustion. The life situation profile was also the profile in which symptoms were directly related to exhaustion. Many researchers see exhaustion as the main dimension of burnout, which is directly linked as a response to prolonged stress in working life (Maslach et al., 2001). Although the causes were not only related to working life but also to life as a whole, those in the life situation profile seemed to have more direct stress-related symptoms, meaning that the exhaustion part was grounded in what we know from earlier burnout research (Leiter & Maslach, 1999).

Recovery from the life situation profile had a great deal to do with learning how to plan one's work in order to ensure time with the family and life outside the sport. It could also mean learning to negotiate contracts that ensure an easier work situation, in which one knows exactly what one can expect from the club and what the club expects of one. The strategy could also involve learning how not to try to solve every problem in one's club and instead just letting things be and accepting them as they are.

The notion that two separate profiles of burnout may exist is new within coach burnout research, and it suggests that perceptions of the burnout experience are highly individual. Some coaches had a hard time dealing with the elite sport environment, whereas others had a hard time dealing with several other parts of life. All of the symptoms that were described (mostly in the performance profile) did not transfer to the definition of the MBI and how burnout is currently measured. Both measurement issues and antecedents from outside sports gave me ideas about how to proceed with Study 2 and Study 3. Because the findings from our eight interviews
indicated that the experience of exhaustion seemed to be very individual, I wanted to test the options available for measuring coach burnout. Therefore a study testing three different burnout measures with definitions stemming from the MBI was designed. One measure was the commonly used MBI-ES, one was the context-free OLBI and the last was the sport-context-framed CBQ.

**Study 2. How to Measure Coach Burnout: An Evaluation of Three Burnout Measures**

During the work with Study 1, my knowledge about the history of the burnout concept developed. One very interesting point is that, before 1982 when the MBI was introduced, burnout included 132 described symptoms (Schaufeli & Enzmann, 1998). However, when the MBI was introduced, it became the measurement used in more than 90% of the published burnout studies (Kristensen et al., 2005; Shirom & Melamed, 2006). When reading about the 132 symptoms, some are similar to the symptoms the football coaches in Study 1 described. The immediate step from 132 to three burnout symptoms gave me ideas about how burnout is operationalized and measured, in organizational psychological studies of burnout and in coach burnout especially. What I saw was that there had been some kind of development and discussion of how to measure and operationalize burnout in the organizational research (Kristensen et al., 2005; Schaufeli & Taris, 2005; Shirom, 2005) as well as in the research on athlete burnout (Cresswell & Eklund, 2006; Raedeke et al., 2013).

In the area of coach burnout, the same definition and measurement have been used in all published studies except one. This is the educator version of the MBI (MBI-ES). The MBI has rather serious problems concerning its factor structure, problems that are manifested both in convergent validity and in discriminant validity. There seems to be an almost total lack of reflection on the quality of the MBI in coach burnout research. Out of the 22 burnout studies focusing on coaches that have been published between 1982 and 2014, none has reported results from a confirmatory factor analysis. This means that, until 2014, the research community has had no indication of how the MBI-ES works psychometrically in the coach context. Because the coaches’ burnout experiences, as seen in Study 1, seemed to be much more complex than what the MBI-ES reveals, we wanted to test the MBI and other possible measures to use in a coach context. Because the MBI is the measure one has to relate to when doing burnout research, I chose three measures that are theoretically based on the MBI, but that have a different contextual focus. The MBI-ES, reworded for coaches, was the first choice. The second one was the Oldenburg Burnout Inventory (OLBI), a burnout measure developed to work for all types of occupations. The OLBI theoretically builds on the definition of burnout from the MBI-GS. The MBI-GS and MBI-ES are alleged to cover the same burnout dimensions (Maslach et al., 1996). Finally, a coach-adapted version of the Athlete Burnout Questionnaire was chosen, called the Coach Burnout Questionnaire (CBQ). The ABQ is a sport-specific
burnout measure that is based on the MBI. It has recently been reworded to work for coaches as well (Lundkvist, Stenling, Gustafsson, & Hassmén, 2014).

Two types of SEM analysis were used, first a CFA to independently test the factorial validity of the measures. Second, a MTMM analysis was used to test how much variance the dimensions of the three measures shared (convergent validity) and how much was specific to each method (discriminant validity). The correlated trait-correlated method minus one model (CT-C[M-1]) was used (Eid, Lischetzke, Nussbeck, & Trierweiler, 2003). In this model, one measure is chosen to be the reference to which the other measures are compared. Because the MBI-ES is the measure that has been predominant in the coach burnout research, it was chosen as the reference model. In the CT-C[M-1] model, this means that the dimensions of every measure are tested for how much convergent and discriminant validity they share with the MBI-ES.

The CFA showed that there were psychometric problems with all measures individually with regard to factor structure. For the MBI three items were removed; it is recommended that two of them be removed in European contexts and one item from emotional exhaustion cross-loaded onto personal accomplishment. For the CBQ, one item was removed. The removed item was one out of two positively worded items; this was done because of residual covariance between these two items. For the OLBI there were problems with all eight items that were positively worded since they, when reversed, load little on the negatively worded items. Therefore, the eight positively worded items were excluded.

The MTMM analysis showed that the OLBI was the measure that had the most convergent validity in relation to the MBI. However, because the two dimensions of the OLBI were highly correlated (i.e., a correlation coefficient larger than 1 between the two OLBI factors), the two dimensions had to be collapsed into one dimension. The CBQ was more method specific and displayed less convergent validity and more discriminant validity compared to the MBI. The three exhaustion scales also seemed to measure similar constructs when method specificity, especially from the CBQ, was large between depersonalization and reduced sense of accomplishment in the MBI and devaluation and reduced sense of sporting accomplishment in the CBQ. This means that the CBQ covers a burnout definition that is different from that of the MBI.

