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The process of burnout among high-performance sport coaches

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SUMMARY

Introduction: High-performance coaches have a highly demanding job and they work inconvenient work hours (e.g., Olusoga et al., 2009; Thelwell et al., 2008b). They are also described as highly motivated for their sport and job (McLean et al., 2012). This combination can put them at risk of experiencing burnout (Pines, 1993). Burnout is a work-related syndrome that develops over time and is characterized by exhaustion, cynicism, and a reduced personal accomplishment (Maslach & Schaufeli, 1993). As of today, longitudinal research conducted to better understand the burnout process within this population is scarce.

Aim: Examine (a) whether high-performance coaches experience an increase in burnout over a competitive season and explore associated symptoms, (b) whether the self-determination theory process model (Williams et al., 2004) could be a valuable framework to better understand the process of burnout, where both motivational and workload related variables serve as explanatory mechanisms.

Methods: (I) A retrospective qualitative design was used when interviewing four previous exhausted professional coaches to better understand their perception of the burnout process and its related symptoms, (II) A longitudinal variable centred approach using SEM-modelling on intraindividual change was used to test the SDT process model towards burnout among high-performance coaches ($N = 343$) over a competitive season, (III) A longitudinal personal centred approach was used to examine for different exhaustion trajectories over a season among high-performance coaches ($N = 299$), and, (IV) A longitudinal mixed method design was used to explore for differences among high-performance soccer coaches who were either high or low in burnout symptoms (quantitative data, $N = 92$; qualitative data, $n = 4$).

Results and discussion: The longitudinal designs and analysis used in the current thesis contributed to a better understanding of the process of burnout. Essentially, coaches increased in the burnout dimensions over the competitive season. A personal centred approach

gave a more nuanced picture of the development of exhaustion, where most coaches experienced low levels of exhaustion. Importantly, results revealed that there were subpopulations that either increased or stayed high in exhaustion throughout the season. At the end of the season, one out of four of the coaches was high in exhaustion, which is a considerable number. The magnitude and seriousness of the reported burnout symptoms were displayed both at the individual, intraindividual, and organizational level.

In conclusion, the expanded SDT process model served as a sound theoretical framework to better explain *why* a maladaptive work environment led to higher levels of burnout among high-performance coaches. Lower levels of need satisfaction, and needs thwarting, led to limited psychological resources that were of necessity when coaching in a demanding context. The strongest finding related to burnout and quality of motivation was the positive relationship with autonomous regulations (intrinsic and identified). Higher levels of autonomous regulations had a preventive effect on burnout, while lower levels had a detrimental effect on burnout. As coaches typically entered the profession with a high intrinsic motivation, finding it fun, interesting, and valuable, these are qualities that are of great importance to maintain in the job. Further, the findings regarding WHI and recovery as explanatory variables in the burnout process for coaches adds new knowledge to the coach burnout literature. Coaches who experienced larger interference between work and private life were at greater risk of experiencing higher levels of burnout. The ability to meet recovery demands is crucial in order to remain healthy and vital in the jobs as a coach, and both psychological detachment and relaxation need to be better implemented as skills among coaches to prevent burnout.

Keywords: high-performance coaches, burnout, longitudinal design, self-determination process model, work environments, quality of motivation, psychological need satisfaction, work-home-interference, recovery.

Sammendrag

Innledning: Høy-prestasjonstrenerne har en meget krevende jobb, og de jobber ubekvemme arbeidstider (Olusoga et al., 2009; Thelwell et al., 2008b). De er også beskrevet som meget motiverte for sin jobb som trenere (McLean et al., 2012). Denne kombinasjonen kan øke deres sannsynlighet for å oppleve utbrenthet (Pines, 1993). Utbrenthet er et arbeidsrelatert syndrom som utvikler seg over tid og er karakterisert av utmattelse, kynisme og reduserte personlige prestasjoner (Maslach & Schaufeli, 1993). Per i dag er det begrenset longitudinell forskning som har tatt sikte på og kunne forstå utbrenthetsprosessen hos denne populasjonen.

Mål for studien: Undersøke (a) om høy-prestasjonstrenerne øker i utbrenthet over en konkurransesesong og undersøke de relaterte symptomene, (b) om selv-bestemmelsesteoriens (Self-Determination Theory: SDT) prosessmodell (Williams et al., 2004) kan være et verdifullt teoretisk rammeverk for å bedre forstå utbrenthet som prosess, hvor både variabler relatert til motivasjon og arbeidsmengde kan bidra som forklarende mekanismer.

Metoder: (I) Et retrospektivt kvalitativt design ble brukt ved å intervju fire tidligere utmattede profesjonelle trenere for å bedre forstå deres opplevelse av utmattelsesprosessen og de relaterte symptomene, (II) En longitudinell variabel-sentrert tilnærming brukte strukturell modellering for å teste SDT prosessmodellen blant høy-prestasjonstrenerne ($N = 343$) over en konkurransesesong, (III) En longitudinell person-sentrert tilnærming ble brukt for å undersøke grupper av utmattelse som utviklet seg på ulikt vis over en konkurransesesong blant høy-prestasjonstrenerne ($N = 299$), og (IV) Et longitudinelt metodetriangleringsdesign ble brukt for å undersøke forskjeller mellom høy-prestasjons fotballtrenere som var enten høye eller lave i utbrenthet (kvantitative data, $N = 92$; kvalitative data, $n = 4$).

Resultat og diskusjon: De longitudinelle designene og analysene som ble brukt i denne avhandlingen bidro til en bedre forståelse av utbrenthetsprosessen. Funnene viste at

trenerne økte i utbrenthets dimensjonene i løpet av konkurransesesongen. En person-sentrert tilnærming ga et mer nyansert bilde av utviklingen i utmattelse, som viste at de fleste trenere opplever lav grad av utmattelse i løpet av sesongen. Resultatene viste imidlertid at det var subpopulasjoner som enten økte eller forble høye i utmattelse gjennom hele sesongen. Ved slutten av sesongen var en av fire trenere høy i utmattelse, noe som er et betydelig antall. Mengden og alvorlighetsgraden av de rapporterte utbrenthetssymptomene viste seg både på individ-, intra-individuelt- og organisasjonsnivå.

SDT prosessmodellen viste seg å være et godt teoretisk rammeverk for å kunne forklare hvorfor et maladaptivt arbeidsmiljø kan føre til høyere grad av utbrenthet blant høy-prestasjonstrenere. Lavere grad av behovstilfredstillelse og behovshindring førte til begrensede psykologiske ressurser som var nødvendig for trenerne i deres krevende arbeidskontekster. Det sterkeste funnet relatert til utbrenthet og kvalitet på motivasjon var det positive forholdet til autonome motivasjonelle reguleringer (indre og identifiserte). Høyere grad av autonome motivasjonelle reguleringer hadde en forebyggende effekt på utbrenthet, mens lavere grad fremmet utbrenthet. Etersom trenere som oftest starter i sitt yrke med høy indre motivasjon, fordi det er morsomt, interessant og verdifull, er dette kvaliteter som er av stor betydning å ivareta i jobben. Videre, resultatene som vedrører jobb-hjem-konflikt og restitusjon som forklarende variabler i utbrenthetsprosessen tilfører ny kunnskap til feltet om utbrenthet blant trenere. Trenere som opplevde større konflikter mellom jobb og privatliv hadde større risiko for å oppleve høyere grad av utbrenthet. Evnen til å restituere seg var avgjørende for å beholde en god helse i jobben, og implementering av kompetanse om psykologisk avkobling og avslapning er nødvendig for å forebygge utbrenthet blant trenere.

Stikkord: høy-prestasjonstrenere, utbrenthet, velvære, longitudinelt design, selvbestemmelsesteoriens prosessmodell, arbeidsmiljø, kvalitet på motivasjon, psykologisk behovstilfredstillelse, arbeid-hjem-konflikt, restitusjon.

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Oslo, June 2015

Marte Bentzen

LIST OF PAPERS

This thesis is based on the following papers, which are referred to in the text by their Roman numerals:

Paper I:

Bentzen, M., Lemyre, P. N., & Kenttä, G. (2015a). The process of burnout among professional sport coaches explored through the lens of Self-determination theory: A qualitative approach. *Sports Coaching Review*, 1-16.
doi:10.1080/21640629.2015.1035050

Paper II:

Bentzen, M., Lemyre, P. N., & Kenttä, G. (in press a). Changes in motivation and burnout indices in high-performance coaches over the course of a competitive season. *Journal of Applied Sport Psychology*. doi: 10.1080/10413200.2015.1053160.

Paper III:

Bentzen, M., Lemyre, P. N., & Kenttä, G. (in press b). Development of exhaustion for high performance coaches in association with workload and motivation: A person-centered approach. *Psychology of Sport and Exercise*. doi:10.1016/j.psychsport.2015.06.004

Paper IV:

Bentzen, M., Lemyre, P. N., & Kenttä, G. (2015b). Ability to meet recovery demands explain differences in burnout in high-performance coaches. In review.

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INTRODUCTION

Sport coaching is a professional occupation reported to be growing (Duffy et al., 2011). A sport coach aims to fulfill a leadership role in sport and work towards improvement of sport performance (Lyle, 2002). Sport coaching has been defined as “the guided improvement, led by a coach, of sport participants and teams in single sport and at identifiable stages of the athletes / sportspersons pathway” (European Coaching Council, 2007, p. 5). A useful distinction between different types of sport coaches is between the participation coach and the performance coach (Lyle, 2002, p. 40). Performance coaches can be differentiated based on the performance levels of their athletes. The International Sport Coaching Framework specifies that performance-oriented coaches both include coaches of children who are identified as talents (emerging athletes), for adolescents (performance athletes), and for adults (high-performance athletes) (International Sport Coaching Framework, 2013). Côte Young, North, and Duffy (2007) distinguished between performance coaches in relation to their work context, performance coaches for young adolescence (13–15 years), and performance coaches for late adolescents and adults (16 + years). Performance coaches work in a wide variety of sports organizations, have various resources to work with, and may be full time, part time, or work as volunteers (Duffy et al., 2011). Even coaches working with high-performance athletes may work part-time due to limited financial resources. Summarized, the coaching profession is a blended profession, based on variation in roles, status, and organizational resources (Duffy et al., 2011). Despite the relatively wide range of performance coaches, from high-performance club coaches working part time to Olympic coaches working full time, performance coaches as a group differ from participation coaches as of their roles in terms of foci and performance (Mallett & Cote, 2006). Further, they are characterized by higher levels of commitment, more stable coach-athlete relationships, a

greater focus on long term planning, monitoring, decision-making, and management skills to facilitate control of performance variables when comparing them to participation coaches (Lyle, 2002).

In the sport psychology literature, a fairly large number of researchers have turned their attention towards describing and defining qualities of excellent performance coaches (Côté et al., 2007; Gillham, Burton, & Gillham, 2013; Mallett & Cote, 2006). Gillham et al. (2013) for example describe how coaches can best provide positive developments of athletes' self-confidence physically and mentally, create an optimal sport environment for high levels of motivation and enjoyment and low levels of boredom and athletic burnout, which eventually will heighten the changes of good athletic performance. A list summarizing the demands attached to being an excellent performance coach is certainly long and consists of a wide range of responsibilities and work assignments.

A growing number of studies during the last decade have focused on the work situation of high-performance coaches and revealed that it is a highly demanding job (Fletcher & Scott, 2010; Fletcher & Wagstaff, 2009; Olusoga, Butt, Hays, & Maynard, 2009; Rhind, Scott, & Fletcher, 2013; Thelwell, Weston, Greenlees, & Hutchings, 2008b). For instance, 182 different stressors were found to be associated with high-performance coaches' perception of their work environment, and the two main themes were performance and organizational related stressors (Thelwell et al., 2008b). Performance related stressors concerned athletes' performance and their own performance as coaches (Thelwell et al., 2008b). Several other researchers have also highlighted the perceived demands of coaches' own performance, and argue that high-performance coaches are performers in their own right (Giges, Petitpas, & Vernacchia, 2004; Thelwell, Weston, Greenlees, & Hutchings, 2008a). Further, it is of interest to notice that a qualitative study of elite coaches found that approximately 50% of performance related stressors were related to their athletes, stressors

that in essence are largely uncontrollable from a coach perspective (Hanton, Fletcher, & Coughlan, 2005). Performance stressors may well be exacerbated by the fact that high-performance coaches are often held completely responsible for competition results—despite the presence of factors beyond their control (e.g., injuries, loss of players due to trade) that can impact the results of competition (Lyle, 2002). Studies have also indicated that coaches are at risk of getting fired if results are not as expected (Arnulf, Mathisen, & Haerem, 2012). Moreover, coaches have to deal with expectations and demands related to sources outside the immediate range of their job situation, such as mass media, sponsors, and fans, all of whom are interested in their teams' and athletes' performance (Fletcher & Scott, 2010; Olusoga, Maynard, Hays, & Butt, 2012; Rhind et al., 2013). Performance coaches also report a wide range of organizational stressors related to experienced leadership in the organization, the relation between their private life and work, and working with colleagues (Thelwell et al., 2008b). Some of these stressors are occupational-specific challenges related to working as a high-performance coach, such as inconvenient work hours (Lundkvist, Gustafsson, Hjälmsjö, & Hassmen, 2012), high travel demands related to training camps and competitions (Thelwell et al., 2008b), and job uncertainty (Altfeld & Kellmann, 2013). Summarized, working as a high performance coach is related to high level of expectations and a wide variety of work demands, which imply a risk of experiencing burnout (Lundkvist et al., 2012; Hjälmsjö, 2014).

Despite these two studies exploring the relationships between the highly demanding work situation of high-performance coaches and burnout, there is an important gap of knowledge in the sport psychology literature concerning the process leading to burnout among individuals working within this profession (Altfeld & Kellmann, 2013; Goodger, Gorely, Lavallee, & Harwood, 2007; Raedeke & Kenttä, 2013).

Burnout

Burnout is a problem reflecting fundamental challenges in the relationship between people and their work (Leiter, Bakker, & Maslach, 2014b; Leiter & Stright, 2009), a phenomenon that involves emotional exhaustion, cynicism, and reduced sense of personal accomplishment (Maslach, Jackson, & Leiter, 1996). The troubles and frustrations people experience at work can't simply be shrugged off—their reactions are reflected in these three dimensions and manifest as loss of energy, involvement, and efficacy (Leiter et al., 2014b). The core component of burnout is exhaustion, which is a person's feeling of being overextended and depleted of energy (Maslach, Schaufeli, & Leiter, 2001). Some researchers have primarily focused on the exhaustion dimension when defining burnout as “a state of physical, emotional and mental exhaustion caused by a long-term involvement in situations that are emotionally demanding” (Pines & Aronson, 1983, pp. 11-13), suggesting that emotional exhaustion is more than just being tired after a work-day or a work-week. However, the initial burnout research were a consequence of identifying other symptoms than those related to exhaustion among young and idealistic employees who had the role as providers of help towards recipients in human services (Freudenberger, 1975; Maslach, 1976). Maslach became interested in the negative process of employees becoming drained of energy due to emotional arousal at work, and how they use cognitive strategies to handle this as “dehumanization in self-defense” (Maslach, 1993, p. 22). This dehumanization strategy results in less involvement and dedication for the job, and was termed cynicism (Day & Leiter, 2014). The development of cynicism could be described as negative attitudes towards the job, dysfunctional disengagement, gradual loss of concern, and decreased perception of work as valuable and interesting (Xanthopoulou & Meier, 2014). When employees perceive themselves as no longer able to be involved in their work as they used to, this could be perceived as an additional demand to their situation, which is already experienced as

exhausting, as their own lack of compassion has a more devastating impact on their identity (Schaufeli, Leiter, & Maslach, 2009). When the feeling of emotional exhaustion and cynicism persist, the achievement of work goals might be hampered and a growing feeling of reduced accomplishment at work might occur (Leiter & Maslach, 1988). Reduced feeling of personal accomplishment is described as a tendency of evaluating one's own work negatively, feeling inadequate, and having poor professional self-esteem (Maslach, 2003a). The developmental theory of burnout suggests that exhaustion is the core component of burnout, although feelings of cynicism and reduced professional efficacy can evolve, which will result in a more progressive and severe level of burnout (Leiter & Maslach, 1988). Even though there is disagreement among researchers how the three dimensions influence one another over time (Taris, Le Blanc, Schaufeli, & Schreurs, 2005), researchers agree that they do not develop simultaneously (Maslach & Leiter, 2008). It is therefore recommended to study the three dimensions separately (Fernet, Guay, Senecal, & Austin, 2012; Maslach, 2003a). Further, there is agreement that burnout does not happen overnight (Leiter, 1991); rather, it develops gradually over time and could be considered as a process (Taris et al., 2005). The burnout literature does not specify any specific timeframe of this development, though states that burnout is a result of long-term involvement in demanding situations (Pines & Aronson, 1983). It is therefore of importance to examine this phenomena with longitudinal research designs (Ahola & Hakanen, 2014; Fernet et al., 2012).

The negative consequences of burnout become evident when looking into the symptoms (Schaufeli & Enzmann, 1998). First and foremost, burnout causes harm for the individual, with symptoms that are affective (e.g., depressed mood, emotional exhaustion), cognitive (e.g., poor self-esteem, forgetfulness), physical (e.g., muscle pain, sleep disturbance), behavioral (e.g., abandonment of recreational activities, alcohol), and motivational (e.g., loss of idealism, resignation) (Schaufeli & Enzmann, 1998, pp. 21–22).

Further, recent prospective studies have concluded that burnout is connected to heart disease, diabetes, common infections, and musculoskeletal pain after adjusting for other risk factors known for these health problems (Ahola & Hakanen, 2014, p. 15). Burnout has shown to have negative consequences on the intraindividual level: affective (e.g., irritability, increased anger), cognitive (e.g., dehumanizing perception of recipients, hostility), behavioral (e.g., aggressiveness towards recipients, interpersonal conflicts), and motivational (e.g., loss of interest, indifference with regard to recipients) (Schaufeli & Enzmann, 1998, p. 23). Finally, negative consequences are also reported for the organization the employer works for, and described in four different categories of symptoms: affective (e.g., job dissatisfaction), cognitive (e.g., feeling of not being appreciated, distrust in management, peers, and supervisors), behavioral (e.g., turnover, increased sick-leave), and motivational (e.g., loss of work motivation, resistance to go to work) (Ahola & Hakanen, 2014; Schaufeli & Enzmann, 1998, p. 24).