Although some things could have been done differently, our results should have an impact on future coach burnout research because we highlight several major problems with the existing burnout measures. First, there are several problems with using the MBI-ES for coaches, the measure that has been used during the past 30 years; many studies report problems with the factorial structure (Aluja et al., 2005; Beckstead, 2002; Boles et al., 2000; Byrne, 1993; Kanste, Miettunen, & Kyngäs, 2006; Oh & Lee, 2009; Schaufeli et al., 2001; Schaufeli & Dierendonck, 1993; Vanheule, Rosseel, & Bogaerts,
Second, if researchers want to use a measure that captures the dimensions that have been stated by Maslach, neither of the two examined in Study 2 is a good option. This is because the two dimensions of the OLBI have very high cross correlations, and because the CBQ does not seem to cover dimensions different from those found in the MBI.

Even if the CBQ, in our sample, did not measure the same dimensions as the MBI, it is still the measure that I recommend out of the three we tested. One reason for this is that the dimensions are separate from each other. Another argument is more theoretical: If we wish to view burnout as a syndrome, we need to use definitions that seem reasonable for the sporting context. However, much more research is needed on the measurement of coach burnout. For example, we need to study whether and how the three dimensions are related over time. By doing so, it will be easier to discuss whether burnout is indeed a syndrome or rather three independent symptoms. A study on the measurement of coach burnout would have been more fruitful if measures with contrasting burnout definitions had also been tested. By comparing different definitions, we could initiate the badly needed discussion of the definition of coach burnout in the research and determine whether the definition that still predominates is the one that seems to work best.

**Study 3. How are workaholism and work-family conflicts related to coach burnout?**

In Study 1, one of the most interesting facts we learned was that the job itself can cause some people to work very long hours because coaching is a job where you always have things to do. We also learned that some coaches seem to have problems combining family life with coaching. To test whether compulsive work habits and combining family life and a coaching job may be related to coach burnout, a third study was conducted (Study 3) to examine the relations between workaholism, home-work/work-home interference, and the exhaustion subscale from the CBQ, which serves as the burnout outcome.

Workaholism is a psychological construct that fits well with how we interpret the problems that some coaches perceived to be causes of burnout. Workaholism is an addiction to work that concerns individuals’ descriptions of work behaviours that are compulsive and/or highly excessive with regard to time spent working (Clark et al., 2014). I chose the Dutch Work Addiction Scale (DUWAS), which covers two aspects of workaholism (Schaufeli & Taris, 2004). Compulsive work concerns an attitude to work that is characterized by descriptions of compulsive engagement. Excessive work is when a person works more than what is expected by his/her employer.

Further I chose the work-family conflict construct, which covers two directions of interference caused by different parts of life: first, when working life is perceived to interfere with family life at home and, second,
when family life is perceived to interfere with working life. Negative home-work/work-home interference was measured using the Survey Work-Home Interference (SWING) (Geurts et al., 2005). Assessing work-family conflicts in only one person in a household where at least two persons live is, of course, a problem. Also asking the partner would be a more valid approach to looking at work-home/home-work interference, because any significant other would have to take more responsibilities at home when living with a coach. However, in the data I had at hand, this was not an option. I do believe, however, that looking at the combination of having a coaching job and a family is an interesting question, in that it addresses how much the coach believes his/her job interferes with family life and vice versa.

The analysis showed that using quantile regression was fruitful, and some interesting results were obtained. Negative work-home interference had statistical associations with burnout in all four quantiles. However, in the 95<sup>th</sup> and most extreme quantile, the individual variation increased and the beta weight decreased. The quantile regression indicates that the association between negative work-home interference was not linear and that the individuals with the highest values of burnout also have more varied scores on negative work-home interference.

Negative home-work interference had statistical associations on the three lower quantiles. Interestingly, the 95<sup>th</sup> quantile had the weakest association between negative work-home interference and burnout, showing which individuals had the largest risk for burnout and other health problems. The quantile regressions indicate that the association between negative home-work interference and burnout is not linear.

For the two scales measuring workaholic behaviours, the associations with burnout were weak and not statistically associated for all percentiles. The associations were not linear and also showed the same tendencies for variation as the two work-home/home-work subscales. Namely, that the individuals at the 95<sup>th</sup> quantile have a higher standard error than the individuals in the other quantiles.

**General discussion**

The present thesis aimed to further increase our knowledge about burnout in coaches through three studies using different methods. Study 1 aimed to gain knowledge about coaches’ perceived burnout experience, Study 2 to gain knowledge about the measurement of coach burnout by evaluating three different burnout measures suitable in the coach context, and Study 3 to look at the relations workaholism and work-home/home-work interference have with burnout. Study 1 analysed interview data from eight coaches who had previously scored high on an exhaustion scale. Questions were focused on their perceived symptoms, the causes and recovery. Study 2 focused on the measurement of coach burnout; three potential self-rating measures were analysed for convergent and discriminant validity by using a multi-
trait/multi-method analysis (CT-C[M-1]) model. Study 3 focused on whether the level of workaholism and/or work-home/home-work interference influenced the level of exhaustion differently depending on the coaches’ exhaustion score. The data were analysed using quantile regression.

Two profiles of coach burnout

Study 1 used interview data to investigate perceived symptoms, causes, and recovery from burnout. Using an analysis method with an ideographic focus, two profiles were chiselled out from the interview data. The first profile included coaches who had problems dealing with the elite football environment (performance profile). Symptoms, apart from exhaustion, were focused on mood swings, aggressive, and unsocial behaviours. For those who had a combined life situation (life situation profile) that was too much to handle, symptoms were related to exhaustion only. The coaches in the performance profile tried to learn how to handle the pressure in elite football and/or changed to a job with less performance pressure. The coaches in the life situation profile tried to learn how to better plan their situation at work and at home. Other strategies were aimed at learning to say no and to negotiate better deals with their clubs. Energy giving strategies like walks, doing hobbies, and spending time with the family were used by coaches with both profiles.

Most of the results from Study 1, however, had been found in other studies both on coaches and people in other professions. Performance issues as antecedents to burnout have been discussed before (Kelley et al., 1999; Kelley, 1994; Omotayo, 1991; Vealey et al., 1992), as have perfectionism (Tashman et al., 2010), entrapment in the coaching job (Raedeke et al., 2000; Raedeke, 2004), and organizational problems (Capel et al., 1987; Kelley et al., 1999). Other findings, such as the problems associated with having a family and being a coach and job insecurity have not been studied in a coach context, but are well known in the burnout research in other areas (Burke & Greenglass, 2001; Dekker & Schaufeli, 1995; Ray, 1994). However, the idiographic methodological approach also provided some interesting findings, especially linked to the two profiles, and showed that the burnout experience seems to be individual and very complex and to stem from several different causes, followed by a range of symptoms. The coaches’ descriptions also provide ideas about why perfectionism can be problematic in the coach context; the coaches talk about the job itself and how rumination about tactics and team selection combined with perfectionist behaviours can create workdays that become extremely long and exhausting. The same thing can be said about performance issues, as they were described in terms of two aspects that could be interesting. One aspect was the degrading feelings that following losing matches. Another interesting aspect was linked to job insecurity, in that poor results may affect burnout because job insecurity is built into the sport employment system through time-limited contracts.
Further, presenting two profiles with different antecedents that differently influence the symptoms one perceives and how to deal with them to recover are new to coach burnout research. The individual perceptions of burnout will be discussed later when I discuss my results from all three studies in the main findings.

The measurement of coach burnout

Study 2 focused on the question of which burnout measure, based on the MBI, to use in a coach context. The findings show that the factor structure was problematic for all tested measures, although the CBQ had CFI, TLI and RMSEA values that indicated a factor structure that was better than MBI and OLBI. However, to obtain acceptable model fit, items were removed. The CBQ items that were framed positively shared too much variance and one loaded on all three factors. MBI had a factor structure that was acceptable, although three items had to be removed due to low factor loadings or cross-loadings on more than one factor. The OLBI had the worst factor structure, as two positively worded factors had to be removed and two negatively worded factors had problems separating from each other and were merged into one. In the MTMM analysis, the MBI and the OLBI had convergent validity and the CBQ was more method specific, especially for the two factors sport devaluation and reduced sense of sport accomplishment.

The findings from Study 2 are in line with previous research. When it comes to confirmatory factor analysis, the psychometric problems associated with MBI are widely known. To obtain acceptable model fit values, modifications like deleting and cross-loading items are more the rule than an exception. From the eleven studies I found testing factor structure for the MBI-ES all modified the model by removing items, cross-loading items on more than one factor, or allowing residual covariance between items (Aluja et al., 2005; Beckstead, 2002; Boles et al., 2000; Byrne, 1993; Kanste et al., 2006; Oh & Lee, 2009; Schaufeli et al., 2001; Schaufeli & Dierendonck, 1993; Vanheule et al., 2005). However, it is worth mentioning that there are studies in which the MBI-HS has shown good model fit values in health care samples (Hallberg & Sverke, 2004). The factor structure for the OLBI has shown more ambiguous results (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Demerouti et al., 2003; Halbesleben & Demerouti, 2005). The ABQ (the athlete version of CBQ) has previously been tested in both CFAs and the MTMM analysis with the MBI-GS. The model fit has in these cases been acceptable, although the procedure is sometimes unclear (Gustafsson, Skaog, Podlog, Lundqvist, & Wagnsson, 2013; Smith, Gustafsson, & Hassmen, 2010).

The results for the MTMM analysis show that OLBI cover aspects that are similar to MBI whereas CBQ, with its contextual focus on sport, cover aspects that have less in common with MBI. However, the ABQ has previously shown convergent validity with the MBI-GS (Cresswell & Eklund, 2006; Raedeke et al., 2013). My results showing less convergent validity
could be due our using the MBI-ES instead of the MBI-GS or because we used a CT-C(M-1) – one model that employs a comparison standard method, which the other two studies do not.

Although the results of our study are interesting, there are a few things that could have been done differently. First, the study would have been much more interesting if more measures like the Copenhagen Burnout Inventory (CBI), Karolinska Exhaustion Disorder Inventory (KEDS), and Shirom Melamed Burnout Measure (SMBM) had been included in the analysis. Because the SMBM, CBI, and KEDS all have different theoretical bases from the MBI, OLBI, and CBQ, they could not have been included in the MTMM analysis as a whole, but parts of them could have been included. Using measures with different theoretical approaches would have given more theoretical depth to the study. One option could have been to compare bifactor CFAs for the burnout measures. A bifactor CFA tests whether subscales in a theoretically multidimensional concept are needed to say something different than the other subscales do about the concept (Reise, Bonifay, & Haviland, 2013). Instead of looking at the factor loadings for a theoretical model, attention has been paid to how much unique variance each factor explains and how much variance is explained by a global factor (Reise et al., 2013). A recent study showed that the global burnout factor explained a large part of the total variance (53%), whereas exhaustion, depersonalization, and personal accomplishment only explained smaller amounts of the total variance (11-21%) (Mészáros, Adám, Szabó, Szigeti, & Urbán, 2014). Further, both exhaustion and depersonalization seemed to be more related to the global burnout factor than to their respective subscales. Only personal accomplishment had item loadings for all items that loaded significantly on both the global factor and the subscale. This suggests that measuring burnout with the MBI as a global factor seems relevant, that exhaustion and depersonalization add very little to the total variance and may be used as a combined factor as well as that personal accomplishment seems to add something different to the burnout construct (Mészáros et al., 2014). An additional analysis using the same data as used in Study 2 provided some interesting results. For the CBQ, 84% of the total variance was explained by the global burnout factor. Emotional and physical exhaustion explained six percent of the total variance, devaluation explained three percent, and reduced sense of sport accomplishment explained seven percent. For the MBI, 61% of the total variance was explained by the global factor, emotional exhaustion explained 13%, depersonalization explained three percent, and reduced sense of accomplishment explained 23%. For the OLBI, 75% of the total variance was explained by the global factor, 14% was explained by exhaustion and 11% by disengagement. These results once again raise the question of the multidimensionality of burnout. For the CBQ, the respective subscales explained very little exclusive variance, which indicates that the subscales seem to be framed at constructs that are perceived as very similar. MBI explained more variance but had another problem, namely that reduced sense of accomplishment explained much more variance than the other two subscales, which may give those items too much importance relative to the other two subscales. The OLBI was more evenly distributed
than the other two. The question is whether the relatively small amount of exclusive variance captured by the subscales makes it fruitful to use a multidimensional measure to capture burnout?