Despite the wide range and severity of symptoms related to burnout, it is not characterized as a medical or mental diagnosis internationally (DSM-V: American Psychiatric Association, 2013; ICD-10: World Health Organization, 2003). Research has shown that the symptoms related to burnout are similar to symptoms of phenomena such as depression and fatigue. For instance, fatigue, social withdrawal, and feelings of failure are characteristic of depression (Beck, 1970), but also symptoms related to burnout (Leiter & Durup, 1994). Even though an important amount numbers of symptoms related to burnout are both intra-individual and towards the organization, research has indicated that the most pronounced difference between burnout and depression is that burnout is considered problematic specific towards work, while depression is stronger related to one's life in general and more context-independent (Maslach et al., 2001; Schaufeli & Enzmann, 1998). Further, depression and especially emotional exhaustion are found to be related and share some of the same variance,

but a review has concluded that they are not redundant concepts (Glass & McKnight, 1996). Longitudinal studies have found support for burnout to be a predictor of depressive symptoms, but depressive symptoms were not a predictor of burnout (Hakanen, Schaufeli, & Ahola, 2008; Hakanen & Schaufeli, 2012). Another concept related to burnout is fatigue, which is the individual's experience of an overwhelming feeling of tiredness, lack of energy, and total exhaustion (Herlofson & Larsen, 2002). These symptoms are the same as for exhaustion, but burnout is more strongly related to psychological causes, while fatigue is explained to be the outcome of high physical demands (Leone, Wessely, Huibers, Knottnerus, & Kant, 2011).

These diagnostic challenges of burnout are central due to the lack of knowledge on prevalence of burnout (Korczak, Huber, & Kister, 2010). By far, most of the burnout research conducted thus far (approximately 84%; Korczak et al., 2010) has used the measure Maslach Burnout Inventory (MBI). The MBI is the original scale, though several adapted versions have been conducted with the aim to adapt to different working context (e.g., MBI-educational scale (MBI-ES), MBI-Human Service Survey (MBI-HSS) (Maslach et al., 1996)). The only version of the MBI that has been clinically validated to estimate clinical burnout is the Dutch version, which estimated that 4% of the Dutch working population suffered from clinical burnout (Schaufeli, Bakker, Hoogduin, Schaap, & Kladler, 2001). The other versions of the MBI used in research are not clinical diagnostic tools that can establish prevalence or cost-relevance indicators of burnout. What MBI scales offer are cut-off levels of low, moderate, and high levels of burnout, based on numerical cut-off points arbitrated on statistical norms (Maslach et al., 1996). These cut of values are frequently used in research to establish an understanding of how the population distributes for the subscales exhaustion, cynicism and reduced personal accomplishment respectively (e.g., Lindblom, Linton, Fedeli, & Bryngelsson, 2006). It should be noted that even though the three factor structure of the

MBI seems to be invariant across different nations, average in burnout levels seems to be of difference across nations (Ahola & Hakonen, 2014; Maslach et al., 2001). However, findings have indicated that an occupation-specific pattern of burnout exist that is similar across countries (Schaufeli & Buunk, 2003). There is not yet any clear consensus on the prevalence of high levels of burnout in populations when using the cut-of values, but the overall findings indicate that it is a relatively small proportion. This has been called “the healthy-worker effect, ” as research most often draw their population out of a relatively healthy working force (Schaufeli & Enzmann, 1998), indicating that those individuals experiencing higher levels of burnout may already have left the occupation or are on sick leave. Consequently, it could be difficult to target those higher in burnout using this sampling method. Most research is therefore conducted to study differentiated levels of experienced emotional exhaustion, cynicism, and reduced personal accomplishment within the working force. If the goal is to target those employees who are currently experiencing higher levels of exhaustion, methodological designs need to be chosen carefully, with for instance qualitative studies targeting those high in burnout dimensions or quantitative studies using personal centered approaches (Lundkvist et al., 2012; Xanthopoulou & Meier, 2014).

A review of coach burnout—what has research taught us so far?

Prevalence and symptoms

The coach is the person who is closest to the athletes, and who provides them the necessary support and knowledge to enhance their performance (Lyle, 2002). Coaches have therefore been described as “prime-candidates for burnout,” as they are providers in the “provider-recipient” relationship that has been described as most prone to burnout (Dale &

Weinberg, 1990). Coaches have also been labeled ‘problem-solvers’ yet “problem solvers have problems too” (Frey, 2007). This due to the wide range of performance and organizational demands they are under (e.g., Thelwell et al., 2008b; Olusoga et al., 2009), and profession specific challenges such as inconvenient work hours, high travel demand, short contracts, and being at risk for getting fired if coaches’ athletes do not live up to the expectations (Altfeld & Kellmann, 2013; Arnulf et al., 2012; Lundkvist et al., 2012). All together, these demands have shown to elevate the risk of ill-being and turn-over in work life among employees (Leiter & Maslach, 2004; Maslach et al., 2001; Schaufeli & Buunk, 2003). Despite this, research so far has shown that coaches report low to moderate levels of burnout (Caccese & Mayerberg, 1984; Capel, Sisley, & Desertrain, 1987; Dale & Weinberg, 1989; Hunt, 1983; Hunt & Miller, 1994; Nikolaos, 2012; Pastore & Judd, 1992; Price & Weiss, 2000; Quigley, Slack, & Smith, 1987; Raedeke, 2004; Raedeke, Granzky, & Warren, 2000; Ryska, 2009; Tashman, Tenenbaum, & Eklund, 2010; Vealey, Udry, Zimmerman, & Soliday, 1992). These results are found when mean data scores in the studies are compared with established norm means (Maslach & Jackson, 1981; 1986), and they do not provide any information about the distribution of levels of burnout across samples. When Vealey et al. (1992) looked into the frequency data in a study among coaches in high-school and college they found that 43–63% were experiencing moderate and high levels of burnout across all burnout dimensions. Similar results were found among swim coaches, where 49% experienced moderate or high levels of exhaustion based on the established norms from Maslach & Leiter in 1986 (Raedeke, 2004). In a study of elite soccer coaches in Sweden, a great variation in frequency in moderate and high levels of emotional exhaustion were reported based on what league the coaches worked in (from 23% - 71%) (Hjälml, Kenttä, Hassmén, & Gustafsson, 2007). Moreover, other studies have reported that coaches’ experience moderate to high levels of burnout compared with other helping professions

(Kelley & Gill, 1993; Kelley, 1994), and two studies have shown similar levels of burnout for coaches and professionals of higher education (Kelley, Eklund, & Ritter-Taylor, 1999; Karabatos, Malousaris, & Apostolidis, 2006). In brief, findings suggest that coaches' experiences lower levels of burnout compared to other helping professions, yet, the findings still indicate that there is a considerable amount of coaches experiencing higher levels of burnout. However, there is a need to examine burnout levels for high-performance coaches, as only one of the studies referred to was conducted within this sample (Hjälml et al., 2007).

As known, only one study has elaborated on coaches experiences of symptoms related to burnout, and the findings indicated symptoms like bitterness, cynicism, anger, exhaustion, depression, change in mood, feeling guilty not being able to perform as expected, and tiredness (Lundkvist et al., 2012). Other studies have reported negative consequences of coach burnout on the intraindividual relationship towards their athletes by decreased ability to cope with his/her coaching responsibilities and pay attention to the athlete's needs (Vealey, Armstrong, & Comar, 1998). Furthermore, coaches reporting higher levels of burnout are coaching their athletes for fewer hours, provide fewer technical instructions, offer reduced structure and challenges at practice, all of which again have been associated with their athletes' reporting lower degrees of competence and joy, and higher degrees of anxiety and burnout (Price & Weiss, 2000). Finally, coaches experiencing ill-being (negative affect and exhaustion) in their coaching position are more critical, directive, and exhibit more punitive behaviors towards their athletes compared to coaches who experienced greater sense of well-being in their job (Stebbing, Taylor, Spray, & Ntoumanis, 2012). Negative intra-individual consequences towards the coaches' families have also been reported as the coaches had neither time nor energy for family matters (Lundkvist et al., 2012). Despite these results, there is still a gap in coach burnout literature to better understand what kinds of symptoms coaches experience as a result of being in a burnout process. Additionally, few previous studies have

examined the symptoms of burnout among high-performance coaches in relation to the consequences these might have for the organizations they work for.

Correlates and causes of coach burnout

The first studies on burnout in the sport context were conducted on coaches (Caccese, 1983; Caccese & Mayerberg, 1984). These studies, along with others that followed in the coming years, were primarily concerned with demographic and sport specific variables. The results related to gender differences in relation to burnout of coaches were quite clear. Female coaches reported higher levels of burnout than male coaches (Caccese & Mayerberg, 1984; Kelley & Gill, 1993; Kelley et al., 1999; Pastore & Judd, 1993; Vealey et al., 1992). Young inexperienced coaches were found to be more vulnerable to burnout than older and more experienced coaches (Caccese, 1983; Capel et al., 1987; Dale & Weinberg, 1990; Kelley & Gill, 1993). However, the relationship between years of experience and burnout may be more complex, as Vealey et al. (1992) found no relationship between experience and burnout. Research into potential variance in burnout levels in relation to coaches' status of family life has shown unambiguous results. Studies have reported that single coaches are higher in emotional exhaustion than married coaches (Quigley et al., 1987), and that married coaches are higher in personal accomplishment than single coaches (Dale & Weinberg, 1989). On the contrary, findings from a qualitative study revealed that a single coach did not experience the same stress in relation to combining work and family as the coach who was married (Drake & Hebert, 2002). It could be argued that only looking at the categorical definitions of marital status is a simplification of the relationship between family-life, work, and burnout. More complex associations are expected to be related in this process, such as quality of the relationships within the families, variability in work-home-interference, and coaches' possibilities to influence own work hours.

Research has also focused on sport specific variables in relation to coach burnout. There are conflicting findings on the relationships between competition levels, types of sports, and coach burnout. Several studies have indicated a non-existing relationship between competition levels and burnout (e.g., Kelley et al., 1999; Hunt & Miller, 1994; Vealey et al., 1992). However, other studies, such as one investigating elite soccer-coaches in Sweden, reported lower degrees of burnout in coaches from the highest men division when compared to soccer-coaches working at the men division below and coaches working at the highest women division (Hjälml et al., 2007). Differences in burnout levels were thought to be related to differences in resources associated with the levels of competition and gender differences related to the sport, influencing the coaches' work situation (e.g., full-time job versus part-time job, larger teams of coaching-colleagues). Further, research has not found a clear relationship between athletes and teams loss record and coach burnout. Positive associations (Wilson & Bird, 1988) and a lack of relationship (Quigley et al., 1987; Kelley & Gill, 1993) have been reported. There seems to be no reason to assume that degrees of burnout can be associated to types of sport (Caccese, 1983; Karabatos et al., 2006; Hunt & Miller, 1994; Vealey et al., 1992), as it seems that "behind the sport" variables, such as resources, how profiled and popular the sport is, and the length of the competitive season are important to assess to get a clearer picture of causes and consequences of burnout in coaches (Hjälml et al., 2007). Summarized, demographics and sport related variables can, to a small extent, contribute to explaining burnout. Therefore, researchers have increasingly become more interested in examining causes and mediators towards burnout with a more holistic approach using theoretical frameworks.

The first studies addressing coach burnout with a theoretical framework used Smith's (1986) cognitive affective model of sport burnout, which is a stress perspective (Kelley et al., 1999; Kelley, 1994; Vealey et al., 1992; Tashman, et al., 2010). This approach is based on the

assumption that burnout is a result of imbalance between personal / situational variables (e.g., social support, workload) and the individual's own resources, which create a stress appraisal that serves as a mediator within this relationship. The findings of the two studies of Kelley and colleagues supported this model, and the situational/personal variables that were found to be related to stress appraisal were: social support, years of experience, gender (1993), hardiness, and social support (1994). In the study of Vealey et al. (1992), trait anxiety was the strongest predictor of burnout, and the situational variables leading to less stress appraisal were greater rewards, more value in their role as coaches, positive excitement, meaning and control, less overload, and more support towards their coaching situation. Finally, the model also offers an explanation as to how maladaptive forms of perfectionism may be related to stress appraisal and burnout (Tashman et al., 2010). However, several researchers have argued that burnout may result from other processes than solely from stress.

An alternative perspective is necessary to develop a more complete understanding of the concept of burnout and its development (Coakley, 1992; Gould, 1996; Pines & Aronson, 1983; Schaufeli, Maslach, & Marek, 1993). Pines (1993) elaborated on the relationship between stress and burnout: "While everyone can experience stress, burnout can only be experienced by people who entered their careers with high expectations, goals, and motivation—people who expected to derive a sense of significance from their work" (Pines, 1993, p. 38). Interestingly, Maslach (1976) and Freudenberg (1975) also discussed the energizing force within individuals they observed and who worked so hard that they eventually became burned out. Freudenberg noticed and described the process of how young and idealistic workers lost their initial motivation and commitment towards their work along with a depletion of energy. Maslach (1976) particularly became interested in the negative implications on employees' work identity and behavior, when their internal

emotional arousal for their patients decreased. Later, Maslach and Leiter described the importance of the energy that individuals bring in and use in the process towards burnout:

People like to be involved in projects that go beyond themselves. They want to develop their effectiveness by taking on challenges that make demands on all of their abilities and require a full commitment of their physical, emotional, and creative energy. If these things were not important, we would not be discussing burnout in the first place. (Maslach & Leiter, 1997, p. 57)

In brief, motivation of individuals is indicated to play a significant role in the burnout process.

Motivation and burnout for sport coaches

One could argue that a motivational perspective is particularly suitable in relation to the profession of high-performance coaches. High-performance coaches were often athletes themselves, and sport has been a huge part of their lives since they were relatively young (Fleurance & Cotteau, 1999; Salmela 1995). When investing a lot of time and energy in an activity over time, the activity could be integrated within one's self and become an important part of one's identity (Vallerand & Houliort, 2003). Coaches are often highly motivated for their job in general (McLean & Mallett, 2012; McLean, Mallett, & Newcombe, 2012), which could be considered a precursor of entering a burnout process (Maslach & Leiter, 1997; Pines & Aronson, 1983).

In the last decades, several researchers have turned their attention towards different motivational perspectives when studying coach burnout. The first studies within this approach were conducted by Raedeke and his colleagues who used the concept of commitment (Raedeke et al., 2000; Raedeke, 2004). The commitment construct is used to explain why people maintain their involvement in a given course of action (Raedeke et al., 2000).

Individuals are involved because they want to be involved or because they feel they have to be involved (Johnson, 1982). It was expected that those coaches who felt they had to be involved would experience a feeling of entrapment in the coaching profession and be more likely to experience burnout compared to those coaches who were involved because they wanted to. Both a cross sectional and a longitudinal study provided support for these hypotheses (Raedeke et al., 2000; Raedeke, 2004). A different motivational approach has used the concept of passion for work when examining the relation to exhaustion (Donahue et al., 2012). Individuals who highly value and love their work and are willing to invest a lot of time and energy on it are said to be passionate for their work (Vallerand & Houlfort, 2003). However, research has shown that there are two qualitative different types of passion, depending on how the activity has been internalized into the person's identity (Vallerand, Paquet, Philippe, & Charest, 2010). Obsessive passion results from a controlled internalization, where individuals feel an urge to act due to either intra and/or inter-individual pressure, while harmonious passion is a result of an autonomous internalization of the activity into the person's identity (Vallerand & Houlfort, 2003). These qualitative different forms of passion have shown to have different outcomes, where harmonious passion is related to the feeling of fun, enjoyment, and positive emotions, while obsessive passion has been positively related to negative outcomes such as the feeling of guilt and negative emotions (Vallerand & Houlfort, 2003). In a study among professional coaches, obsessive passion was positively related to rumination about one's work, which again was positively related to emotional exhaustion (Donahue et al., 2012). The concepts of commitment and passion have in common that they describe how individuals are qualitatively different engaged within an activity. Further, these differences in qualities could be identified taking a closer look at the reasons *why* they engage in the activity. A theoretical motivational framework that thoroughly explains how individuals with qualitatively differences in their motivation will influence their

dissimilar pathways towards either well-being or ill-being is self-determination theory (SDT: Deci & Ryan, 2000; Ryan & Deci, 2002). This theory has in recent decades shown to be a suitable framework to study the process of burnout among athletes (Adie, Duda, & Ntoumanis, 2008; Amorose, Anderson-Butcher, & Cooper, 2009; Cresswell & Eklund, 2005; Hodge, Lonsdale, & Ng, 2008; Lemyre, Roberts, & Stray-Gundersen, 2007; Lonsdale, Hodge, & Rose, 2009; Perreault, Gaudreau, Lapointe, & Lacroix, 2007; Quested & Duda, 2011a; Quested & Duda, 2011b). So far, only two studies have been conducted using SDT to study burnout among sport coaches (McLean et al., 2012; Stebbings et al., 2012). However, as burnout among athletes has a more physiological component in comparison to coach burnout (Goodger et al., 2007), I will seek additional support from research findings within occupational psychology, such as studies investigating athletic directors (Sullivan, Lonsdale, & Taylor, 2014), teachers (Fernet, Gagné, & Austin, 2010; Fernet, Austin, Trepanier, & Dussault, 2013), and from a variety of other professions (Van den Broeck, Vansteenkiste, De Witte, & Lens, 2008).

The SDT process model and burnout

SDT is an empirical based theory of human motivation, development, and wellness (Ryan & Deci, 2002). It assumes that people are active organisms, with a tendency towards growth, seeking mastery, and integrating new experiences into a coherent sense of the self (Ryan & Deci, 2002). These natural developmental tendencies within the individual do not operate automatically, rather they need to be fueled and supported in a dialectic relationship with the social environment they operate in (Deci & Ryan, 2000). The process from the individuals' meeting with the environment to outcomes such as well-being or ill-being is described as the SDT process model. The process model captures and describes several steps that sequentially predict one another: Perceived environment → Psychological need

satisfaction → Quality of motivation → Outcomes (e.g., well-being or ill-being). The process model has been used in SDT research in several domains, especially in health (Halvari, Halvari, Bjornebekk, & Deci, 2013; Williams, McGregor, Zeldman, Freedman, & Deci, 2004), and physical activity (Fortier, Sweet, O'Sullivan, & Williams, 2007; Solberg, Halvari, & Ommundsen, 2013; Stenling, Lindwall, & Hassmén, 2014). The strength of this model is that it describes the process from the individual's meeting with the environment to the outcomes experienced. The explanatory mechanisms (mediators) within this model between the perceived environment and burnout are the basic psychological needs and quality of motivation (Williams et al., 2004). Recently, as the first within the work domain, a study on high-school athletic directors using the four step SDT process model towards burnout was conducted (Sullivan et al., 2014). Until then, relatively few studies have included environmental determinants, various motivational regulations and consequences in work related research (Gillet, Gagné, Sauvagère, & Fouquereau, 2013). This might be a result of the dominant research focusing on workload-related variables within work and organizational psychology as predictors of burnout (Leiter, Bakker, & Maslach, 2014a). However, this line of research has also focused strongly on the individuals' perception of the work environment and stated that burnout is not a result of personal failing, but is a response to the mismatch between the individual and the work environment (Leiter & Maslach, 2014). Within this line of research, important explanatory mechanisms within the burnout process between the individuals experience of the work environment and the outcome of burnout have been interference between the work and private life (Work-Home-Interference: WHI, Bakker, ten Brummelhuis, Prins, & van der Heijden, 2011; Demerouti, Bakker, & Bulters, 2004) and the ability to meet recovery demands (Demerouti, Bakker, & Sanz-Vergel, 2013; Geurts, Kompier, Roxburgh, & Houtman, 2003). In the following pages, an extended version of the SDT process model will be presented in relation to research findings within both the work and

sport domain, with a dual set of explanatory mechanisms between the perceived work environment and burnout: Perceived work environment → Explanatory mechanisms: Motivational variables (Psychological needs and motivational regulations) / Workload-related variables (WHI and Recovery) → Burnout.