**Work-home/home-work interference and coach burnout**

Study 3 focused on whether work-home/home-work interference and workaholistic behaviours were associated with burnout by using quantile regressions. Quantile regression is a method that analyses data in defined quantiles to test whether the level at which individuals score on the dependent variables has an impact on regression estimates and standard errors of the independent variables. Some interesting findings were obtained. First, the associations between workaholism and burnout were not statistically associated or linear in any of the tested quantiles. The result can be interpreted in different ways. Because there are studies showing the opposite results, it could be interpreted as contradicting prior knowledge (Clark et al., 2014). However, studies that have studied workaholism and burnout in combination with work engagement have shown that unengaged workaholics have higher levels of burnout than engaged workaholics do (van Beek, Taris, & Schaufeli, 2011). One explanation for the present results could be that sport coaching is a job that is driven by passion and engagement as well as a job that may be a leisure activity (McLean & Mallett, 2012). Our sample could have included more work engagement than samples from other occupations, which may explain the results. However, any speculations about the passion involved in coaching are only theoretical and need more research.

The associations between both negative work-home and home-work interference were more in line with prior knowledge, which has shown positive relationships to burnout (Burke & Greenglass, 2001; S. Geurts, Rutte, & Peeters, 1999). However, the quantile regressions gave us some new and interesting knowledge about the associations between work-home/home-work interference and coach burnout. The relationships are not linear. For the individuals in the 95th percentile, the associations were weaker and the standard error seemed to increase for both negative home-work interference and negative work-home interference. The results from the quantile regression are difficult to interpret, because the individuals that burnout researchers are interested in are those with the highest burnout scores. When associations get weaker for those scoring high on the burnout measures this underline one possible problem with many burnout studies. Therefore, using quantile regression could be a fruitful alternative to linear statistical analyses when analysing cross sectional data.

**Contribution to the coach burnout research**

In my opinion, the results presented in the three studies in this thesis generate two main findings. First is the finding that the way in which coach burnout has been measured to date is problematic. I believe that the results
from study two pinpoint that the use of MBI is have several problems both
with single problematic items and cross loading items. CBQ is an alternative
that can be used but this measure struggle with similar problems as MBI and
since it has method specificity compared to MBI we cannot be sure what the
dimensions sport devaluation and reduced sense of accomplishment actually
cover. More work is needed in this area of research.

The second main finding is that one universal definition of burnout that
holds both clinically and in research may be hard to find because the
perceptions of symptoms varies between individuals. Both these findings
comes back to the definition and measurement of burnout. I believe that
much more work is needed in this area. Although the results presented in
the three studies have used different methods and looked at different aspects
of coach burnout, their combined findings in one way or another suggest that
burnout is an individual experience. In Study 1, this aspect of individual
experience is shown in two different profiles, where some coaches described
several symptoms related to changed behaviours like mood swings,
aggressiveness, and unsocial behaviour, while others had symptoms that
were more closely related to exhaustion exclusively. The antecedents also
differed, where some experienced problems with the coaching job and
environment in sports, and others experienced problems combining family
life and work. In Study 2, the psychometric problems that all burnout
measures showed suggest that the factor structure of all three tested
measures is problematic. Combined with the problems with all tested
measures in Study 2, this further underlines how problematic the burnout
experience seems to be and perhaps also that symptoms that actually are
burnout symptoms may not match the three that Maslach et al. (1996)
proposed that have been predominant in the burnout research since the
beginning of the 1980s (Kristensen et al., 2005; Schaufeli & Enzmann, 1998;
Shirom & Melamed, 2006). The results from Study 3 further support the
idea that burnout is an experience based on individual differences, as the
associations between the dependent and independent variables were not
linear, and became weaker and showed larger variation for those scoring
high on exhaustion. Naturally, the results from Study 3 must be replicated in
other samples and with other research designs, however, they do reveal an
interesting pattern of associations.

Measuring and defining burnout

Until 2002, the MBI was used in 90% of all studies that measured burnout
(Maslach et al., 2001; Schaufeli & Buunk, 2003). The predominance of the
MBI or measures based on MBI has created a major problem. Some
researchers now argue that the definition of burnout is synonymous with the
definition underlying the MBI (Halbesleben & Buckley, 2004). A trap that
study two in this thesis is a good example of. Seeing the definitions of
burnout as synonymous with the MBI is problematic, because academic
debates about how burnout should be defined are very rare (Shirom &
Melamed, 2006). However, there are some exceptions. In a special issue of
Work and Stress from 2005, a number of different researchers started a debate about the problems associated with unanimously defining burnout as proposed by Maslach and therefore solely using the MBI as a measure. Other solutions to both definition and measurement problems were also proposed (Kristensen et al., 2005; Shirom, 2005). The argument for keeping the Maslach definition was that burnout has to be a syndrome containing emotional exhaustion, depersonalization/cynicism and reduced accomplishment (i.e., Maslach owns the definition of burnout). Further, Schaufeli and Taris argued that other ways of defining burnout are not valid because Maslach’s definition is what has been used in the past and therefore should be used in the present and the future. Other definitions, like Kristensen’s (2005) or Shirom and Melamed’s (1999), cannot be called burnout, but should be called something else (Schaufeli & Taris, 2005). In this debate, I would clearly take a stand in favour of development of the burnout construct, because theoretical/conceptual development is part of academic work and the evidence that is brought up to problematize Maslach’s burnout definition makes several strong points. In this section, I will try to sort out my view on how to measure and define burnout for coaches and in other areas and I will also suggest research ideas concerning how to address these issues in the future.

Defining burnout

The research presented in the present thesis indicates that perceived experiences of burnout seem to be very individual. Different persons have different symptoms that are related to exhaustion and, as shown in Study 1, behavioural changes that are not covered by cynicism or depersonalization are included as well. The varying results may be an indication that the burnout experience is specific to the individual rather than to the context, which is what researchers have suggested before. Instead of claiming that burnout is perceived differently in different contexts (Eklund & Cresswell, 2007; Maslach & Schaufeli, 1993; Maslach, 2003), I would argue that burnout is perceived differently by different persons. Recent studies where patients with stress related exhaustion reported several and different somatic symptoms give a somewhat similar view that several symptoms can be related to exhaustion (Glise, Ahlborg, & Jonsdottir, 2012; Glise, Hadzibajramovic, Jonsdottir, & Ahlborg, 2010).

All studies in the present dissertation support the idea that burnout may include more than three dimensions. They indicate that burnout and its antecedents seem to be highly individual experiences, involving different symptoms and antecedents for different people. In Study 1, we found two profiles among eight coaches, but it is plausible that other studies would find other experiences and other profiles. One problem that can be discussed based on our findings is that some of experiences described in Study 1 are not included in any of the measures that are most often used in the burnout research. Although the profile where the performance culture of elite sport was seen as the major problem, a couple behaviour changing symptoms were
described. However, in the very narrow definitions of depersonalization/cynicism/devaluation/disengagement, only a few of the described symptoms were covered. A burnout construct cannot include all possible symptoms related to a burnout experience. However, this indicates that the narrow definitions of the burnout dimensions that were presented in Maslach’s early research and that function as the basis for the MBI and the other measures I have tested (Halbesleben & Demerouti, 2005; Harris & Ostrow, 2008; Maslach et al., 1996; Maslach & Schaufeli, 1993) may have been good descriptions of the experience of persons working in human service occupations. Building an entire concept solely on the basis of human service samples would seem to be problematic. One additional piece of evidence of the problems of Maslach’s burnout definition is that the psychometric testing of the MBI has not been convincing. A meta-analysis of the reliability of the MBI showed that the Cronbach’s Alpha values were problematic. Further, in the majority of studies, tests of the factorial validity of the MBI-ES and MBI-HSS have shown model fit values under acceptable thresholds (Aluja et al., 2005; Beckstead, 2002; Boles et al., 2000; Byrne, 1993; Kanste et al., 2006; Oh & Lee, 2009; Schaufeli et al., 2001; Schaufeli & Dierendonck, 1993; Vanheule et al., 2005). Second, the arguments against the MBI make it even harder to claim that burnout should be defined and measured by the three dimensions in the MBI.

The burnout syndrome?

Another problem with the MBI and its position as the burnout measure of choice is that emotional exhaustion, depersonalization, and reduced accomplishment in a way became the burnout concept. However, several other definitions of burnout were also plausible before the MBI began to totally dominate as the burnout measure early in the 1980s (Schaufeli & Buunk, 2003). The MBI’s dominance may be harmful to burnout research as a whole, because other symptoms have been, in some sense, neglected. The MBI has, however, been modified to suit other occupations than the helping occupations. But still, the definition of burnout stems from the human service context. This indicates that more context-specific research on the burnout concept is needed to gain knowledge about how burnout could be defined in different occupations. However, a more relative approach to the concept runs a very large risk of devaluing the value of burnout in the research, and there is a need for a definition that is a lowest common denominator.

Based on how burnout is defined (and measured) by Maslach, it is seen as a multidimensional syndrome, meaning a combination of different interrelated symptoms (Maslach et al., 2001). The debate concerning burnout being a syndrome, defined as emotional exhaustion, depersonalization/cynicism, and reduced sense of accomplishment, has yet to be resolved. First, the proposed causal relationships between the burnout dimensions have been criticized, because it seems that the relations between emotional exhaustion, depersonalization/cynicism, and reduced sense of
accomplishment follow different causal paths where emotional exhaustion leads directly to depersonalization and reduced sense of accomplishment (Lee & Ashforth, 1993). When the factor structure of the MBI has been tested, it has seldom shown acceptable factor structures (Worley, Vassar, Wheeler, & Barnes, 2008). But this may be more of a psychometric issue than a conceptual one. However, because reduced sense of accomplishment also does not always correlate with the other two dimensions, more research is needed on defining burnout as a syndrome.

During the research field’s progress, more and more critique has been raised and aimed at Maslach et al.’s three-dimensional definition. One important critique concerns the view that the three dimensions have a sequential order, where exhaustion comes first, followed by depersonalization/cynicism, and finally by personal accomplishment/professional efficacy. Longitudinal data have shown that the best sequential model is on in which emotional exhaustion precedes both depersonalization and personal accomplishment, underlining the importance of the exhaustion dimension in burnout (Lee & Ashforth, 1993). The critique also has consequences for the view of burnout as a three-dimensional concept and raises the question of whether or not personal accomplishment should be part of the burnout concept. One argument for a two-dimensional definition is the results of a meta-analysis showing that personal accomplishment seems to develop independent of exhaustion and depersonalization (Lee & Ashforth, 1996). The MBI manual also states that the three burnout dimensions should only be measured separately (Maslach, Jackson, & Leiter, 1996). The notion of burnout as a syndrome is a bit problematic if one is not supposed to combine the three burnout dimensions into one latent burnout score.