Perceived work environment

Previous research has emphasized that it is the employees' *perception and evaluation* of the work environment that is of importance when examining the work environment's influence on levels of burnout (Halbesleben & Buckley, 2004; Maslach et al., 2001). SDT describes how a work environment can predict people's motivation, performance and psychological health to different degrees (Deci & Ryan, 2014). Overall, SDT describes two qualitatively different work environments that either is supportive or controlling of employees' autonomy and behavior (Deci & Ryan, 2014), and where leaders are thought to play an important role in defining the quality of the work environment (Gagné & Deci, 2005). Being an autonomy supportive leader implies taking the employee's perspective into account (Williams et al., 2004); supporting the employee's emotions, attitudes, promoting choice (Deci, Egharri, Patrick, & Leone, 1994), and minimizing external control such as reward and punishment (Williams, Gagné, Ryan, & Deci, 2002). Providing structure should be done in an autonomous supportive manner by giving meaningful rationale on why uninteresting activities are important (Koestner, Ryan, Bernieri, & Holt, 1984), providing optimal challenges and neutral information and positive feedback on process (Deci & Ryan, 1985; Reeve, 2002). Leaders should be able to be involved in their employees' overall well-being at work by emphasizing that everybody is unique, and convey that that the work environment cares about each person as an individual. Leaders can do this by acknowledgment of each person, by being caring, and by showing interest in the employee's experiences (Sheldon & Filak, 2008).

In contrast to autonomy supportive work environment is controlling work environments (Deci & Ryan, 2014). A controlling work environment is typically portrayed by leaders who lead employees by threat or punishment (Baard, 2002), but control can also be exerted in subtle ways, such as imposing directive goals on their subordinates, setting time restraints, and imposing contingent rewards or pressure on subordinates (Gagné & Deci, 2005). These two qualitatively different work environments predict very different outcomes. An autonomy supportive environment will typically foster a healthy psychological balance, while a controlling environment is more likely to thwart the psychological mechanisms that are necessary to achieve this balance (Deci & Ryan, 2000).

Workload is one of the most intuitive and frequently discussed work-environment variable within work and organizational research aiming to explore causes of burnout as a mismatch between the environment and the employee (Maslach & Leiter, 2008; Maslach et al., 2001). Perceived workload is the employees' personal assessment of whether he/she has the time available and sufficient resources to do the expected work, and if the expected workload is exceeding what is perceived as legitimate (Leiter & Stright, 2009). If there is a large discrepancy between the individual's resources and perceived workload, the employee's levels of burnout are expected to increase over time (Maslach et al., 2001; Schaufeli & Enzmann, 1998). A recent qualitative study among elite soccer coaches found that a high degree of perceived workload was one of the major contributors to the development of burnout (Lundkvist et al., 2012). Further, chronic and unresolved conflicts in the work environment were found to be destructive for employees' well-being at work and potential cause of burnout (Leiter & Maslach, 2004). These findings are supported by a qualitative study among elite coaches revealing that conflicts within the organization were a key theme when identifying environment work stressors (Olusoga et al., 2009). Employees' feelings of not being treated with respect or that decisions at work are not rightfully taken could

contribute to conflicts (Leiter & Maslach, 2004), while employees who perceived their supervisors as being both fair and supportive are less vulnerable to burnout (Leiter & Harvie, 1998). Leiter and Maslach (2004) proposed that the greater the mismatch between employees' resources and the demands of the perceived work environment, the greater likelihood of burnout.

Summing up, the findings from the SDT-literature and the research within organizational work settings suggest that a work environment can either be adaptive or maladaptive. However, the work environment will likely never be purely adaptive or maladaptive, yet are described as for the most part adaptive or maladaptive. An adaptive work environment provides autonomy support, structure, and involvement with employees (Deci & Ryan, 2014), offers a workload that is manageable, and relations with their leaders are respectful and free of conflicts (Leiter & Maslach, 2004). A maladaptive work environment on the contrary has leaders who control their employees, leaders who are absent and who do not support their employees, offers a workload that is too large, leaders are perceived as unfair and disrespectful, or there may be conflicts (Gagné & Deci, 2005).

Research findings within the SDT process model have shown that an adaptive work environment positively predicts satisfaction of the basic psychological needs for autonomy, competence, and relatedness for employees (Deci & Ryan, 2014; Stebbings et al., 2012; Sullivan et al., 2014; Van den Broeck et al., 2008), promotes autonomous motivation (Halvari et al., 2013), leads to lower levels of WHI levels (Bakker et al., 2011), and reduces the need for recovery (Sonnentag & Niessen, 2008). Whereas a maladaptive environment either predicts low satisfaction of the psychological needs or needs thwarting (Fernet et al., 2013; Stebbings et al., 2012; Sullivan et al., 2014; Van den Broeck et al., 2008), promotes a more controlled motivation (Fernet et al., 2012), increases levels of WHI (Geurts et al., 2003;

Geurts, Rutte, & Peeters, 1999), and enhances the need for recovery (Sonnentag, Kuttler, & Fritz, 2010).

Next, explanatory variables that are the next steps in the SDT process model will be discussed, first motivational variables, thereafter workload related variables

Motivational variables as explanatory mechanisms

Need satisfaction / Needs Thwarting

SDT postulates that humans have three innate basic psychological needs, which are the need for autonomy, competence, and relatedness. The basic psychological needs are seen as “those nutriments that must be produced by living entity to maintain growth, integrity, and health” (Deci & Ryan, 2000, p. 326). So, for humans to flourish, to actualize their potentials, and to protect themselves from illness, it is important that their needs are satisfied. The need for autonomy is defined as people’s desire to experience ownership of their own behavior and to act with a sense of violation (Deci & Ryan, 2000). Autonomous behavior is recognized by internal locus of control (deCharms, 1968). The need for autonomy should not be mistaken with independency (Van den Broeck et al., 2008; Deci & Ryan, 2012). A coach can be autonomously dependent on his leader when reflectively choosing to rely on his leader when given advice or direction, or when acting upon leaders’ requests which are in line with the employees own values and the assignment is given a meaningful rationale (Deci & Ryan, 2012; Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens, 2010). However, leaders can also push coaches into an ‘un-autonomous’ situation of independence by forcing them to make all decisions on their own and abandon their need for direction (Deci & Ryan, 2012). The need for competence explains how humans want to interact effectively with the environment (White, 1959). Coaches’ perceived competence is their feeling that they can

achieve a certain goal or behavior. Also, due to the need for competence it is possible for human beings to continue with an activity without external reinforcement since humans need to seek optimal challenges and to experience mastery. The need for relatedness is defined as humans striving for close and intimate relationships and the desire to achieve a sense of communion and belongingness (Baumeister & Leary, 1995). The degree of psychological need satisfaction has been suggested to be crucial in relation to studying burnout, as the three needs are the source of energy that gives direction and adherence to behaviors at work (Gagné & Deci, 2005). The degree of energy can either enhance or hamper well-being (Deci & Ryan, 2000). Research findings have clearly indicated that lower degrees of need satisfaction yield a positive relationship with burnout (Fernet et al., 2013; Van den Broeck et al., 2008), which indicates that a constant struggle to fulfill psychological needs will typically drain energy over time and increase the risk of burnout (Fernet et al., 2013). The composite measure of basic psychological needs is found to fully mediate the negative relationship between job resources and exhaustion (Van den Broeck et al., 2008). Though, when examining all three needs separately towards the three burnout dimensions, findings show a more nuanced picture. Autonomy need fulfillment was negatively related to exhaustion and cynicism, relatedness was negatively related to depersonalization and positively related to personal accomplishment, and competence was positively related to personal accomplishment (Fernet et al., 2013). In a different study, only the need for competence was associated with all three burnout dimensions, but then mediated through motivation (Sullivan et al., 2014). Altogether, these findings implicate that it is of importance to examine the three needs separately in relation to all three burnout dimensions as they might have differentiated consequences.

The intentional obstruction of the needs, termed needs thwarting (Bartholomew, Ntoumanis, Ryan, Bosch, & Thogersen-Ntoumani, 2011; Vansteenkiste & Ryan, 2013), is believed to have even more harmful effects than lower levels of need satisfaction. To my

knowledge, only one study has been published on a coach population examining the relationship between work environments, needs thwarting, and outcomes (Stebbing et al., 2012). Greater work-life conflict and fewer perceived opportunities for professional development were positively associated with psychological needs thwarting, which in turn was positively related to psychological ill-being measured by negative affect and exhaustion.

In sum, research findings show that working for a prolonged period of time in an environment where psychological needs satisfaction is limited or thwarted increases the risk of experiencing burnout. Yet, there is still a need explore these relationships within the population of high-performance coaches. Additionally, basic psychological needs fulfillment is an important antecedent for internalizations of the motivational regulations, which is the next step in the SDT process model (Halvari et al., 2013).

Quality of motivation

Not the amount of motivation people have for a certain behaviors or activities that is imperative, but the quality of the motivation predicts performance, relational, and well-being outcomes (Deci & Ryan, 2014). Coaches typically have many reasons as to why they are engaged at work. These reasons can be differentiated on a motivational continuum based on their relative autonomy, reflecting how self-determined the reasons for the behaviors are their (Ryan & Connell, 1989). Intrinsic motivation is purely self-determined and refers to initiating an activity for its own sake because it is interesting and satisfying in itself, as opposed to doing an activity for external reasons (Ryan, 1995). Even though intrinsic motivation has shown to be very important, it is not the only type of self-determined motivation (Deci & Ryan, 2000). Extrinsic types of motivation can vary greatly in its relative autonomy (Ryan & Connell, 1989), and can be seen as a continuum from more to less autonomous (Ryan & Deci, 2000). The most autonomous regulation of the extrinsic motivated behaviors is termed

integrated regulation. This regulation is strongly related to intrinsic motivation, as the regulation for the behavior is almost identical with own values, identity, and is totally autonomous, but is different from intrinsically motivation, because the activity is important, but not necessarily interesting (Ryan & Deci, 2000). Identified regulation is an autonomous regulation of motivation, where the behavior is done because the person values the activity. Introjected regulation is a less self-determined form of regulation, and refers to a person who has taking in a regulation but has not accepted it as its own (Ryan & Deci, 2002). The behavior is often regulated to avoid guilt and shame or to attain ego enhancements, such as pride (Deci & Ryan, 2000). External regulation is the least self-determined regulation characterized by behavior that is preformed to satisfy external demands or to reward contingency (Chemolli & Gagné, 2014). The different motivational regulations have often been collapsed in to two main categories: autonomous (intrinsic and identified) and controlled (introjected and external) (Deci & Ryan, 2008; Halvari, Vansteenkiste, Brorby, & Karlsen, 2013; Williams, Grow, Freedman, Ryan, & Deci, 1996; Williams et al., 2002). Autonomous motivation describes behaviors where the individuals feel a true sense of choice, and acts because the activity is perceived as personally important or interesting (Williams et al., 2002). In contrast, controlled regulation describes behavior that is controlled or done because the individual feel pressured to perform them, either by others or by an internal force (Ryan & Deci, 2000). A vast amount of research across domains has confirmed that these two qualitative different forms of motivation lead to very different outcomes (Deci & Ryan, 2008). Findings from the work domain have indicated that perceived organizational support positively predicted autonomous motivation, which in turn positively predicted work satisfaction (Gillet et al., 2013). Further, a longitudinal study conducted over a school year indicated that changes in teachers' perception of classroom overload and students' disruptive

behavior were negatively related to changes in autonomous motivation, which in turn negatively predicted changes in exhaustion (Fernet et al., 2012).

However, Chemolli and Gagné (2014) argued that the quality of motivation should be measured with separate regulation scores rather than a sum score of regulations, as each motivational regulation should be seen as a temperature scale on its own. Two studies have focused on the associations between four distinct motivational regulations and exhaustion among coaches (McLean et al., 2012) and doctors and nurses (van Beek, Hu, Schaufeli, Taris, & Schreurs, 2012). Both reported similar patterns of findings as previous research, however added important nuances. Intrinsic and identified regulations were negatively related to exhaustion, while introjected and external regulations were positively related with exhaustion as expected. Intrinsic motivation offered the strongest (negative) relationship to exhaustion, while relationships were incrementally weaker as motivational regulations represented less internalized forms of motivation. Moreover, using structural equation modeling, only intrinsic and identified regulations were found to have a negative predictive value of the distinct motivational regulations on the sum score of burnout across both nurses and doctors (Van Beek et al., 2012). These findings especially indicate that intrinsic and identified regulations are important protective correlates of exhaustion. Consequently, when coaches are engaging in activities for autonomous reasons, the activity is done with higher energy as it is an integrated part of them, and thereby also more likely lead to excitement, interest, better psychological health, higher levels of performance, and persistence (McLean et al., 2012). On the contrary, coaches who are driven by controlled regulations over time are more likely to experience drained energy and increased ill-being, as these activities are not integrated within the self of the individual and not done of free will (Ryan & Deci, 2002). However, these processes are not yet examined for the population of high-performance coaches and the findings of controlled motivational regulations are unambiguous.

Workload-related variables as explanatory mechanisms

Work-Home Interference

Research has found unambiguous results when examining the relationship between marital or family status and burnout among coaches (Dale & Weinberg, 1989; Drake & Hebert, 2002; Quigley et al., 1987). It might not be the family status that is related to burnout, rather how or if the demand of either job and/or private life collides. “Inter-role conflicts” occur when a person experiences pressures within one role that are incompatible with the pressure that arises within another role (Kopelman, Greenhaus, & Connolly, 1983, p. 201). Previous research pointed at challenges either with work-home conflicts (WHC: the demands at work are so high that they interfere with a person’s private life), or home-work conflicts (HWC: the demands at home creates difficulties performing at work) (Blom et al., 2014). Work interference with home is more frequently reported among employees than home-interference with work (Bakker et al., 2011). We know that the coaching job often implies heavy workloads, inconvenient work hours (afternoons, week-ends, and holidays), and a substantial amount of traveling (e.g., Lundkvist et al., 2012; Thelwell et al., 2008b). Thus it could be argued that high-performance coaches are prone to experience interference with private life due to high demands at work. Work-home interference (WHI) is likely to develop where attempts to balance work and other life activities and responsibilities fail. Convincingly, work overload is a clear marker of a maladaptive work environment (e.g., long work hours, working overtime, perceived work pressure) and it has been identified as an important antecedent of WHI both by employees in organization and coaches in sport (Bakker et al., 2011; Dixon & Bruening, 2007). On the other hand, employees who work in an adaptive work environment characterized by opportunities to participate in decision making, experiencing good relationships with their leaders, and with opportunities to learn and

develop have shown to attenuate the harmful effect of work overload on WHI (Bakker et al., 2011). Employees who experience WHI in addition to an already demanding work situation are therefore more prone to experience burnout (Blom et al., 2014; Geurts et al., 1999; Langballe, Innstrand, Aasland, & Falkum, 2011). Further, WHI mediates the relationship between work demands and burnout (Blom et al., 2014; Geurts et al., 1999; Peeters, Montgomery, Bakker, & Schaufeli, 2005). A few studies among coaches have reported that WHI is considered problematic and that it could lead to burnout (Bruening & Dixon, 2007; Lundkvist et al., 2012; McChesney & Peterson, 2005). However, no quantitative studies on the topic have yet been conducted to my knowledge. More research on this topic is needed, as WHI clearly could be a challenge for high-performance coaches (Lundkvist et al., 2012). However, dealing with a high degree of demands over time is not necessarily unhealthy, as long as the employee is able to recover sufficiently during non-working hours (Geurts et al., 1999).

Recovery

Employees who are able to successfully meet high demands in an organization and at the same time stay healthy are most likely experiencing optimal levels of physical and mental states consisting of high levels of energy and focus (Sonnentag & Fritz, 2014). To be able to balance the demands of a maladaptive environment and WHI, functional recovery skills, and behaviors have been identified as key factors predicting individuals' health, well-being, and work performance (Siltaloppi, Kinnunen, & Feldt, 2009; Sonnentag & Fritz, 2007). Particularly, it seems of great importance, for those coaches who experience high demands at work and at the same time are experiencing a large degree of WHI, to attend to this as it seems to be a challenge to recover sufficiently at home when experiencing a high degree of work-home interference (Peeters et al., 2005).

Two important aspects of recovery are psychological detachment and relaxation (Sonnentag & Fritz, 2007). Psychological detachment refers to the ability to refrain from work-related activities and thoughts outside work hours, which implies mentally disengaging from one's job whilst away from work (Sonnentag & Fritz, 2014). For high performance coaches, this means not answering job-related phone calls, responding to media, reading emails, planning the practice for the next day, and not thinking about job-related affairs, as this makes it impossible to make psychologically “switch-off” (Siltaloppi et al., 2009).

Relaxation is a process associated with leisure activities and down time characterized with low activation, where the individual deliberately chooses activities to reduce activation and increase positive affect (Sonnentag & Fritz, 2007). This could be laying on the couch, reading a book, going for a walk, going fishing, or listening to music (Siltaloppi et al., 2009).

Relaxation in the evening has been related to morning serenity (Sonnentag, Binnewies, & Mojza, 2008), and is positively associated with positive affective states at the beginning of the work week after a relaxing weekend (Fritz, Sonnentag, Spector, & McInroe, 2010). Both psychological detachment and relaxation have been negatively associated with burnout, health complaints, and sleep problems (Siltaloppi et al., 2009). Findings from a review showed that psychological detachment forms both a mediator and a moderator within the relationship between job demands and burnout (Sonnentag & Fritz, 2014). To my knowledge, there are no known studies that have focused on recovery for sport coaches with the aim of preventing burnout. This area of research has been covered in recent studies (Raedeke & Kenttä, 2013).