**Proposed further research on the syndrome idea**

As I have stated, it is unclear whether burnout, defined as emotional exhaustion, depersonalization/cynicism, and reduced sense of accomplishment, can be argued to be a syndrome. This lack of clarity, along with the psychometric problems, opens up for further development of both definitions and measures of burnout.

There are several ways to try to further enhance our knowledge of the temporal order of the burnout dimensions. One way could be to study two or more different burnout measures together. Data could be analysed using both models that look for linear relationships and models that have a person-oriented analytic approach. For the person-oriented approach, growth mixture modelling could be used. Growth mixture modelling is a SEM-based method of analysing longitudinal data with a person-oriented focus (Hertzog, von Oertzen, Ghisletta, & Lindenberger, 2008). Using person-focused methods could provide clusters of people with different paths in the burnout process. Combined with other variables that are theoretically related to burnout, it may be possible to learn more about the burnout process and to see whether different personalities and persons
perceiving different resources have the same paths in relation to the burnout dimensions.

**Definition of coach burnout**

Burnout as defined in the MBI and other measures based on the MBI see burnout as a concept that differs across occupations, both in terms of incidence and in terms of how it should be operationalized. For example, somewhat different definitions of burnout have developed in the area of sports (Raedeke & Smith, 2001). The development of context-specific measures is in line with the idea that burnout is a context-specific syndrome (Cresswell & Eklund, 2006; Maslach, 2003). One reason for this is that the MBI measures symptoms (exhaustion), maladaptive coping (depersonalization/cynicism), and antecedents (reduced sense of accomplishment). It has not been explained how Maslach’s three dimensions are theoretically related to each other, and mixing symptoms and antecedents renders the whole definition unclear and problematic (Kristensen et al., 2005; Shirom & Melamed, 2006). Although there are several alternatives to the MBI, my suggestion – until more research is done both on coaches and in other contexts – is to use a definition that only includes exhaustion. Measurements that mix antecedents and symptoms, like the MBI or CBQ, are problematic when it comes to fitting into different contexts, and they limit the independent variables that may be used. For example, in a coach context, the athletes’ performance results are believed to be an antecedent to burnout (Kelley et al., 1999; Kelley, 1994). When we study sport results or performance using all dimensions of the CBQ or MBI, there will be a large conceptual overlap between reduced sense of accomplishment and sport results.

All of the problems surrounding the currently most-used definition of burnout for coaches make redefining the concept almost a requirement. To this date MBI or CBQ have been used, but neither the MBI nor the CBQ is based on a theoretically and psychometrically sound and valid definition. From my point of view, there are three options for defining (coach) burnout. First, burnout could be defined in the same way as the Swedish National Board of Health defines exhaustion disorder with different premises that should be fulfilled and that can vary between persons (Utmatnngssyndrom: Stressrelaterad psykisk ohälsa, 2003). Using exhaustion disorder instead of burnout could be a sound way to go. Another option could be to abandon the notion of burnout as a syndrome when studying it, and instead focus on the exhaustion part. Clinical validations also support the idea that exhaustion is the dimension of burnout that separates persons suffering from burnout from other non-burned-out persons (Roelofs, Verbraak, Keijzers, de Bruin, & Schmidt, 2005; Schaufeli et al., 2001) and all definitions of burnout or exhaustion disorder include exhaustion as the main syndrome (Kristensen et al., 2005; Maslach et al., 1996; Melamed et al., 1999; Utmatnngssyndrom: Stressrelaterad psykisk ohälsa, 2003). The last option would be to use the definition from Shirom
and Melamed (1999). Their measurement (SMBM) have shown sound psychometric properties (Shirom & Melamed, 2006). Another argument to its favour is that there are, although from the earlier version SMBQ, clinical cut-off values that are based on rigorous studies on populations with stress related sick leave (Lundgren-Nilsson, Jonsdottir, Pallant, & Ahlborg, 2012). Using cut-offs from clinical samples in studies on coach burnout would be helpful when judging the levels of burnout in relation to what is seen as a level that is critical and unhealthy.

**Methodological considerations and limitations of the thesis**

Although Study 1 is based on interview analysis, the sample was drawn from self-report measures of emotional exhaustion from an earlier study. The other two studies were based solely on self-report questionnaires. Looking back at Study 1 some things could have been done better. One thing is that we chose to only include persons who had scored high on the exhaustion dimension of the MBI. It would have been better and more fruitful to choose persons who were high on the three different dimensions or combinations. Although the sample was very small and we were not interested in generalizing our conclusions, it would have been interesting to hear experiences from persons who scored high on any of the other dimensions as well. Further, there certainly were options to IPA analyses that could have been fruitful in regard to our data. One option could have been to conduct a thematic analysis with an idiographic element (Braun & Clarke, 2006). A thematic analysis would probably have resulted in a paper that looks very much the same as it does today, but without having to side step some of the methodological guidelines that we did. These breaks with the methodological guidelines mostly concerned whether to include or not include different themes based on how many people had brought them up (see; Smith, 2011). Another option that could have been even more fruitful would have been to use a narrative analysis. Although our two profiles had a clear idiographic focus, a narrative analysis could have given the coaches’ more complex stories more space and therefore even further explained the complexity of the stressors that elite coaches face in daily life (Smith & Sparkes, 2009).