Prevention of burnout

Burnout is considered a relatively chronic condition that is both demanding and time-consuming to recover from (Shirom, 2005). Thus, developing strategies that prevent burnout

might be more effective than treating burnout (Raedeke, 2004). Maslach (2003b, p. 216) have stated that: “An ounce of prevention is worth a pound of cure.” According to WHO (1986), there are three levels of prevention: primary preventive measures (avoidance/removal of factors that make the patient ill), secondary measures (early recognition—intervention of manifest disease), and tertiary measures (coping with the consequences of disease—rehabilitation and relapse prophylaxis). This definition of prevention is rooted in a traditional medical paradigm, where the aim is to remove factors that make someone ill, implying removing or decreasing the correlates and causes of burnout. Lately, this view of prevention has been argued to be too narrow and an additional view of prevention has emerged in light of positive psychology: “treatment is not just fixing what is broken; it is nurturing what is best” (Seligman & Csikszentmihalyi, 2000, p. 7). By aiming to understand and explore factors that allow human potential to flourish, instead of focusing on repairing damage within a disease model of human functioning, prevention could be seen as promotion of well-being (Seligman & Csikszentmihalyi, 2000).

Work engagement has been introduced as the antipode of burnout and described as a positive, fulfilling affective-motivational state of work-related well-being (Bakker, Schaufeli, Leiter, & Taris, 2008), consisting of the three dimensions of vigor, dedication, and absorption (Schaufeli, Salanova, Gonzalez-Romá, & Bakker, 2002). Engaged employees have higher levels of energy, are enthusiastic about their work, and are often fully emerged in their jobs (Bakker et al., 2008). Several studies among athletes in sport (e.g., Hodge, Lonsdale, & Jackson, 2009) and work (e.g., Van den Broeck et al., 2008) have successfully embraced the concept of engagement, and found it useful when studying prevention of burnout within the SDT-framework. However, these studies have only used the basic psychological needs as mediators between the perceived environment and the outcomes burnout and engagement, and not quality of motivation. Different levels and categories of engagement

(disengagement/contingent engagement/full engagement) are highly associated with the different qualities of motivation within SDT (Meyer, 2014). Consequently, it might not be reasonable to study engagement as an outcome within a SDT process model when motivational regulations serve as explanatory mechanisms. Therefore, other variables that reflect well-being as outcomes are required. Well-being is a complex construct, and several distinctions have been made. Ryan and Deci (2001) have organized the field of well-being into two broad traditions: hedonic well-being (happiness) and eudaimonic well-being (human potential). Satisfaction with life can be defined as “a global assessment of a person’s quality of life according to his chosen criteria” (Shin & Johnson, 1978, p. 478), and it is a highly used construct measured for hedonic well-being in research (Nave, Sherman, & Funder, 2008). Vitality is central indicator of eudemonic well-being, reflecting the energy available to the self of the individual (Ryan & Deci, 2001; Ryan & Frederick, 1997). Subjective vitality has been found to correlate negatively with physiological symptoms like decreased energy and aliveness (Ryan & Frederick, 1997). Methodological implications of studying prevention of burnout in the light of positive psychology suggest that both ‘ill-being’ and ‘well-being’ needs to be measured.

Purpose of the thesis

Burnout is a developmental process that happens over time and its processes of change are complex (Leiter & Maslach, 2014). This is causing methodologically challenges, as it is difficult to capture change. Furthermore, identifying causes and explanatory mechanisms within such a process of change is of importance. Accordingly, research on burnout should aim to target the most important environmental variables that start the process of burnout and the explanatory mechanisms that contribute to extend or reduce the processes towards burnout. As of today, the amount of research conducted on the burnout process within the coach population is scarce. Therefore, research findings from burnout in work settings (e.g., Fernet et al., 2010; Fernet et al., 2012; Hatinen et al., 2009; ten Brummelhuis, ter Hoeven, Bakker, & Peper, 2011) have been used to establish the research questions within this thesis.

High-performance coaches work navigate a wide range of demands (Olusoga et al., 2009; Rhind et al., 2013; Thelwell et al., 2008b) in combination with inconvenient work hours and job uncertainty (Altfeld & Kellmann, 2013; Raedeke & Kenttä, 2013). This makes them vulnerable to burnout (Lundkvist et al., 2012; Hjälm et al., 2007). Importantly, professional coaches have been characterized as having an extraordinary relationship to their work, as their sport has typically been an important part of their lives for many years (Salmela, 1994). They are highly motivated for their job in general (McLean & Mallett, 2012; Donahue et al., 2012).

In this thesis a motivational theoretical framework is used to study burnout to compliment the traditional framework of burnout as a result of high demands (Schaufeli et al., 2009). It will be explored whether the self-determination process model (Williams et al., 2004), could offer a sound theoretical framework to better understand the process of burnout among high-performance coaches, from the coaches' interaction with the environment to their experience of either burnout or well-being. Therefore, two sets of explanatory variables have

been chosen; basic psychological need satisfaction /thwarting and quality of motivation, and WHI and recovery. This extended SDT process model is illustrated in figure 1.

Different methodological designs are used, aiming to better understand the burnout process among high-performance coaches. There is a need to understand how coaches experience both the burnout process and the symptoms related (Lundkvist et al., 2012). Further, more longitudinal designs are of importance to better understand how changes in both the environment and explanatory mechanisms contribute to changes in both burnout and well-being (Goodger et al., 2007; Raedeke & Kenttä, 2013). Additionally, there is a gap in research among coaches using a longitudinal personal centered approach to target and explore characteristics of coaches who are experiencing higher levels of exhaustion (Lundkvist et al., 2012; Xanthopoulou & Meier, 2014). Finally, in light of positive psychology (Seligman & Csikszentmihalyi, 2000), there will be advantages in exploring what characterizes coaches who experience greater well-being in contrast to those experiencing burnout, and more exploratory designs in finding differences might contribute to get a greater understanding in how to prevent burnout for high-performance coaches.

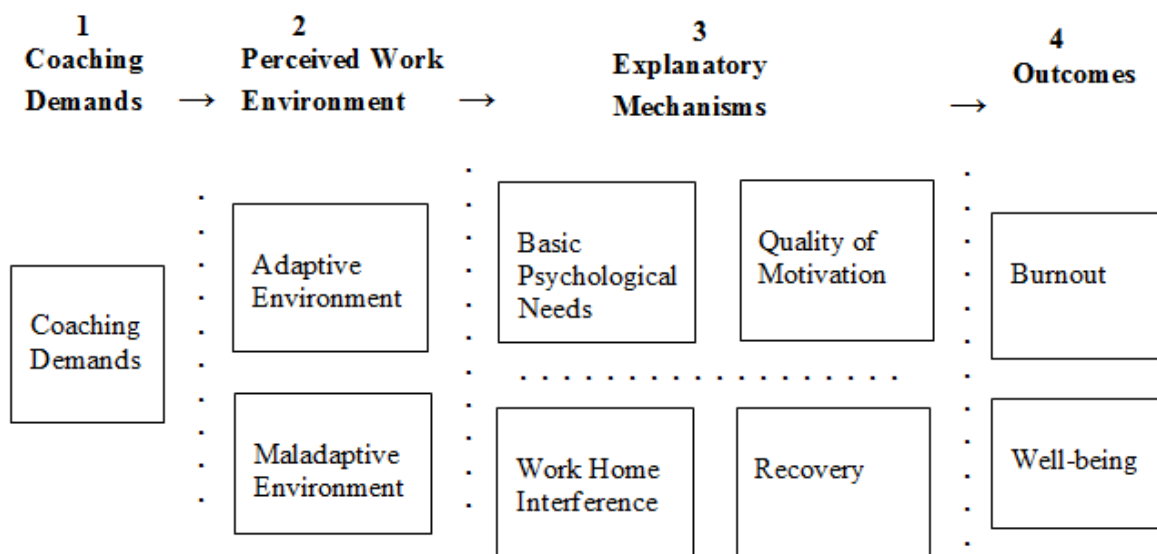


Figure 1. Proposed research model for the overall thesis

Research questions

The overall aim for this thesis is to better understand the process of burnout among high-performance coaches. More specifically, the research questions for the proposed model (fig.1) are:

1. Do high-performance coaches increase in burnout dimensions and decrease in well-being indices over a competitive season? (Paper II, III)
2. What burnout symptoms do high-performance coaches experience? (Paper I, IV)
3. How does variation in coaching demands, perceived leaders support and workload influence the burnout process? (Paper I–IV)
4. How does variation in basic psychological needs and quality of motivation contribute in the process towards burnout / well-being? (Paper I–IV)
5. How does variation in WHI and recovery contribute in the process towards burnout / well-being? (Paper III, IV)

These five research questions were put forward in this thesis related to Papers I–IV.

Specific research questions Paper I:

- a) How did previous highly exhausted professional coaches experience their process towards burnout?
- b) Could SDT serve as a valuable framework to better understand the coaches' experience of the process towards burnout?

Specific research question Paper II:

- a) Are there increases in the burnout dimensions and a decrease in well-being indices over the competitive season?
- b) Could the SDT process model of change predict the development towards burnout and well-being: Change in perceived work-environment (workload and autonomy support) → change in the psychological needs for autonomy, competence and relatedness → change in quality of motivation → change in burnout and well-being?

Specific research question Paper III:

- a) Are there different subpopulations (trajectories) of exhaustion over a competitive season for high-performance coaches?
- b) If there are, could quality of motivation and workload-related variables be associated with class membership at the start and end of the competitive season?

Specific research question Paper IV:

- a) What are the main differences between high-performance soccer coaches who are either high or low in burnout in relation to performance, budget of club, quality of motivation, perceived workload, WHI, and recovery?

METHOD

Overall research design of thesis

Different methodological designs were chosen to target important variables and mechanisms within the burnout process. It was also of importance that these different designs were stepwise built on one another, so the first paper was a foundation for the next paper, and the next paper added to the knowledge found in the previous paper. The line of research-designs and overall content of the studies are described and illustrated in figure 2.

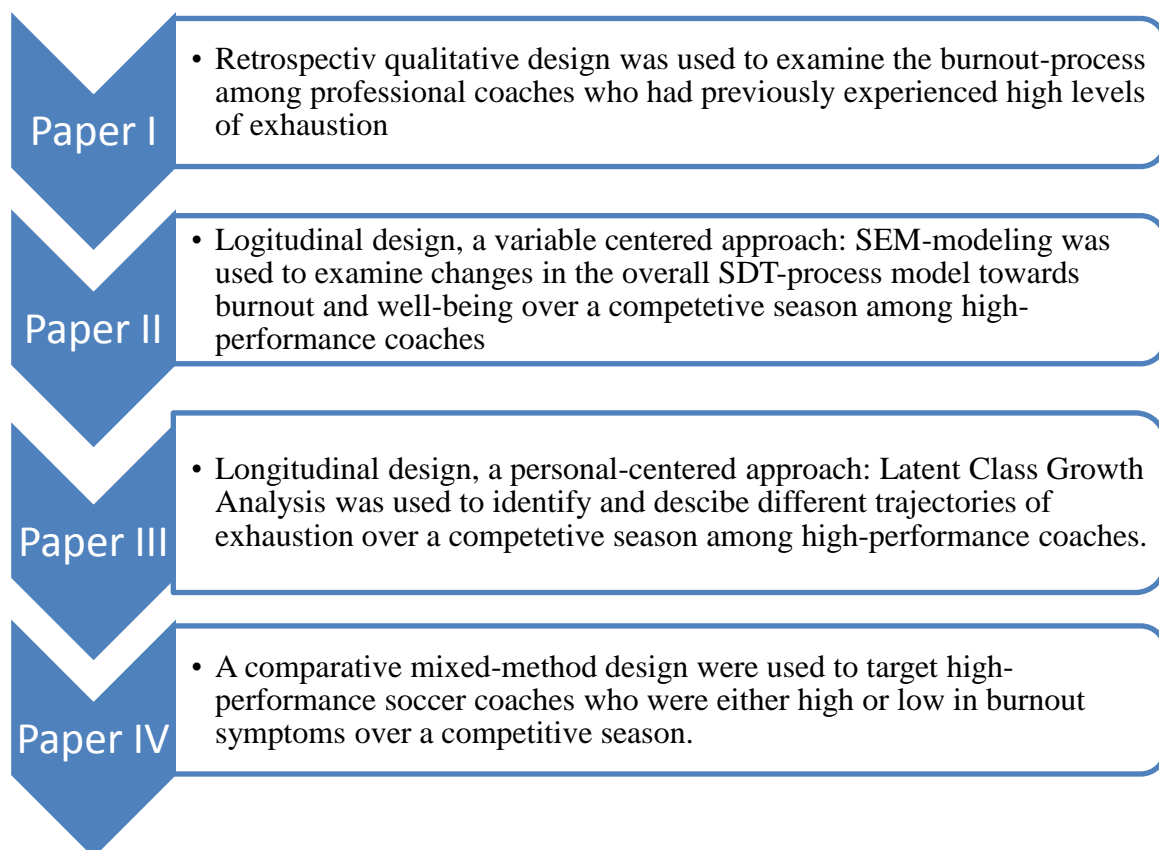


Figure 2. Overall research designs for papers within the current thesis.

Coaches

Paper I focused on professional coaches who were working full time as coaches, either in high-performance clubs or with national teams. The coaches included in Papers II–IV were selected based on their athletes' performance level, and the targeted coaching population was included based on the following criterion: coaches coaching athletes competing at the highest national level in their sport within their nation. For team sport coaches this implied coaches from the teams at the highest domestic league for male and female (and additionally the second highest level in men's soccer included based on size and professionalism of sport). Targeting the coaches from the individual sports was complex due to differences in sports (e.g., size, professionalism). Therefore, a meeting with all included sports federations was conducted, and in cooperation with the federation coaches were included if their athletes were competing at the highest levels at their national championships within their sports. Even though all coaches within this definition were working with high-performance athletes, they were not necessarily full-time employees depending on the financial situation of the sports organization. The coaches included in this study do therefore range from being partly paid to full-time employees. In addition, some of the coaches within all papers could also be defined as elite coaches as their athletes were competing at an international level. Despite this, it was chosen to classify the overall population for the current thesis as high-performance coaches (Lyle, 2002), since this was the best term for the majority of the coaches included.

Study design, participants and inclusion procedures

Paper I

The first study had a qualitative design, as the aim was to get an in-depth understanding of the burnout process experienced by previously highly exhausted coaches. Semi-structured interviews were conducted with a retrospective focus, as the coaches were asked to recall back to when the burnout process started and describe how they perceived the process towards burnout.

Recruitment of the participants was done by advertising through the web-page and email system of The Norwegian Olympic and Paralympic Committee, The Norwegian Confederation of Sports, and on the web-page of the Norwegian School of Sports Sciences (Appendix, I). Inclusion criteria for the study were: (a) working full time as a coach, (b) having experienced high levels of exhaustion, defined by “a feeling of being overextended and depleted of one’s emotional and physical resources” (Maslach et al., 2001, p. 399). Additionally, the severity of symptoms of the coaches was evaluated to ensure that the coaches participating in the study had experienced something more than ordinary fatigue after a work-day or work-week. This evaluation was guided by the description and categorization of symptoms made by Schaufeli and Enzmann (1998): affective, cognitive, physical, behavioral, and motivational. For ethical reasons, the coaches had to be recovered from high levels of exhaustion before participating in the study.

Four professional male coaches were found eligible to participate in the study—three of these coaches coached individual sports and one was coach for a team sport. Two coaches worked at a national team, while the two other coaches worked at the elite-club level. Their age ranged from 24 to 35 years ($M = 31.25$, $SD = 4.99$), and their total years of experience as a professional coach ranged from 2 to 14 years ($M = 8$, $SD = 5.16$).

Paper II, III, and IV

For Paper II, III, and IV, longitudinal designs were chosen to study respectively change in burnout dimensions, the process of burning out, and the development of burnout. Data was collected with an online questionnaire at three time points during a competitive season: three weeks before competitive season started, mid-season, and three weeks before competitive season ended. High-performance coaches of 15 sports in Norway and nine sports in Sweden were included (Table 1). As the different sports started and ended their seasons at different time points of the year, the data collection was carried out during a time span of approximately one and a half year. The inclusion procedures and data collection were done in several steps. First, contact with all the included sports federations were made where they were given written information about the study. All sports federations were positive to the research project, and wrote recommendation letters to the coaches of the respective sport and encouraged all the invited coaches to participate in the study (see examples in Appendix, II). Also the Norwegian Olympic Centre wrote a recommendation letter to show their support and underline the importance of the study. Email addresses to all coaches who were invited to partake in the study were collected with the help of the respective sports federations or by contacting the sports clubs the coaches were working for directly. Then, three weeks before the competitive season started, an email including information about the study (Appendix, III), the recommendation letters and a consent form from the ethical committee for the respective country were sent to all coaches (Appendix, III). The day after, a new email with a link to the online questionnaire was sent. If the coaches did not participate by answering the questionnaire within one or two weeks respectively, an email with a reminder was sent automatically. This was also standard procedure for the questionnaire sent at mid-season and at the end of the season. All information about the study, emails, and the questionnaire itself were available in Norwegian, Swedish, and English.

In total, 853 coaches were invited to participate in the study, and 467 coaches responded at T1, 338 responded at T2, and 338 responded at T3. Different sub-populations were used in Papers II, III, and IV. Table 1 offers an overview of the overall response rate for Papers II and III, including information about number of participation coaches from the different sports and the length of the competitive season for the different sports. The number of invited coaches offers insight into the number of high-performance coaches in Norway and Sweden combined based on the definition of this population used in the current thesis.

Table 1.

Overall Response Rates for Paper II and III

Sport	Length Season (MO)	<i>n</i> Invited	<i>n</i> T1	<i>n</i> T2	<i>n</i> T3	<i>n</i> Paper II T1-T3	<i>n</i> Paper III T1-T2-T3
Soccer	7	294	135	79	91	91	68
Track and field	4	86	50	40	39	39	36
Handball	7	75	37	31	31	31	29
Swimming	10	61	43	34	32	32	30
Biathlon	5	54	45	38	37	37	35
Orienteering	5	51	27	17	16	16	15
Basketball	7	48	16	13	13	13	11
Ice-hockey	6	44	26	20	15	15	14
Cross country skiing (No)	5	42	28	24	25	25	23
Volleyball	6	33	16	11	14	14	11
Skating (No)	6	23	12	7	8	8	6
Alpine skiing (No)	5	16	12	8	8	8	7
Ski jump (No)	4	15	12	9	9	9	9
Nordic combined (No)	4	6	3	3	3	3	3
Telemark skiing(No)	4	5	5	4	2	2	2
<i>N</i>		853	467	338	343	343	299
Response rate %			54.7%	39.6%	40.2%	40.2%	35.1%

Note: Sports are listed according to size (*n*) of invited coaches for each sport. MO = Months; No = Data was only collected in Norway for these sports.