For Study 2, there are several things that could have been done differently in the analysis. The analysis process went from confirmatory to exploratory because of the use of modification indices in the CFA analysis. In order to run the MTMM analysis, the modifications made were necessary. The complete measures were not used and in some respects this gives a picture of all three measures that looks better than it would have looked if we had not deleted items and instead conducted the MTMM analysis with the complete measures. However, using the whole measures was not possible because of inadmissible solutions with several correlations over one and negative variances in the model. One strategy to handle these problems was to test different estimators, including maximum likelihood and Bayes without luck. Although far from optimal, using an exploratory working method is not unique to this study. For the MTMM studies conducted in the field of
burnout, deleting items and cross-correlating items has been the norm. Cross-loading items onto two dimensions and correlating item residuals definitely gives a better model fit to the analysis, but it does not make the actual measure any better (see Demerouti et al., 2003; Nussbeck, Eid, & Lischetzke, 2006; Raedeke et al., 2013). However, using this explorative way becomes a conscious or unconscious strategy to keep defining and measuring burnout using the MBI, despite the underlying problems of both definition and measures.

The removal of items from all three measures also makes the results more complicated to interpret. It could be argued that the results are due to capitalization on chance (MacCallum, Roznowski, & Necowitz, 1992). However, because all previous MTMM studies testing different versions of the MBI and related measures have been shown to have similar problems with cross-correlation between items and dimensions (Demerouti, Bakker, Vardakou, & Kantas, 2003; Halbesleben & Demerouti, 2005; Raedeke et al., 2013).

In Study 3, my greatest concern is with the cross-sectional data. Because of the cross-sectional design, we cannot know what possible temporal effects work-home/home-work interference and workaholism may have on coaches. Had we used longitudinal data collection focused on exploring how workaholism affects exhaustion in certain times of the season since the work intensity may differ when the season is very intensive and when it is off-season, the results could have given a better understanding of a possible relation between workaholism and the possible problems to combine family life and working as a coach. Because studies on workaholism have shown ambiguous outcomes (Brady, Vodanovich, & Rotunda, 2008; Burke, 2001; Clark et al., 2014), it would be interesting to test whether workaholism in certain stressful events over time affects burnout. To test this, one possibility would be to choose coaches with high workaholism before the start of the season. Then stress could be assessed every week and compared with performance results. This multiple case-study-like design could pinpoint certain times that seem to have been stressful and then compare this with exhaustion in the end of the season. Further, because work engagement seems to buffer the relationship between workaholism and burnout, including that variable or a motivation variable could have been fruitful.

**Coach burnout, then, now and in the future?**

Apart from the problems with the burnout construct that have been discussed here, there is a great deal of very interesting research that can be done in a coach context. Considering the research conducted to date (my research included), we have a long way to go. If we were to study personality, behavioural or emotional issues like perfectionism, confidence or anxiety, it is not likely that the results would be different than in other contexts. However, there are other research paths that could answer the question of why coach burnout should be studied. The specific conditions that come with
the specific context surrounding the coaching job could be used when research is designed instead of using antecedents that say little about context specificity. For example, when working as a coach there are several conditions that are specific to the coaching context. The insecurity that surrounds the working role, in terms of the great risk of getting fired after poor performance results, is not usual in other contexts. Further, demands for good results are often very high, and in team sports the coach is often the person who is replaced first. Further, coaches must be away from home for long periods and have long work days that interfere with family duties (Lundkvist et al., 2012). The direct stress related to matches and competition could theoretically influence stress that may be related to sleep problems, which may, in turn, lead to exhaustion. Taking advantage of the context specificity of sports could both lead to better research and bring forward interesting ideas about burnout that we know little about.

Burnout research in other professions has looked in much more detail at the work environment as a potential risk factor for burnout (Bakker, Demerouti, & Euwema, 2005; Bakker, Demerouti, & Verbeke, 2004; Schaufeli, Bakker, & Van Rhenen, 2009; Schaufeli & Bakker, 2004). Hence, there are theoretical models that would also fit the coaching context. The job demands and job resources model (JD-R model) has been fruitful in the burnout research and could be one way to start exploring whether sport coaches perceive different demands or resources than do people in other occupations, as well as how job demands and job resources may be related to exhaustion. In the JD-R model, high perceived job demands are associated with increased levels of burnout and high perceived job resources are associated with increased commitment on the job and lower burnout scores (Schaufeli & Buunk, 2003; Bakker, Demerouti, & Verbeke, 2004).

The JD-R model builds on the assumption that even though the tasks in occupations differ, all occupations are based on both negative job demands and positive job resources. Job demands are defined as the social, organizational, and psychosocial aspects of one’s work life that require effort and/or skill and therefore may be perceived as social or psychosocial costs. In the present study, and in line with the theory underlying the JD-R model, job demands are defined as workload or emotional demands (Schaufeli, Bakker, et al., 2009). Job resources, on the other hand, are the tools that a person perceives he/she has in the working role. Job resources can be organizational resources that enable a person to achieve job-related goals or do the tasks that come with the job description. Job resources can also be the support a person gets from colleagues or superiors in doing these tasks. The JD-R model has not been used in a coach setting before, and using it could further increase our knowledge about coach burnout and how coaches perceive their work situation.

Adapting the JD-R model to an elite football context would be very enlightening and provide opportunities to create interesting and relevant study designs. Because the turnover in a sport club is highly correlated with team performance (Dietl, Franck, & Lang, 2008), turnover could serve as a
baseline measure of the demands of team performance. Resources could for example be defined as how large team of leaders and medicine staff that is available to the coach and how many medical positions surround the team, the skill level of players, and other organizational support. Looking at the JD-R model with the demands and resources that surrounds the team in a longitudinal study, where stress is measured every month and exhaustion at the end of the season, would test the JD-R model in a new way and reveal how demands and resources, combined with team performance, controlling for performance demands, affect short-term stress measured weekly and exhaustion measured at the end of the season. Because the percentage of match wins has not previously shown any associations with burnout (Kelley, 1994; Omotayo, 1991), looking at the JD-R and performance longitudinally could be an interesting way to study JD-R model in a coach context. All previous studies investigating the relation with performance have been cross-sectional, which could be seen as a flaw. Another, greater flaw is that the percentage of won matches may not give a good picture of team performance. Using turnover and organizational resources as variables, as well as the JD-R model, may be a better way to study performance issues.