In Paper II, data from T1 and T3 were used to examine for intraindividual changes within the four step SDT process model involving these measurements: Changes in perceived

work environment (perceived workload and autonomy support) → changes in basic psychological needs for autonomy, competence and relatedness → changes in quality of motivation (autonomous motivation and controlled motivation) → changes in burnout and well-being. A total of 343 coaches responded at both T1 and T3 (40.2% response rate).

Demographics for the participants: Age, $M = 40.33$ years ($SD = 9.80$); Experience as a coach, $M = 13.11$ years ($SD = 9.66$); Gender, Female (8.7%) versus Male (91.3%); Nation worked in, Norway (57.1%) versus Sweden (47.8%); Coaching type of sport, Individual sport (52.2%) versus team sport (47.8%).

Paper III had a longitudinal design where data from all three time points were used. By using a variable centered approach, the study examined whether there were different developmental trajectories of exhaustion during the season and further examined if class membership could be associated with workload related variables (perceived workload, WHI, psychological detachment and relaxation) and motivational regulations (intrinsic, identified, introjected, external). The response rate was as followed: T1: $N = 467$ (54.7 %); T2: $n = 338$ (39.6 %); T3: $n = 342$ (40.2 %). Demographics: Age, $M = 41$ ($SD = 10$); Experience as a coach, $M = 15.5$ years ($SD = 10$); Gender, Female (8.4 %) and Male (91.6%); Nation worked in, Norway (56.5 %) versus Sweden (43.5 %); Coaching type of sport, Individual sport (55.5%) versus team sport (44.5 %) coaches for team sports.

In Paper IV, a mixed method design was used to investigate the hypotheses with a ‘quantitative-qualitative’ approach (Morse, 2003). Quantitative data from T1 and T3 was used to describe change of the burnout dimensions and associated variables (budget, performance, motivational regulations, workload, WHI, psychological recovery, relaxation) over the competitive season. Four coaches were strategically chosen to participate in qualitative in-depth interviews based on their levels of the burnout dimensions at both time points.

Respectively, the two coaches highest and the two coaches lowest in burnout dimensions were

interviewed. The interviews were conducted within six weeks after the competitive season ended. The study design was aimed to compare coaches who thrived throughout the season with coaches who seemed to struggle. The overall sample had the function of being the reference group compared to those either high or low in the burnout dimensions.

All coaches working within the coaching teams of the two highest levels of men's soccer and the highest level of female soccer in Norway were invited to participate in the study ($N = 169$). At T1 92 coaches participated (54.4%) and 61 participated at T2 (36.1%). Demographics for the overall population: Age, $M = 40.4$ ($SD = 7.3$); Experience as a coach, $M = 10.9$ years ($SD = 7.2$); Gender, Female (6.5%), Male (93.5%); Level of competition: Premier league men (43.5%), the second highest division men (33.7%), Premier league women (22.8%); Type of coaches: Head coaches (28.3%), Assistance coaches (23.9%), Expert development coaches (22.8 %), Goal keeper coaches (15.1%), Physical coaches (9.8%). It was decided to include only head coaches when conducting the interviews, to eliminate differences in work assignments as a major source of explaining factors contribution to differences in burnout.

Data collection

Paper I

Retrospective semi-structured interviews were conducted to collect data regarding the perceived exhaustion process of four professional coaches, using established ethical guidelines for this procedure (Patton, 2002). The interview-guide was based on previous research within the field, with an emphasis on perceived work environment and motivation to work as a coach. However, it was important that the coaches were able to tell their story, and it was aimed to maintain a natural flow of the conversation with the respondents by being

flexible in terms of changing the order of questions and probe areas. The average duration of the interviews was 93 minutes (see Appendix IV for the interview guide).

Paper II, III, and IV—part one

The data collection used online questionnaires three times during the competitive season (start / mid / end). The use of online questionnaire in the sport setting has shown to have several noticeable favors in relation to postal questionnaire, in terms of response rate, faster returned questionnaire and less missing data (Lonsdale, Hodge, & Rose, 2006). The questionnaires could be answered in Norwegian, Swedish, or English. The original English versions of the standardized questionnaires were used. If available, already validated and translated versions of the Norwegian and Swedish scales were used. If unavailable, translation-back-translation method was used (Duda & Hayashi, 1998). The questionnaires used in the study are attached (Appendix, V). Not all questions within these questionnaires are used in the current thesis, and only those used will be described in the methods section.

The demographic variables and those related to coaching demands were only measured at T1. The length of the competitive season was calculated on an average of the response dates from all respondents within each sport from the start of season to the end season for (Table 1). In Paper IV, budgets of all clubs were collected after seasons end for the clubs involved. Other variables were measured at all three time points.

Measures

Coaching demands

Demographics. Gender, age, years of experience as a coach.

Demands work. Work hours a week, travel days a year.

Performance was measured by two items each for Perceived Goal Attainment and Goal Probability, methodologically inspired by Sheldon and Houser-Marko (Sheldon & Houser-Marko, 2001). At T3, the coaches were asked to look back at the start of the season and write down what had been their two most important goals for that season. Based on each of these goals, they were asked to rate to what extent both goal attainment and goal probability were achieved on a 7-point Likert-scale ranging from 1 (*not at all*) to 7 (*to a large extent*). Goal attainment: “e.g., To what extent do you perceive that goal number 1 has been reached?” Goal probability: “e.g., “How likely is it that you will reach goal number 1 this season?” Each parameter was made by a sum score of the two answers of each goal.

Resources of club were objectively measured by the overall budget of the football clubs the coaches was working for. After obtaining written permission from all football clubs of participating coaches, the overall “accounting costs budget” for the actual season for each club were collected with the help of the Norwegian Football Association (Department of License). The amount of resources was collected in Norwegian kroner (NOK). When presenting the results of this variable, the mean value for the overall budget of the teams was reported, though, the *SD*, range and exact budget for each club have been made anonymous for confidentiality.

Perceived work environment

Perceived workload. The workload was assessed with the subscale Workload from The Areas of Work Life Scale with 6-items (AWLS: Leiter & Maslach, 2004). The AWLS was developed to measure a match or a mismatch between the work environment and the individual for the variables included. Example of items was: “I do not have time to do the work that must be done” (Paper II: $\alpha_{\text{time1}} = .75$; $\alpha_{\text{time3}} = .79$; Paper III: $\alpha_{\text{time1}} = .75$; $\alpha_{\text{time2}} = .79$; $\alpha_{\text{time3}} = .79$; Paper IV: $\alpha_{\text{time1}} = .74$; $\alpha_{\text{time3}} = .85$). The scale was reversed, so higher scores

indicated a higher perceived workload. The AWLS has previously been used in a sport setting showing acceptable internal validity of its different subscales including workload ($\alpha = .78-.90$; DeFreese & Smith, 2013). The questionnaire was answered on a 7-point Likert-scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Perceived autonomy support. Perceived autonomy support from the coaches' closest leader within their sports organization was measured using an adapted version of the Health Care Climate Questionnaire (HCCQ; Williams et al., 1996). An adapted 8-item version of the questionnaire previously used in Norway and demonstrating acceptable internal consistency was used (α : .90, .91; Solberg, Hopkins, Ommundsen, & Halvari, 2012). The term *my boss* was used instead of the term *the doctor*; for example, "I feel that my boss cares about me as a person" and "I feel a lot of trust in my boss" (Paper II: $\alpha_{\text{time1}} = .93$; $\alpha_{\text{time3}} = .95$). The questionnaire was answered on a 7-point Likert-scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Motivational variables as explanatory mechanisms

Psychological need satisfaction at work. Need satisfaction was measured by the 18-item Basic Needs Satisfaction at Work scale (BNSW; Van den Broeck et al., 2010). This scale has shown acceptable internal reliability for autonomy, competence, and relatedness respectively (α : .85, .86, and .86; Vander Elst, Van den Broeck, De Witte, & De Cuyper, 2012). The need for autonomy was measured by six items (e.g., "I feel free to do my job the way I think it could best be done") (Paper II: $\alpha_{\text{time1}} = .75$; $\alpha_{\text{time3}} = .77$). The need for competence was measured by four items (e.g., "I feel competent at my job") (Paper II: $\alpha_{\text{time1}} = .87$; $\alpha_{\text{time3}} = .90$). Finally, the need for relatedness was measured by 6 items (e.g., "At work, I can talk with people about things that really matter to me") (Paper II: $\alpha_{\text{time1}} = .80$; $\alpha_{\text{time3}} = .81$).

The questionnaire was answered on a 7-point Likert-scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Quality of motivation. The motivational regulations were measured by subscales of Self-Regulation Questionnaire at Work, which is validated in Norwegian (Gagné et al., 2014). As both sum scores of autonomy and controlled motivation, and the motivational regulations itself are used in this thesis, a description of the operationalization of both are described. The questionnaire was answered on a 7-point Likert-scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). First, when using the motivational regulations, four regulations were used: Intrinsic regulation measured by three items (e.g., “Because I have fun doing my job”) (Paper III: $\alpha_{\text{time1}} = .85$; $\alpha_{\text{time2}} = .90$; $\alpha_{\text{time3}} = .90$; Paper IV: $\alpha_{\text{time1}} = .90$; $\alpha_{\text{time3}} = .94$); Identified regulation measured by three items (e.g., “Because I personally consider it important to put efforts in this job”) (Paper III: $\alpha_{\text{time1}} = .69$; $\alpha_{\text{time2}} = .74$; $\alpha_{\text{time3}} = .78$; Paper IV: $\alpha_{\text{time1}} = .55$; $\alpha_{\text{time3}} = .80$); Introjected regulation measured by four items (e.g., “Because I have to prove to myself that I can”) (Paper III: $\alpha_{\text{time1}} = .67$; $\alpha_{\text{time2}} = .66$; $\alpha_{\text{time3}} = .68$; Paper IV: $\alpha_{\text{time1}} = .61$; $\alpha_{\text{time3}} = .56$); External social regulation measured by three items (e.g., “To get others’ approval”) (Paper III: $\alpha_{\text{time1}} = .81$; $\alpha_{\text{time2}} = .83$; $\alpha_{\text{time3}} = .84$; Paper IV: $\alpha_{\text{time1}} = .84$; $\alpha_{\text{time3}} = .90$). Several subscales showed relatively low internal consistency ($<.70$), but were kept in its original form for conceptual reasons and as lower internal consistency has been deemed acceptable in previous studies due to the combination of few items in the scales and a small population (Dekovic, Janssens, & Gerris, 1991; de Vaus, 2002; Holden, Fekken, & Cotton, 1991). The calculation of autonomous and controlled motivation was done following the recommendations of Gagné and colleagues (Gagné et al., 2010). Autonomous motivation was measured by a sum score of three intrinsic regulation items (e.g., “Because I have fun doing my job”), four integrated regulation items (e.g., “Because it has become a natural habit for me”), and three identified regulation items (e.g., “Because I personally consider it important

to put effort into this job”) (Paper II: $\alpha_{\text{time1}} = .80$; $\alpha_{\text{time3}} = .82$). Controlled motivation was measured by a sum score of four introjected regulation items (e.g., “Because I have to prove to myself that I can”), three external regulation materialistic items (e.g., “Because others will reward me financially only if I put enough effort in my job”), and three external regulation social items (e.g., “To get others’ approval”) (Paper II: $\alpha_{\text{time1}} = .80$; $\alpha_{\text{time3}} = .76$).

Workload related variables

Work Home Interference. WHI was measured by five items (Kopelman et al., 1983). “My family life” was reformulated to “my private life” (e.g., “My work schedule often conflicts with my private life”) (Paper III: $\alpha_{\text{time1}} = .76$; $\alpha_{\text{time2}} = .82$; $\alpha_{\text{time3}} = .84$; Paper IV: $\alpha_{\text{time1}} = .72$; $\alpha_{\text{time3}} = .80$). Each item was answered on a 4-point scale: 1 (*never*), 2 (*sometimes*), 3 (*often*), and 4 (*always*). The scale has previously demonstrated satisfactory internal consistency across three samples ($\alpha = .75-.81$; Geurts et al., 2003).

Recovery. Recovery was measured by two of the subscales in the Recovery Experience Questionnaire (Sonnentag & Fritz, 2007). Four items measured psychological detachment (e.g., “I forget about work”) (Paper III: $\alpha_{\text{time1}} = .80$; $\alpha_{\text{time2}} = .86$; $\alpha_{\text{time3}} = .86$; Paper IV: $\alpha_{\text{time1}} = .81$; $\alpha_{\text{time3}} = .87$), and four items measured relaxation (e.g., “I kick back and relax”) (Paper III: $\alpha_{\text{time1}} = .73$; $\alpha_{\text{time2}} = .83$; $\alpha_{\text{time3}} = .81$; Paper IV: $\alpha_{\text{time1}} = .75$; $\alpha_{\text{time3}} = .83$). The items were answered on a 7-point Likert-scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Both subscales have previously shown good internal consistency; psychological detachment ($\alpha = .90$); relaxation ($\alpha = .83$) (Sonnentag et al., 2008).

Outcomes

Burnout. Burnout indices were measured using the Maslach Burnout Inventory – General scale (MBI-GS; Schaufeli, Leiter, Maslach, & Jackson, 1996). The MBI-GS defines

burnout as “a crisis’s in ones relationships towards work, and not necessarily as a crisis towards ones relationship towards people at work” (Maslach et al., 1996, p. 20). The measure consists of three subscales: Exhaustion was measured with five items (e.g., “I feel emotionally drained from my work”) (Paper II: $\alpha_{\text{time1}} = .85$; $\alpha_{\text{time3}} = .88$; Paper III: $\alpha_{\text{time1}} = .84$; $\alpha_{\text{time2}} = .88$; $\alpha_{\text{time3}} = .89$; Paper IV: $\alpha_{\text{time1}} = .87$; $\alpha_{\text{time3}} = .92$); cynicism was measured with five items (e.g., “I have become less interested in my work since I started this job”) (Paper II: $\alpha_{\text{time1}} = .63$; $\alpha_{\text{time3}} = .75$; Paper IV: $\alpha_{\text{time1}} = .56$; $\alpha_{\text{time3}} = .76$); and personal accomplishment was measured using six items (e.g., “I can effectively solve the problems that arise in my work”) (Paper II: $\alpha_{\text{time1}} = .79$; $\alpha_{\text{time3}} = .83$; Paper IV: $\alpha_{\text{time1}} = .78$; $\alpha_{\text{time3}} = .90$). This latter subscale was reversed and labeled “Reduced Personal Accomplishment.” Cynicism showed relatively low internal consistency at T1 in Paper II and IV, but the scale was kept in its original form for conceptual reasons and as lower internal consistency has been deemed acceptable in previous studies due to the combination of few items in the scales and a small population (Dekovic, et al., 1991; de Vaus, 2002; Holden, et al., 1991). The Norwegian version of the MBI-GS has previously shown acceptable internal consistency across occupational groups and over time (Richardson & Martinussen, 2005). The participants responded on a 7-point scale with the following specifications: 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*), and 6 (*every day*).

Vitality. Vitality was measured with a six items version of the Subjective Vitality Scale (Ryan & Frederick, 1997; e.g., “I feel alive and vital”) (Paper II: $\alpha_{\text{time1}} = .91$; $\alpha_{\text{time3}} = .93$). The participants were asked to answer based on how they felt for the last four weeks, and the items were ranged on a 7-point Likert-scale from 1 (*strongly disagree*) to 7 (*strongly agree*). This scale has previously shown good internal consistency in a study in Norway ($\alpha = .91, .93$; Solberg et al., 2012).

Satisfaction with work. Satisfaction was measured with an adapted version of the 5-items Satisfaction with Life Scale (SWLS: Diener, Emmons, Larsen, & Griffin, 1985). “In most ways, my work-life is close to my ideal” was used rather than the original “In most ways my life is close to my ideal” (Paper II: $\alpha_{\text{time1}} = .80$; $\alpha_{\text{time3}} = .83$). Participants responded based on how they had felt in general over the previous four weeks, and rated their answers on a 7-point Likert-scale from 1 (*strongly disagree*) to 7 (*strongly agree*). This scale has previously shown acceptable internal consistency in a study in Norway ($\alpha = .82$; Solberg et al., 2013).

Paper IV – part two

The qualitative data of Paper IV was collected using retrospective semi-structured interviews of four strategically selected participants (Patton, 2002). The interview guide was based on the main topics of the questionnaires. It was aimed to maintain a natural flow and flexibility in the interviews to enable participants to tell their story of their last season. I conducted the interviews and the average length was 102 minutes (see Appendix IV for the interview guide).

Data analysis

Paper I

The qualitative data from the interviews was transcribed verbatim, resulting in 72 pages of single-space raw text. The qualitative analysis software MAXQDA was used when manually coding the data. The content analysis was conducted in three stages: 1) the data was deductively organized by the three higher order themes derived from the interview guide (‘Perception of work environment’, ‘Exhaustion processes, and ‘Burnout symptoms’), 2) the data within the higher order themes was then inductively coded into lower order themes, 3) all the lower order themes were grouped with those of similar meanings into higher order themes.

Consequently, the results from step one were nuanced and changed into the higher order themes presented in the results (Hsieh & Shannon, 2005). To counter possible biases in the process of qualitative analysis (Patton, 2002; Watt, 2007), several researchers contributed to the analysis to increase the trustworthiness and credibility of the findings (Thurmond, 2001).

Paper II

The data used in Paper II were collected at T1 and T3. At T1, 467 coaches responded (54.7% response rate) and 343 coaches responded at both T1 and T3 (40.2% response rate). The dropout from T1 to T3 was 27.0%. Little's MCAR test of missing data were conducted using SPSS 21, and indicated that the data were completely missing at random ($\chi^2 = 80.272$, $df = 96$, $p = 0.876$). The data used included the 343 coaches responding at both T1 and T3. Maximum data missing at each time point were 5.2%, and expectation maximum algorithm was performed to obtain a complete dataset. Paired sample t test with eta square for effect size was used to test for changes in study variables on the mean level over the competitive season. Further, residualized change scores were calculated by regression time 2 observed variable on time 1 observed variable, and saving the unstandardized residual values (Zumbo, 1999). Bivariate correlations were conducted with change scores of all variables in the study. Next, the residualized changes scores were transformed from SPSS to *MPlus* (*MPlus* 7.2; Muthén & Muthén, 2012) and used as observed variables in a structural model. To test for indirect effects in the model, the bootstrapping method for multiple mediations was conducted with 10000 bootstraps (Preacher & Hayes, 2008). A combination of fit indices were used to examine and evaluate the degree of model fit with specified criteria for an acceptable fit (Brown, 2006): Comparative Fit Index (CFI) ≥ 0.90 , Tucker–Lewis index (TLI) ≥ 0.90 , Standardized Root Mean Square residual (SRMR) ≤ 0.08 , and Root Mean Square Error of Approximation (RMSEA) ≤ 0.06 .

Paper III

The data used in Paper III was collected at T1, T2, and T3 and the response rate was as follows: T1: $N = 467$ (54.7%); T2: $n = 338$ (39.6%); T3: $n = 342$ (40.2%). Analyzing the pattern of dropout (missing data) indicated that the data was not completely missing at random (Little's MCAR test: $\chi^2 = 17552.63$ $df = 17190$, $p = .03$). Due to this finding, additional analysis on drop-out were conducted to test for differences between those participating at all three time points ($N = 299$) versus those only answering at T1 ($n = 86$), T1 and T2 ($n = 38$), and T1 and T3 ($n = 44$). A one way ANOVA between the four groups for all study variables at T1 indicated no significant difference between the groups. Hence, the assumption that the data were missing at random (MAR) was made (Enders, 2011). The analyses within this study were conducted on a dataset consisting of the 299 coaches (35.1%) who answered at all three time points. Of these, the maximum rate of missing data was 1.7%.

The statistical analyses for Paper III were done in two phases: First, Latent Class Growth Analysis (LCGA) is a statistical method suitable for analyzing longitudinal data to identify distinct trajectories (Jung & Wickrama, 2008). The analysis identifies distinct subgroups of individuals following a distinct pattern of change over time on a variable of interest (Andruff, Carraro, Thompson, Gaudreau, & Louvet, 2009, p. 11). LCGA was conducted to identify the number of trajectories for exhaustion in the current population over the competitive season (Jung & Wickrama, 2008) using *MPlus* (Muthén & Muthén, 2012). Second, after identifying distinct trajectories, multinomial logistic regression analysis was used to explore whether class membership could be associated to the covariates (workload, WHI, recovery, and motivational regulations) both at T1 and T3. These analyses were also implemented in *MPlus*.

Paper IV

The dropout rate from T1 to T3 of Paper IV was 33.7%. Isolated, a maximum of 2.2% of the data was missing at T1 and 40.2% was missing at T3. Little's MCAR test on missing data showed that the data was completely missing at random (Little's MCAR test: $\chi^2 = 403.13$, $df = 11834$, $p = 1.00$ (SPSS 21). Estimates of internal consistency were done by score reliability (Cronbach, 1951). Individual profiles for the coaches interviewed were made by reporting their scores for all study variables. The individual profiles were evaluated to be different from the overall population if their score were one standard deviation below or above the mean of the total sample.

The qualitative data was coded manually using the software MAXQDA. First, a deductive approach was used when organizing the data into meaningful patterns in line with the overall findings of the quantitative results (the higher order themes were 'burnout dimensions,' 'sport specific demands,' 'motivation,' 'workload,' 'WHI,' 'recovery' and 'performance') (Hsieh & Shannon, 2005). Next, an inductive analysis of the data within each higher order team was performed and lower order themes made, which consequently gave a more nuanced and depend insight of the findings in the higher order themes (Hsieh & Shannon, 2005; Patton, 2002). To avoid single researcher bias, all co-authors contributed in the process of qualitative data analyses to increase the trustworthiness of the findings (Patton, 2002; Watt, 2007).

Ethical considerations

Paper I

Paper I was approved by the Regional Committees for Medical and Health Research Ethics (REC) in Norway (see Appendix, VI). The participants signed a written consent prior to the interview (see Appendix, VI). Due to the stigma associated with having been exhausted,

the researchers were not allowed to use ‘snowballing’ as procedure to contact possible respondents through our network within the sports organizations by REC. Therefore, advertising was chosen as inclusion procedure. Further, as burnout is seen as a rather chronic syndrome (Shirom, 2005), it was important to ensure that the participants had recovered from higher levels of exhaustion at time of interview. Prior to the interview, possible participants were therefore evaluated in a telephone interview by the aforementioned criteria for exhaustion and symptoms (Maslach et al., 2001, p. 399; Schaufeli & Enzmann, 1998), and all participants were evaluated to be low in exhaustion.

The targeted population for this study was professional coaches in Norway. As this milieu is relatively small and transparent, it was of importance to ensure anonymity of the coaches participating in the study. Additionally, these coaches also included third parties in their stories during interviews, such as leaders, family and athletes, and ensuring their anonymity was also important. The coaches’ trust in the researcher was of great consequence for the richness and trustworthiness of the data. Full anonymity is crucial for respondents when they are going to share their own experiences of sensitive character (McNamee, Olivier & Wainwright, 2007). During the interviews, several sensitive topics were revealed, such as severe conflicts with third parties, and personal negative symptoms related to the experience burnout (Corbin & Morse, 2003). To ensure the anonymity of coaches, the specific sports within which the coaches’ work were not revealed, and the researchers chose quotes to illustrate the main findings that could not be identified back to the coaches.

Paper II, III, and IV

The studies presented in Paper II, III, and IV were approved by the Norwegian Social Science Data Services and The Regional Ethical Review Board in Sweden (Appendix, III). The quantitative part of this data collection was conducted online, the ethical procures related

to this data collection had to be performed accordingly. One day before the questionnaire was sent out via email, the coaches received an email including an information letter and the approval from the ethics committee from their respective country. Next day, the email with an electronic link to the online questionnaire was sent out. The first question in the online questionnaire was the consent to participate in the study. This question was mandatory to answer to be forwarded to rest of the questions in the study. On the online questionnaire, no questions were mandatory to answer, due to the importance of the coaches being able to only answer questions they were comfortable with. To ensure anonymity of the data, all participants were given a code number, and the code key was kept in accordance with the regulations of the ethical guidelines.

Dropout and thereby missing data in longitudinal studies is a well-known problem in behavioral science (Enders, 2011). As an attempt to increase the response rate of the study, two cinema tickets were given to those coaches who responded at all three time points. The size of this token was not considered to be too large that it would affect their perceptions of participating voluntarily (Council for International Organizations of Medical Sciences, 2002, pct. 7). Additionally, all coaches participating at all three time points were given the opportunity to get feedback on their profile throughout the season.

When presenting the data of the qualitative part of Paper IV, the same ethical considerations according to anonymity of the coaches described for Paper I were considered. This study involved only head coaches in Norwegian Elite Soccer, which is a particularly small and transparent population, and important steps to ensure anonymity were taken. Participants' specific age and budget for the clubs were not reported on, and some topics were problematic to find appropriate quotes that would cover the findings without jeopardize the coaches' identity. Also, some topics could not be discussed, for instance, what the coaches ended up doing after the season was over.

RESULTS

This chapter presents a summary of the main results in the four papers. For a more thorough description of all details, the readers are referred to the papers at the back of the thesis.

Paper I

Aim: Examining the experienced perception of the burnout process of four professional coaches who previously had experienced higher levels of exhaustion.

Results: The findings indicated that all coaches experienced working in a maladaptive work environment, exemplified by experiencing very heavy workloads, an absence of leadership, lack of leader support, work-related conflicts, and negative changes in the work environment as a consequence of both increasing and decreasing results of their athletes. These experiences had a detrimental effect on changes in the professional coaches' motivational indices. Their basic psychological needs for autonomy, competence, and relatedness were thwarted and a shift towards a more controlled form of motivation was observed. These changes in motivational indices contributed to explain *why* the coaches became increasingly at risk for burning out, a process that evolved over time. All four coaches experienced a wide range of burnout symptoms related to all three burnout dimensions. These symptoms had negative consequences for the coach himself (individual level), towards their athletes (inter-individual level), and for the organization they worked for (organizational level).

Paper II

Aim: Explore whether the SDT process model could provide a valuable framework to better understand the process of change towards either burnout or well-being among high-performance coaches over a competitive season.

Results: The preliminary analysis indicated weak correlations, with an effect size of ‘no to low’ ($r = .25$, Fraenkel & Wallen, 2000), between age, length of season and perceived goal attainment in relation to change in some of the burnout and well-being indicators.

Overall, a negative trend for high-performance coaches over a competitive season were found when examining change from start to end of the competitive season, as they significantly decreased in autonomy support (Cohen’s effect size, $\eta^2 = .06$), the need for autonomy ($\eta^2 = .10$), competence ($\eta^2 = .01$) and relatedness ($\eta^2 = .09$), vitality ($\eta^2 = .08$), and satisfaction with work ($\eta^2 = .04$), and significantly increased in controlled motivation ($\eta^2 = .05$), exhaustion ($\eta^2 = .05$), cynicism ($\eta^2 = .10$), and reduced personal accomplishment ($\eta^2 = .03$).

Finally, the SDT process model of intraindividual changes was tested using a structural equation modeling and it yielded a good fit to the data: $\chi^2(5) = 5.37$, $p = 0.37$, CFI = 1.00, TLI = 1.00, RMSEA = .02 (90% CI = .00–.08), SRMR = 0.01. The variance explained in the outcomes by the model were: 34% in change of exhaustion, 23% in change of cynicism, 25% in change in vitality, 39% in change in satisfaction of work, and 10% in reduced sense of accomplishment. The SDT process model of intraindividual change was to a large extent supported: change in the environment (i.e. workload and autonomy support) → change in psychological need satisfaction → change in autonomous motivation → change in burnout and well-being. Change in controlled motivation was not a significant contributor within the model. Further, change in the need for autonomy and change in autonomous motivation served as important explanatory variables in the SDT process model towards burnout and well-being.

Paper III

Aim: The aim of Paper III was twofold: First, explore whether there were different sub-populations of exhaustion among high-performance coaches over the course of a competitive season, and second, investigate whether the class membership could be associated with the covariates consisting of workload-related variables and motivational regulations.

Results: When evaluating whether the values of exhaustion were either high or low, the cut of criteria's of Maslach and colleagues (1996) were used. Four different trajectories of exhaustion among the high-performance coaches were identified: Trajectory 1 consisted of 29 participants (10%) and was labeled '*High*' as it stayed high in exhaustion throughout the whole season. Trajectory 2 consisted of 44 participants (15%) and was labeled '*Increase*,' as it was low in exhaustion at the beginning of the season and increased to high in exhaustion at the end of the season. Trajectory 3 consisted of 13 participants (4%) was labeled '*Decrease*' as it started out high in exhaustion at the beginning of the season and decrease to low in exhaustion at the end of the season. The final class consisted of the majority of the high-performance coaches, 213 participants (71%), and it was labeled '*Low*' as this class remained low in exhaustion throughout the competitive season.

Next, multinomial logistic regression tested whether the covariates in the study were associated to class membership. The results clearly indicated that coaches with higher levels of workload and WHI were associated with being in classes with higher levels of exhaustion. Further, coaches with higher levels of psychological detachment and relaxation were associated to being in classes with lower levels of exhaustion. Finally, coaches with higher levels of intrinsic and identified motivational regulations were associated to being in classes with lower levels of exhaustion.

Paper IV

Aim: The aim of Paper IV was to get a more nuanced understanding for the complexity of variables that might contribute to explain differences in experiencing either high or low degree of burnout symptoms (BS) among high-performance soccer coaches throughout a competitive season.

Results: Summarizing the findings from the quantitative and the qualitative data, the results did not yield clear relationships between coaches' lower or higher levels of BS and the financial situation for the club, performance, and demographics. All four coaches described their relationship towards their sport and job filled with love and great interest, clearly indicating having higher levels of self-determined motivation in their job as coaches. This kind of motivation contributes to explain why the coaches were highly involved and put a lot of effort in their job. However, the two coaches high in BS showed a more maladaptive motivational profile throughout the season, characterized by a less self-determined motivation and high in introjected regulation. Spending a lot of time in coaching when it was less enjoyable and done because they felt pressured to, drained energy, and was thereby a variable that contributed to some coaches being higher in BS than others.

All coaches experienced a high workload and this variable in itself did not explain the differences in BS. However, looking into the results on how the high workload contributed to differentiated levels in coaches WHI and ability to recover, gave a more nuanced understanding of the differences between coaches high and low in BS. The two coaches high in BS experienced higher levels of WHI compared to the two coaches lower in BS. The two coaches high in BS clearly found it difficult to meet their recovery demands, both in terms of psychological detachment and relaxation compared to those coaches low in BS.

DISCUSSION

The structure of the discussion is based on the five research question outlined for the overall thesis. In addition, demographics in relation to burnout, methodological limitations, and final reflections for futures studies will be discussed.

Change in burnout

Do high-performance coaches increase in burnout dimensions and decrease in well-being indices over a competitive season? (Paper II, III)

Burnout is a phenomenon that develops over time (Maslach et al., 2001) and that needs to be studied longitudinally to truly understand its progress. More explicitly, research that explores change in burnout in coaches over a season has been requested, as this timespan could reflect the cyclic nature of sport (Altfeld & Kellmann, 2013). As different methodological approaches were chosen in Paper II, III, and IV, results portrayed change in different ways. In Paper II, change was measured using the mean value of the total population, where findings indicated a clear trend of significant increase in all burnout dimensions. However, the effect sizes for change were all in the range of small to moderate (Cohen, 1988). This result could be explained by the concept of the ‘healthy worker effect’ (Schaufeli & Enzmann, 1998), where a low mean value in the burnout dimensions of the participants in a study could be explained as the population studied are often drawn from a sample which are still working and thereby expected to be relatively healthy. Consequently, those coaches experiencing higher levels of burnout could be argued to be disguised among the majority of coaches who are experience lower levels of burnout. Additionally, Enzmann and Buunk (1998) suggest that those prone to experience higher levels of burnout have

already left the profession either by quitting or being on sick leave. Consequently, it is of necessity to use other methodological approaches when aiming to target those experiencing higher levels in burnout dimensions.

Therefore, a different methodological approach was chosen in Paper III to examine for possible different trends of development in exhaustion for subpopulations over the course of the competitive season. Due to the volume of variables included in this study, the analysis was only conducted on the dimension of exhaustion, which is considered the core component of burnout (Maslach et al., 2001). Using Latent Class Growth Analysis to examine for different subgroups of development of exhaustion gave a more nuanced picture of how exhaustion developed among high-performance coaches over the competitive season. The majority of all coaches remained low in exhaustion over the season (71%), which supports the ‘the healthy worker effect’ (Schaufeli & Enzmann, 1998). As expected, based on the results of Paper II and Raedeke (2004), one trajectory increased in exhaustion from low to high (15%). More unexpectedly, two trajectories started out high in exhaustion at the start of the competitive season, where one class decreased from high to low (4%), and the other class remained high throughout the whole season (10%). This finding calls attention to the period of time that was chosen to explore change in burnout, namely over the competitive season and not for the whole season. Thereby, coaches’ levels of burnout dimensions from preseason were left out. These results could thereby be a consequence of coaches experiencing a demanding preseason, and/or insufficient length and/or quality of recovery at vacation between the seasons (McChesney & Peterson, 2005). Even though the population in the trajectory that decreased in exhaustion was small, the result is promising in regard to secondary prevention of exhaustion, as it seems possible to bounce back from higher levels of exhaustion to lower levels during a competitive season. The last trajectory remained high in exhaustion during the whole competitive season. These coaches could be characterized as highly at risk of

developing burnout, as higher levels of exhaustion over time are expected to increase the risk of developing also higher levels of cynicism and reduced personal accomplishment (Leiter & Maslach, 1988). An important finding of Paper III was that one out of four coaches (24.4%) could be characterized as high in exhaustion at the end of the competitive season. This is a considerably larger number than those reported as high in exhaustion in previous studies among participation coaches (Raedeke, 2004; Vealey et al., 1992). One could argue that higher levels of exhaustion could be explained by higher demands and pressure among high-performance coaches, however, this rationale is not in accordance with the findings of Hjälml et al. (2007). Their study examined high-performance coaches in soccer, where the coaches working in men's Premier leagues, which is claimed to be the coaching job highest in demands and pressure (Rhind et al., 2013), showed the lowest percentages of higher levels of exhaustion compared to coaches working in women's premier league and men's Second League. Thus, it is argued that coaches who have reached the highest performance level of coaching might be a skewed and self-selected group, where those coaches who are vulnerable to work within this highly demanding environment already have left the occupation (Hjälml et al., 2007). Further, it is assumed that working in the highest league also offers more resources, which could have a preventive effect on higher levels of exhaustion (Hjälml et al., 2007). Combined, the findings of frequency in exhaustion levels of coaches indicate that there are more complex relations involved in explaining variation in exhaustion than levels of performance levels of athletes and resources attached. However, findings do indicate that this occupational group is prone to higher levels of exhaustion and over time also higher levels of burnout.

Going back to the findings of the relatively high proportion of coaches high in exhaustion at the end of the season in Paper III, some of them might recover from the higher levels of exhaustion during their following holidays. However, a meta-analysis has found that

the beneficial effects of recovery after vacation on health and well-being fade out shortly after work resumption (de Bloom et al., 2009). Consequently, prevention of higher levels of exhaustion is most likely to be efficient when intervening in the work environment of high-performance coaches, rather than relying on long term effect from recovery between seasons. Interestingly, the results of Paper III concluded that it is difficult to predict whom of the coaches that are going to remain high or low, or increase or decrease in exhaustion based solely on their levels of exhaustion at the beginning of the season.

Rooted in positive psychology (Seligman & Csikszentmihalyi, 2000), Paper II also examined changes in well-being over the competitive season and found a decrease in vitality and satisfaction with work on the mean level, both with effect size in the range of low (Cohen, 1988). Thus, the direction of change was negative and combined with findings of change in the burnout dimensions the results supported the overall hypothesis that high-performance coaches have a demanding competitive season negatively affecting their overall well-being (e.g., Lundkvist et al., 2012; Thelwell et al., 2008b). Combined, these results including both measures of well-being indices and burnout dimensions in the same study strengthens the findings as mental health and mental illness are not opposite ends on a single measurement continuum (Keyes, 2002).

Symptoms of burnout

What burnout symptoms do high-performance coaches experience? (Paper I, IV)

The findings of Papers I and IV add to the limited knowledge in coach burnout literature on high-performance coaches own experiences of their burnout symptoms (Lundkvist et al., 2012). Especially Paper I shed light on the magnitude of individual burnout symptoms experienced by the population. Schaufeli and Enzmann (1998) have described five

categorize of symptoms of burnout, where ‘motivational symptoms’ are one of these.