Another variable that separates coaching from other jobs is that seasons have a clear start and end, with theoretically higher pressure the closer to the end of the season one gets. Therefore, a longitudinal study in which coaches are followed over two seasons or more would be interesting using the JD-R model and the usual self-report measures as well. Having several measurement points could show how the season affects perceived demands and resources towards the end of the season and whether these perceptions have changed compared to when the season started. Because demands and resources differ a great deal across organizations, a person-centred approach could be fruitful. Person-centred methods would provide opportunities to study whether change in organizations or change of organizations could alter perceived job demands and job resources. This may help us to further understand which types of organizations are associated with reduced risk of stress and burnout.

Another interesting way to study the relations between burnout and the JD-R model in a sport organization could be to conduct intervention studies. Based on what we know from previous research both on coaches and in other contexts, behavioural and organizational variables are two correlates with burnout. It could be interesting to carry out studies in which one organization is exposed to an intervention based on act and mindfulness, from cognitive behavioural therapy, to handle stressful events and another organization instead is restructured in a way the research has shown promotes more perceived resources and less perceived demands. Comparing the stress and exhaustion scores of all staff in a sport organization would give an idea of what constitute the most effective way of reducing stress in sport organizations.
**Self-report studies**

In the burnout research, researchers, including myself, often make a direct link between our work and applied work, discussing how our research can help solve problems for clinicians or organizations. However, the burnout research in sports, especially in regard to coach burnout (my work included), has, with the exception of one study (Raedeke, 2004), exclusively included studies with a cross-sectional design. However, based on cross-sectional studies it is hard to draw conclusions that are helpful to professionals doing applied work. Cross-sectional studies are also problematic both from the methodological and from the clinical perspective, because cross-sectional data do not allow us to determine causality. Another problem with cross-sectional studies in psychology is that correlations between constructs may be due to common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). It is also likely that the relations in cross-sectional studies derive from how the questions are formulated semantically rather than from actual relations in behaviours or feelings (Arnulf, Larsen, Martinsen, & Bong, 2014).

Since burnout became a subject of research, studies in the area have relied heavily on self-report questionnaires. Questionnaires are very often used in the kind of psychological research that looks at burnout or other psychological health issues, although the problems associated with this approach have been raised. For example, Baumeister (et al., 2007) stresses that psychology should be the study of behaviour, and when we use only self-reports, the behaviour disappears, making it difficult to say what relevance self-report research has to actual human behaviours. In burnout research in general, it would be interesting to try to study behaviours as a complement to self-report measures. For example, there are now validated armbands that measure both sleep and physical activity (Reeve, Pumpa, & Bal, 2013). Because both sleep patterns and decline in physical activity are related to exhaustion and fatigue, these could be used as behavioural signs of exhaustion. Studying sleep patterns and physical activity during stressful times and over long periods could help us learn more about how a stressful environment affects sleep patterns over time. Combining sleep pattern data with heart rate and heart rate variability during matches and practice sessions could give us knowledge about how coaches’ engagement in matches and practice sessions affects their sleep patterns and recovery.

Studying the antecedents of exhaustion using more objective and behavioural measures is complicated and more expensive than using self-report questionnaires. However, using behavioural measures instead of self-report questionnaires could advance our knowledge about burnout. It could also be fruitful to explore new research designs other than those commonly employed in this area. For example, case study designs with well-considered measurement points distributed over a longer time span could provide interesting results. Because sports are divided into seasons, one way to start could be to follow one or a couple of coaches over an entire season, measuring sleep, physical activity, heart rate, and team performance before
and during the season to study change over time and to examine the implications perceived stress and team performance may have for sleep and behaviour. Testing different kinds of interventions during the same time period would also be interesting.

When it comes to the burnout concept, there is a need both in general and in the sport-related research to challenge the burnout dimensions proposed by Maslach and colleagues. One idea could be to longitudinally follow a sample using four or more measurement points over a longer period of time (e.g., one year) and study the relations between burnout dimensions, while controlling for potential covariates. By using several measurement points, the temporal order of the entire theoretical process of burnout could be examined. Using mixture modelling could also be interesting, as that kind of analysis looks at change within persons who form clusters of different profiles of change instead of focusing on variables. With mixture modelling, it would be possible to study whether there are different paths in the burnout process for different people; for some, exhaustion may be the key driver of the burnout process, while for others it may be personal accomplishment.

Conclusions

Although I have criticised the multidimensionality of burnout as defined by Maslach (et al., 1996) I do not want to argue against burnout as a multidimensional experience. However, the multidimensionality as defined in for example MBI or CBQ is problematic. One option is off course to use exhaustion-focused questionnaires like Shirom Melamed Burnout Measure or the Karolinska Exhaustion Disorder Survey that both have strong theoretical base. Although both needs to be further evaluated when it comes to relevance of multidimensionality. Another option, which is probably the easiest, is to lean on what have been found in clinical studies and only use the exhaustion scale from any burnout measure. Combined with clinically developed cut-off values such studies probably would give sound results that can be interpreted in proportion to the actual risk of getting stress-related problems both on group mean and individual levels.

Although I am critical of the most common conceptualization of burnout and how most of the coach burnout research has been conducted, I want to stress that burnout, exhaustion disorder, or whatever label one wishes to give it is an actual problem in contemporary society, for coaches and for people working in any occupation. Also, studying coaches is an important field owing to the interesting context in which they are active. I look forward to seeing what new research designs and new takes on measurements will be developed in the future.
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