However, in the current thesis ‘motivational symptoms,’ which are often described as ‘loss of motivation’ (Schaufeli & Enzmann, 1998), were chosen not to be reported as a symptom.

Rather, ‘the symptoms’ of a shift in quality of motivation, from autonomous to controlled, was thoroughly described as explanatory mechanisms in the burnout process (Ryan & Deci, 2002). In this perspective, ‘loss of motivation’ is something more than just a symptom of burnout, as it is argued to be a part of the burnout process.

The list of symptoms in the four categories was long and served as a reminder of the seriousness of higher levels of burnout. First of all, the symptoms had server consequences on the coaches themselves (e.g., depressed mood, inability to concentrate, sleep disturbance, without initiative, reduced physical shape). Further, the findings of intraindividual consequences supported previous findings that coaches who experience higher levels of burnout are less able to fulfill their coaching responsibilities towards their athletes (Price & Weiss, 2000; Vealey et al., 1998). These symptoms were plentiful (e.g., easily annoyed, unprepared for practice, reduced time spent with athletes, decreased quality of communication and feedback, less variation at practice, came in late to practice). Undeniable, these symptoms would be harmful for the essential role the coach play in the coach-athlete-performance relationship (Lyle, 2002). Further, the expectancies attached to being an excellent high-performance coach, such as effectively train sport-specific skills, motivate their athletes, help their athletes maximize their effort and recovery, preparing athletes for numerous competitions (Côté, Young, North, & Duffy, 2007, p. 14), would be difficult to achieve. Finally, no known previous studies in coach burnout literature have discussed the negative consequences for the organization the coaches’ work for. However, findings of this thesis indicated that they were many and serious (e.g., difficulties completing both complex and easy tasks, negativism towards leader, speaking ill of colleagues, cutting down on work

assignments, quitting their job). It is worth noticing that the wide range of experienced symptoms indicated that it was large individual variation in how the symptoms of higher levels of burnout were portrayed for the different coaches, implying that it is crucial to be aware of a magnitude of symptoms when trying to detect them in an early face of a burnout process.

The overall results of burnout symptoms reported in Papers I and IV indicated that there was some variety in how the different symptoms presented for each burnout dimension, both in terms of frequency and strength. There was no doubt that the coaches included in Paper I and the two coaches high in BS in Paper IV felt overextended and depleted of energy, which manifested both physical, emotional, and mental (Maslach et al., 2001; Pines & Aronson, 1983). Exhaustion symptoms were frequently reported, and the pictures the coaches drew about their experiences were both sincere and gravely: “I feel that sometimes when I go to work I have to drill holes in my eyelid to be able to see. Because you feel so tired.” (Paper IV, C4-HBS). The findings supported the description of exhaustion as the core component of burnout (Maslach et al., 2001). Further, all coaches described symptoms that are typical for cynicism—losing involvement and dedication (Day & Leiter, 2014), and increasingly negative attitudes for their job (Xanthopoulou & Meier, 2014). Interestingly, these increased levels of cynicism were mostly apparent towards the organization and parts of the jobs that did not concern the athletes. Overall, the high-performance coaches did not talk about increased cynicism towards the athletes, they rather described this part of the job as energizing, fulfilling, and fun. Consequently, awareness of symptoms of increased cynicism towards organization and leaders should be noted and intervened on, even if the coaches seems to be ‘symptom-free’ in relation to cynicism towards their work with their athletes. Further, these findings support choosing the MBI-GS as the quantitative measure of coach burnout as it measures the employees’ relationship towards the work in general, in favor of

MBI-Educational Scale (MBI-GS) or the MBI-Health Care setting (MBI-HSS), which measures burnout primarily toward recipients in their work (Lundkvist, Stenling, Gustafsson, & Hassmén, 2014; Schaufeli et al., 1996).

Finally, the findings of coaches' experience of reduced personal accomplishment were intricate. However, the qualitative results offered gained insight to changes in this dimension as the quantitative results indicating changes with small effects. First, the findings of Paper IV indicated that the coaches higher in exhaustion and cynicism did not express feelings of being reduced in their accomplishment at work, neither towards their organizational work assignments nor coaching assignments concerning their athletes. However, the results from Paper I showed different results, as findings showed a long list of negative consequence indicating reduced ability to coach and cooperate with their colleagues. Consequently, the contrasting results of symptoms in reduced personal accomplishment indicate that the coaches were at different stages in their burnout process, as reduced personal accomplishment is argued to be the last dimension of burnout that will manifest, after exhaustion and cynicism (Leiter & Maslach, 1988). A final reflection on symptoms is related to the finding that only one of the coaches in the quantitative studies went on sick-leave due to burnout. The rest of the coaches remained in their jobs, performing at their best in relation to their capacity. This should be an eye-opener for sports organizations, the coaches themselves and researchers. More attention is clearly needed to increase the awareness of the well-being for high-performance coaches while still at work.

Demographic variables and burnout

Previous findings have indicated that female coaches are more prone to burnout than male coaches (e.g., Kelley et al., 1999; Kelley & Gill, 1993; Vealey et al., 1992), as they experience larger interference with their family life (WHI) (Drake & Hebert, 2002), perceive

their job as more stressful (Kelley, 1994), and have coaching jobs associated with fewer resources (Kelley & Gill, 1993). The most interesting finding concerning gender in the current thesis was the low proportion of female high-performance coaches—approximately 7%. As of this skewed distribution in gender, it was not used as a control variable in the current thesis. This low percentage is in line with the findings of a report on gender equality in Norwegian Sports (Fasting, Sand, Sisjord, Thoresen, & Broch, 2008). Research examining why there are few female coaches pointed at a complex pattern of variables, where WHI, perceived stress and resources within the job are only some of many. Variables of interest are found at the individual level (e.g., knowledge skills and confidence), interpersonal level (e.g., support systems), and organizational levels (e.g., networks) (LaVoi & Dutove, 2012). Moreover, recent findings advocate for change in the inhospitable climate of sport experienced by females, for future realization of several female coaches in sport (Fasting, Sand, & Knorre, 2013). Even though these findings does not say anything about the relation to burnout, it could be questioned whether there is a link between variables which explain the low percentage of female high-performance coaches and previous findings that female coaches are more prone to experience burnout than their male counterparts.

Previous research has indicated a negative relationship between age and burnout (Kelley & Gill, 1993; Vealey et al., 1992). The same relationship was found in Paper II between age and exhaustion and cynicism respectively, although the strength was considered weak (Fraenkel & Wallen, 2000). Also, the coaches experiencing either high or low degrees of burnout symptoms in Paper IV were not different in age span. A related and important finding from Paper I concerned coaches' years of experiences on a new expertise level. It was not their age or their total years of experience as coaches who made them vulnerable to burnout, rather the lack of experience at a new expertise level of coaching, which in turn led to more work, uncertainty, and lack of control. Further, when analyzing for possible

relationship between age and burnout levels, it is important to be aware of a possible skewed selection of the coach population (Hjälml et al., 2007). The population of older coaches could be argued to be a ‘self-selected’ group, as it is expected that a part of the coach population leave the profession in a relatively early age due to the high perceived work pressure and inconvenient work hours (Hjälml et al., 2007). This could for instance be in a phase of life where they establish a family life. Hence, the negative relationship found between age and burnout levels should not only be interpreted as a result of older coaches being more professional and experienced, they might also be a population finding the coaching lifestyle more appropriate. All together, the findings suggest that there are no strong findings on age or experience in general related to burnout. Thus, experience at a new expertise level is indicated to be related to entering the burnout process. Summarized, findings of the current thesis suggest that there are more important variables to be discussed than demographic variables.

Perceived work environment

How does variation in coaching demands, perceived leaders support and workload influence the burnout process? (Paper I - IV)

Coaching demands

As burnout evolves over time and is defined as the results of mismatch between resources and demands (Maslach et al., 2001), it was legitimate to ask whether variation in length in sport seasons influenced differences in change in burnout among high-performance coaches. Thus, length of season did not have any relationship to change in the burnout dimensions in Paper II, and showed no relationship with exhaustion levels within the different exhaustion trajectories in Paper III. The time span in itself is a simplification of the burnout process within a competitive season. Information about what coaches do in between their

competitive seasons (e.g., preseason, vacations), and of course what they do during their competitive season is of greater importance to get a better understanding of timespan and development of burnout.

Performance related stressors in terms of results have been frequently reported as a stressor for coaches (Olusoga et al., 2009; Thelwell et al., 2008b). However, athletes' performance has shown ambiguous relation to coach burnout (Kelley & Gill, 1993; Quigley et al., 1987; Wilson & Bird, 1988). The results of Paper II showed a weak and negative correlation between coaches perceived goal attainment at the end of the season and change in reduced personal accomplishment, while no relation were found for goal attainment and change in the other two burnout dimensions. The results of Paper I indicated that both win and loss record of coaches contributed to initiate the burnout process. This is likely related to the processes within the organization initiated from either winning or performing below expected. In both scenarios in Paper I, leaders within the organizations became more controlling either due to increased prestige by being involved in a winning team, or trying to overrule decisions of coaches who were underperforming with their team. The findings of this study especially highlighted that it is crucial to acknowledge and remember that winning is not synonymous with well-being (Hall, Hill, & Appleton, 2012). Further, the results of Paper IV added to the previous findings, exemplifying why it is the associated variables related to the results that are of significance, rather than the results itself. The coach reporting lowest on perceived goal attainment and goal probability was one of the coaches also low in BS. The coach's ability to cope with the situation of relegated results helped him to stay focused and energized in his coaching job (Folkman, 1984; Shin et al., 2014). Overall, the finding of performance indicated that there are complex associations related to results. These are of greater importance to study than the win and loss record when aiming to better understand the burnout process in high-performance coaches.

The financial situation of the soccer teams were used as a ‘contextual variable’ in Paper IV when looking for explanatory factors in coaches higher or lower in BS, though no differences were found. It could be argued that the overall budget used in the study is not a valid measure of resources in Norwegian elite soccer clubs. As the soccer organizations in Norway are heterogeneously organized, the budget of each elite club could reflect only the elite group in some clubs, and both the elite team and the overall sports activity for all teams in other clubs. However, the budgets used are those that are officially reported to the Norwegian Soccer Federations license department, and should reflect the difference in resources. Though, these findings need to be interpreted with caution. Further, findings from Paper I were in line with the study of Hjälml, et al. (2007), indicating that lower degrees of resource could increase workload, which in turn affected the initiation of the burnout process.

Perception of leader support and workload

The qualitative nature of Paper I afforded opportunity to explore in depth how four professional coaches perceived their leaders and the organization they worked for after experiencing being in a burnout process. The findings revealed that the burnout process was rooted in their experiences in the work environment, where one higher order themed concerned their negative experiences with both immediate leader and top management in the organization. These negative experiences were lack of leader support, controlling leaders, leaders lack of knowledge of the sport, and lack of administrative help, which overall were described to be a consequence of ‘non-professional sports organizations.’ Partly, these experiences could be a consequence of Scandinavian Sports Organizations still being—albeit partly—driven on a voluntary basis (Ibsen & Seippel, 2010). This implies having leaders who are full time or part time volunteer, which also explains why they are not always present and are lacking of knowledge on professional sport. However, it should be noted that the coaches

working within national teams, with a more professional organization, also experienced ‘unprofessionalism.’ These findings challenge sports organizations to review how they solve their employer responsibility for high-performance coaches by giving them sufficient support. The lack of support experienced by professional coaches could also be understood as ‘un-autonomous independence,’ as their leaders did not give them guidance needed (Deci & Ryan, 2012). This is a finding underscoring that independence of employees is not the same as autonomy supported given by leaders (Deci & Ryan, 2012; Van den Broeck et al., 2008). Further, the unprofessionalism perceived by the coaches was a determinant of conflicts arising in the work environment, both between the professional coaches and management and between coaches. Conflicts have in previous research shown to be a crucial stressor for elite coaches (Olusoga et al., 2009) and a correlate of exhaustion (Stebbins et al., 2012). A study conducted in Norwegian elite sports organization found indications that different kinds of logics (i.e., amateur logics, politico-administrative logic, and the business-professional logic) are reasons for conflicts occurring in a complex sports organization (Steen-Johnsen, 2011). The experiences of professional coaches could be placed in a micro-political perspective, which describes the complexity of working in a semi-professional sports organization, where challenges occur due to conflicting motives, ideologies, and goals for the individuals engaging in it (Potrac & Jones, 2009; Thompson, Potrac, & Jones, 2013).

All four papers in the current thesis suggest that the high-performance coach profession is highly demanding in terms of comprising a heavy workload (Olusoga et al., 2009; Thelwell et al., 2008b). The qualitative results of the thesis revealed that the high perceived workload was a result of low resources, low degree of experience, lack of administrative help, unclear role expectations, too many tasks, and too complicated tasks. An increase in perceived workload for the mean population over the competitive season was not found (Paper II). This could suggest that coaches perceive their workload as high throughout

the whole season. However, an analysis of the mean value of a population could hide intraindividual differences of change in workload throughout the season. Therefore, intraindividual changes were used when examining for the consequences of change in environmental variables of the process of burnout in Paper II.

Consequences of change in leader support and perceived workload

The results of Paper II indicated that change autonomy support by leader had a direct negative prediction on reduced personal accomplishment, and a positively prediction on vitality and satisfaction with work. Implications of these findings suggest that lower levels of autonomy support would first and foremost lead to a decrease in well-being in high-performance coaches (Gagné & Deci, 2005).

Further, the results for Paper II supported previous studies, as change in workload especially had a strong and positively prediction on change in exhaustion (Leiter & Stright, 2009; Maslach et al., 2001). Despite the fact that change in workload was not a dominant prediction of change in the other two burnout dimensions (Fernet et al., 2013), it did positively predict change in cynicism, and negatively predict change in both well-being indices. These findings, along with the results in Paper III show that higher levels of workload was one of the strongest variables associated with higher levels of exhaustion, indicating that even though all coaches were found to report a high work demands, there is a threshold of workload that at one point becomes unbearable. However, the overall findings suggested that it was not primarily workload itself that had the strongest direct association with burnout or well-being for high-performance coaches. Rather, variation in negative consequence for the explanatory mechanisms (quality of motivation, need satisfaction, WHI, and recovery) caused by the environmental variables was of importance when explaining why some coaches increased in burnout dimensions whilst others did not.

Findings from Paper II indicated that change in workload and change in perceived autonomy support predicted change in the need for autonomy and relatedness in expected direction, however the prediction on change in the need for competence was marginal (Van den Broeck et al., 2008; Sullivan et al., 2014). It might be suggested that coaches' need for competence are more likely to be affected by other processes, such as their professional education and coaching experience (Côté & Gilbert, 2009), and job security and opportunities for professional development (Stebbing et al., 2012). Further, in Paper I, stringent effects of only workload and autonomy support from leaders as environmental predictors of change in needs as was not measured as done in Paper II, rather it explored the work environment in general and found interesting results. Coaches' experiences of working in a maladaptive environment had a detrimental consequences on thwarting of all needs and a shift towards a more controlled form of motivation, which is in accordance with previous research (Bartholomew, Ntoumanis, Ryan, & Thøgersen-Ntoumani, 2011; Stebbings et al., 2012).

Findings from Paper IV indicated that the two coaches high in BS throughout the season had larger concerns with their quality of motivation, and levels of WHI and recovery due to a large workload, compared to the two coaches' low in BS. The workload clearly had a negative impact on their private life both in terms of causing difficulties in combining work and home (Geurts et al., 2003), but also causing challenges for their recovery (Sonnentag et al., 2010). Further, the workload was also associated to a shift in quality of motivation towards a less self-determined motivation (Fernet et al., 2012). Combined, all papers supported and extended previous findings in suggesting that working in a maladaptive work environment, described by heavy workloads, an absence of leadership, controlling leadership style, conflicts in the environment, have a detrimental effect on the psychological needs, quality of motivation, WHI, and recovery for high-performance coaches.

Motivational variables as explanatory mechanisms

How does variation in basic psychological needs and quality of motivation contribute in the process towards burnout / well-being? (Paper I - IV)

Basic need satisfaction / Needs thwarting

The qualitative findings of Paper I was in line with the theoretical assumption that needs thwarting are associated to both change toward a less self-determined motivation (Deci & Ryan, 2000), and increase in burnout dimensions (Stebbins et al., 2012). Though, based on the qualitative nature of this paper, no predictions could be made. In Paper II, change in the need for autonomy, competence, and relatedness predicted change in both controlled motivation and autonomous motivation in expected directions (Deci & Ryan, 2000).

However, changes in all three needs did not predict changes in each of the qualities of motivation as expected. Change in controlled motivation was to a less extent predicted in comparison to change in autonomous motivation. This could be explained by the methodology used in this paper, as it did not measure needs thwarting, which is expected to lead to more harmful consequences than low degrees of need satisfaction (Bartholomew, Ntoumanis, Ryan, Bosch, & Thogersen-Ntoumani, 2011). Change in autonomous motivation was predicted by change in competence and change in relatedness as anticipated, but surprisingly not by change in the need for autonomy (Deci & Ryan, 2000). This result could be explained by the strong and direct prediction change in the need for autonomy had on changes in exhaustion, cynicism, vitality, and satisfaction with work. Previous findings in the work settings have typically measured either needs satisfaction (Fernet et al., 2013; Van den Broeck et al., 2008) or motivational regulations to predict variation in burnout (Fernet et al., 2012). The study of Sullivan et al. (2014) did explore a four step SDT process model including both psychological needs and quality of motivation, though had several

methodologically differences than Paper II. Of importance, in the study cross-sectional data was used to examine the process model and the direct effects of psychological needs to burnout was not examined, rather the effect was mediated through quality of motivation, which was measured with a motivational index. This result indicated that only the need for competence had an associated with burnout mediated through quality of motivation. Thereby, Paper II is the first study in burnout research that is examining both the direct effects of the three separate needs towards burnout and well-being, and their indirect effects mediated through quality of motivation. Consequently, the findings add to the existing literature suggesting that change in the need for autonomy is a strong and direct predictor of change in burnout, even when autonomous motivation is a part of the model. A different explanation on this somehow unexpected finding (Deci & Ryan, 2000) might be that this finding is a result of a statistical artifact due to testing such a complex model. Further, change in the need for relatedness and competence had direct predictions on changes in some of the outcomes, though primarily the effect on the outcomes were explained through mediation via change in autonomous motivation, in line with previous results and the theoretical assumptions of the SDT process model (Sullivan et al., 2014; Williams et al., 2004). Overall, the findings from Paper II combined with previous studies (Fernet et al., 2013; Sullivan et al., 2014) suggest that the three different needs have differentiated associations with the three dimensions of burnout, which support the need to study the needs as separate constructs rather than as a collapsed sub score of needs (Van den Broeck et al., 2008).

Moreover, in Paper II results indicated that change in all three needs separately served as significant mediators in the relationship between both change in workload and autonomy support and respectively change in exhaustion, cynicism, vitality, and satisfaction at work as expected (Gagné & Deci, 2005). However, no mediational effects from perceptions of environment to change in reduced personal accomplishment were found. This could be related

to the same arguments used for the unexpected findings of why change in workload and leader support failed to predict change in the need for competence. Most probably, there are other contextual variables that predict change in both competence and reduced personal accomplishment, such as experience, professional education, and opportunities for development (Côté & Gilbert, 2009; Stebbings et al., 2012). Finally, the overall results supports that the psychological needs served as important mechanisms in explaining the burnout process (Deci & Ryan, 2000). When the needs are fulfilled, they served as an energizing component in employees' thriving at work. Contrary, coaches who experience a low degree of need satisfaction at work, or worse experiencing needs thwarting, will be limited in their psychological resources that are necessary when coaching in a demanding high-performance work context (Fernet et al., 2013; Gagné & Deci, 2005; Stebbings et al., 2012).

Quality of motivation

There is little research examining variation in qualities of motivation in relation to employee burnout (Fernet et al., 2010; Fernet et al., 2012; McLean et al., 2012; Sullivan et al., 2014; van Beek, et.al, 2012). In brief, findings indicate that self-determined motivation is negatively related to burnout, while a less self-determined motivation is positively related to burnout. However, summarizing these findings is complex as quality of motivation has been measured and operationalized in different ways. This is also true for the different papers included in this thesis. Fernet et al. (2012) and Sullivan et al. (2014) have used a collapsed motivational index to explore more or less self-determined motivation. The concepts of autonomous and controlled motivations are used in Paper I and II. Finally, four distinct motivational regulations are used when examining quality of motivation by McLean et al. (2012), van Beek et al. (2012), and in Papers III and IV. These different methodological

choices have their strengths and weaknesses, and are chosen for conceptual and methodological reasons.

Paper I and IV explored in depth coaches' quality of motivation and burnout by respectively a qualitative and a mix-method design. Findings from both papers supported the general notion of high-performance coaches as highly motivated (McLean & Mallett, 2012). At the beginning of the season all coaches were evaluated as having autonomous motivation (Paper I) and highly intrinsically motivated (Paper IV). However, a shift in quality of motivation, from self-determined to less self-determined, was found among those coaches who experienced increase in the burnout dimensions throughout the season. The qualitative data described well how the coaches' reasons for being involved at work changed dramatically, from doing it 'just because it was awesome' at the beginning of the season to feeling 'it was meaningless' at the end of the season. These findings related to a study showing that teachers' decrease in self-determined motivation had detrimental effect on their levels of exhaustion (Fernet et al., 2012). However, these results described the overall tendency of the relationship between quality of motivation and burnout. Turning the attention to the results concerning the two main qualities of motivation, the picture is more nuanced.

The findings discussed in Paper II indicated that change in controlled motivation did not predict change in any of the outcomes, which were similar to the findings in a study among nurses and physicians (van Beek et al., 2012). Thus, the findings were not in line with the majority of previous findings (Fernet et al., 2012; McLean et al., 2012; Sullivan et al., 2014). However, differences in methodology might explain some of these different results. The cross sectional results from the study of McLean et al. (2012) indicated that both intrinsic and identified regulation had a negative correlation with a moderate and modest in strength respectively with exhaustion, while introjected and external regulations had positive and modest to weak correlation with exhaustion. Even though this study found a relation between

the less self-determined regulations and exhaustion, they were weaker than the relation with intrinsic regulation, and could therefore be argued to show the same tendency as the finding discussed in Paper II. Further, the two studies using the motivational index both showed that a more self-determined relation has a negative relation to burnout (Fernet et al., 2012; Sullivan et al., 2014). However, recently it has been advocated that each motivational regulation is a ‘temperature scale’ on its own, and that motivation is best represented by several distinct regulations, especially comparing to using a motivational index (Chemolli & Gagné, 2014). Collapsing the different qualities of motivations to a sum score may thereby not sufficiently capture the multidimensionality of motivation, and consequently important differences of the different motivational regulations could be missed (Chemolli & Gagné, 2014). It is therefore not possible to know how the relationship for the autonomous regulations and the controlled regulations were in Fernet et al. (2012) and Sullivan et al. (2014). There is a possibility that stronger correlations between the autonomous regulations and burnout could disguise a non-existing or weak relationship between the controlled regulations and burnout. Using Chemollies and Gagné’s argumentation, it would have been a better option to measure the distinct motivational regulations also in Paper I and Paper II. However, using the concepts of autonomous and controlled motivation was done due to both conceptual and methodological reasons. In Paper I the aim was to test whether the overall SDT process model were suitable as a theoretical framework for studying coach burnout, and for conceptual reasons it was chosen to keep the motivational constructs somehow parsimonious in the SDT process model. In Paper II, the choice of using autonomous and controlled motivation in favor of the distinct motivational regulations was chosen for statistical reasons. When testing a structural equation model, there are limitations in regards to how many variables it is possible to test in relation to the size of the populations (Kline, 2011). However, distinct motivational regulations was used in the two next papers in the thesis in accordance with suggestions of Chemolli and

Gagné (2014) to get a more nuanced understanding of why coaches coach and how this is related to burnout. The findings of Paper III supported the non-existing to modest relationship between less determined motivational regulations and burnout found in Paper II and previous research (McLean et al., 2012; van Beek et al., 2012), as introjected and external regulations failed to systematically show associations to classes of higher levels of exhaustion. Finally, in Paper IV some interesting findings were discussed in the context of one head coach, indicating that especially his involvement in coaching due to his high level of introjected regulation put him at risk for experiencing higher levels of BS. His high levels of introjected regulations were based on the responsibility he felt for ‘the future of his athletes.’ This is an interesting finding, as also other studies have highlighted coaches’ higher levels of care, concern, and commitment towards their athletes (Thelwell et al., 2008b). If the care for their athletes turns into a burden because the athletes’ future prospects are dependent on the coaches’ effort, this is expected to lead to negative consequences for the coaches over time. The effort put into the coaching job clearly needs to be balanced and towards coaches’ needs must be met to a greater extent. Further, it will be of importance in the professionalization of high-performance coaches to discuss where the boundaries for responsibilities for the athletes begins and ends. Further, the findings of Paper II did not reveal any relationship between change in controlled motivation and change in burnout and well-being. Summarized, the findings from McLean et al. (2012) and those discussed in Papers II, III, and IV indicated that there might be a relation between the more controlled regulations for coaching and burnout, though this relationship could be characterized as inconsistent and in the range of non-existing to weak. However, the tendency supports previous research that less self-determined motivation has a positive association with burnout. When trying to understand why coaches who are less self-determined in their motivation are also higher in burnout levels, the qualitative data from Paper I offer a possible explanation. The coaches explained how they do

the exact same work tasks within a season but with qualitatively different motivations, which resulted in their energy expenditure to be greater with a less self-determined motivation. This is in line with the theoretical tenets of SDT—behavior that is mostly driven by controlled regulations is more likely to drain energy as the activity is not done of free will and is not found interesting or fun (Ryan & Deci, 2002).

Further, the findings of less self-determined motivation are of interest in light of the findings regarding the relationship between more self-determined motivation and burnout and well-being. Hence, stronger and more unambiguous findings were revealed when examining the relations of more self-determined motivation in relation burnout. This is in line with previous research (McLean et al., 2012). Findings from Paper II indicated that change in autonomous motivation overall contributed to coaches all overall well-being by negatively predicting change in cynicism and reduced personal accomplishment, and positively predicting change in vitality and satisfaction with work. Change in autonomous motivation served as one of the strongest predictors in the overall SDT process model for all these four outcomes. Also findings from Paper III convincingly indicated that the probability of being in a class lower in exhaustion, rather than in a class higher in exhaustion, increased if the coaches were higher in intrinsic regulations. These findings were consistent both at seasons start and at seasons end. Summarized, these findings extend existing knowledge of the relationship between self-determined motivation and burnout among coaches and employees in general (Fernet et al., 2012; Sullivan et al., 2014), indicating that autonomous regulations, and in particular intrinsic regulation, have the strongest relation with burnout. Finally, the results of indirect effects in Paper II also indicated that change in autonomous motivation was a significant contributor, serving as a mediational variable in the relationship between change in competence and change in relatedness toward changes in all outcomes expect exhaustion. As previously discussed, change in autonomy was a strong predictor in itself for the

outcomes. However, change in the two other needs was found to have additional prediction on the outcomes through change in autonomous motivation. This additional finding strengthens of the importance of how differentiated levels of autonomous motivation serves as an explanatory variables in explaining why coaches either become increasingly at risk of burnout or experiences preventive effect of experiencing burnout within the SDT process model.

Trying to understand these results, it is imperative to take a closer look at what is characteristic for high-performance coaches as a profession. Most of these coaches have been involved in their sport for a long time, and often competed as athletes themselves (Altfeld & Kellmann, 2013; McLean & Mallett, 2012; Lundkvist et al., 2012; Salmela, 1994). In many ways, it could be said that the coach's previous hobby was turned into their profession, which makes them have a unique relationship with their job. As the high-performance coaches described in Papers I and IV, the coaching job is more than just a profession—it is a lifestyle. It has been argued that a consequence of being involved in your job for a long time is that it becomes a part of one's identity (Vallerand & Houliort, 2003)—as one of the coaches quoted in Paper IV was as saying: “Soccer is *me* in a way.” (CH-LBS) When having a strong affection and long term investment in the sport, it is understandable that it would have detrimental effects on their overall well-being when their initial autonomous regulations for their job are decreasing. It seems crucial for high-performance coaches to maintain joy and interest in this highly demanding job to be able to sustain lower levels of burnout and higher levels of well-being (Deci & Ryan, 2000).

Workload-related variables as explanatory mechanisms

How does variation in WHI and recovery contribute in the process towards burnout / well-being? (Paper III, IV)

Work-Home-Interference

As known, only one qualitative study has so far indicated that higher levels of interference between high-performance coaches' work and their private life were a contributing mechanism in the process towards burnout (Lundkvist et al., 2012). The results discussed in Paper III clearly support this finding, as the probability of being in a class with higher levels of exhaustion increased when the coaches were higher in WHI. It is of importance to emphasize that WHI came out as the strongest variable associated to probability of exhaustion class membership. The findings from Paper IV were in line with this result, as the two high-performance soccer coaches higher in BS experienced higher levels of WHI compared to the two coaches lower in BS. Looking at the high demands of the coaching professions these findings are understandable, as the coaches work long and irregular work hours, have high travel demands, their work contracts are often short, and they are at risk of getting fired if their performance expectations are not met (Altfeld & Kellmann, 2013; Arnulf et al., 2012; Lundkvist et al., 2012). A study examining female NCAA I coaches and their perceived challenges of WHI concluded by suggesting that there is a need to critically examine the structure and culture of sport clubs to be able to make change in regard to less interference between work and private life, and not only focus on how the individual coaches are handling the challenges concerning WHI (Dixon & Bruening, 2007). Marital status, if coaches were parents or whether they had other caring responsibilities was not examined in Paper III. However, the strong findings of WHI as challenging for coaches do most probably also

explain why some coaches choose to leave the profession. If the aim is to prevent burnout and promote long term employment for coaches in their positions, changes are needed to be made at the organization level to enable coaches to better combine the high-performance job with their private life. In brief, the results indicating that larger levels of WHI could be considered as an contributing mechanism explaining why some coaches who experience a demanding work situation are more prone to experience burnout. Even though mediational statistical analysis were not performed using WHI as a mediator, the results support previous research suggesting that employees who experiences WHI in addition to an already demanding work environment, are more susceptible to experience burnout (Blom et al., 2014; Geurts et al., 1999; Langballe et al., 2011). This knowledge is a beginning of narrowing one of the gaps in research on coach burnout (Lundkvist et al., 2012).

Recovery

There is a need for research focusing on coaches' needs and ability to recovery, as this should not be a topic exclusively concerning athletes in sport (Fletcher & Scott, 2010; Giges et al., 2004). One recent pilot study, following six professional soccer coaches over a season, showed interesting findings of the relation between stress and recovery (Kellmann, Altfeld, & Mallett, 2015). Over the competitive season, the stress level remained stable, but a decrease in recovery was found. Kellman et al. suggest that in periods in the season when the workload is consistently and necessarily high, it is of even greater importance to focus on quality of recovery. Paper III and IV add to this knowledge, as they are the two first studies known that focus on studying recovery in primary prevention of burnout among high-performance coaches. The findings of Paper III showed that the probability of being in a class with lower levels of exhaustion, rather than in a class of higher levels of exhaustion, increased when the coaches were higher in psychological detachment and relaxation. Moreover, the results

discussed in Paper IV also indicated that ability to meet recovery demands were a crucial indicator for coaches being either high or low in BS. The two coaches' low in BS had higher recovery abilities, while the coaches high in BS were not able to recover sufficiently. Overall, these results are in line with previous research with other occupations (Siltaloppi et al., 2009; Sonnentag & Fritz, 2014).

The ability to switch off the thoughts of work while not at work is of importance for coaches being able to recover sufficiently (Sonnentag & Fritz, 2014). However, this might be challenging for high-performance coaches who love their sport, and for whom the work is also their hobby. For instance, if a soccer coach is on the couch in the evening watching a match from a different league, is he relaxing or is he analyzing the play, thinking about tactics for the next match? Research on hobby-jobs' (jobs that have been created out of people's hobbies) relation to burnout indicated that this is a unique setting that could offer opportunities for both fun at work and recovery doing your hobby, if the person is able to continue to use their hobby in a restorative way (Volpone, Perry, & Rubino, 2013). In order to be able to achieve this balance, a high level of awareness around how to separate the job from the hobby is needed.

A different issue arising when discussing psychological detachment regards the 'content' of the thoughts that is present when not able to 'switch off.' One of the coaches' low in BS in Paper IV scored higher than mean population on psychological detachment. However, when he described the content of his thoughts, they were mainly problem-focused in a way he described as energizing (Folkman, 1984; Shin et al., 2014). As he solved cases and situations of that day's practice, it gave him energy to go out and performed the next day. Even though theory claims it would be even better if he was able to psychologically detach more often (Sonnentag & Fritz, 2007), it did not seem to have negative consequences on his burnout levels. It is expected that negative thoughts and rumination to a larger extent would

have had negative effects on burnout (Donahue et al., 2012). However, the aspect of content of thoughts is not measured in the psychological detachment questionnaire used (Sonnentag & Fritz, 2007). This finding suggest that it could be of interest to differentiate the consequences of psychological detachment, deepening on whether the thoughts are mostly with a positive content or a negative content. This finding might add knowledge when aiming to better understand the complexity of coaches psychologically detachment and its outcomes.

An essential question is how high-performance coaches could be able to sufficiently recover when traveling on train camps and competitions. As expressed by one of the coaches quoted in Paper I and also in previous research (Olusoga et al., 2012), travel is associated with intense work for high-performance coaches. Contrasting, one of the coaches quoted in Paper IV talked about his time away from the family as a possibility to focus only on his job and relaxation. A study supporting this was conducted with flight attendances (Sonntag & Natter, 2004). Differences in recovery experiences were based on whether they managed to do some recreational activities (i.e. working out, relaxation), and some of them were better able to recover when traveling than when being at home. Even though this study was conducted on a different occupation, it suggests that it is possible to find strategies of recovery when traveling with work if these are deliberately chosen. Further, the results suggest that it is of necessity to implement differentiated recovery strategies based on whether the coaches are situated in home town or out traveling.

Two findings of interest related to lack of sufficient recovery strategies in the qualitative studies were impaired sleep and use of alcohol as a relaxation strategy. Sleep is considered as the activity that has most clear restorative function (Demerouti et al., 2013). Findings in Papers I and IV indicated that coaches higher in burnout also complained about impaired sleep. This was both due to that they worked to many hours that there were few hours left for sleeping, and/or that they were rumination about work so they could not fall

asleep. Sleep disturbance is discussed to play a critical role in the development of exhaustion in burnout (Ekstedt et al., 2006), and should be argued to be an important part of recovery for coaches. Further, a coach quoted in Paper VI used alcohol as a relaxation strategy. This could be a taboo theme in coach burnout literature, as it has rarely been discussed. However, one previous study among elite coaches has described how alcohol consumption is used as a strategy to achieve psychological detachment from the stress of work (Olusoga, Butt, Maynard, & Hays, 2010). Research in other occupations found that negative work experiences predict negative work rumination, which again is positively related to heavy alcohol use, workday alcohol use, and after work alcohol use (Frone, 2014), which is not an efficient recovery strategy, rather it could be considered to be a cause of even more severe loss of energy and resources. Summarized, the current research acknowledges the importance on studying recovery among high-performance coaches (Raedeke & Kenttä, 2013). The findings of recovery add new knowledge in the area of coach burnout research.

Methodological limitations

Population

Coaching is a blended profession (Duffy et al., 2011). Even though studies discussed in Papers II and III included only high-level performance coaches, they came from a large range of sports with variations in demands and resources, travel demands, media coverage, and professionalism within their organization. It is expected for instance that a part time high-performance orienteering coach may have different demands and resources than a national coach in cross country skiing. However, the aim of Papers I, II, and III were to better understand the process and burnout and its related variables, and these processes are expected to be similar, and not largely depending on where the demands and resources stems from.

However, future studies should aim to target larger coach population in sport that share somehow similar in terms coaching demands and resources.

Measurement

The internal consistency of exhaustion and reduced personal accomplishment was acceptable in all papers in the current thesis ($> .70$; de Vaus, 2002). However, the dimensions of cynicism showed low internal consistency at T1 for Papers II and IV, while the internal consistency at T3 in both papers was acceptable. It was Item 3 in the subscale of five items that indicating low item correlation to the other items in the subscale ($< .3$; Kline, 2011). A validation study of the MBI-GS across different occupational groups in three nations reported that the three subscales overall showed satisfactory internal consistency, but reported some concerns for cynicism for some sub-population, caused by Item 3 (Schutte, Toppinen, Kalimo, & Schaufeli, 2000). A possible solution to this problem with Item 3 could have been to delete it from the subscale for Papers II and III (Kline, 2011). Pre-analysis was done exploring for this option, and the internal consistency did improve marginally. Further, low internal consistency ($< .70$; de Vaus, 2002) was also found for identified regulation at T1 in Paper III and IV, and for introjected regulations at all time-points measured in Paper III and IV. Pre-analysis conducted to test for item correlations within the scale indicated that all items were correlated with the others $> .03$ for identified regulation. For introjected regulation, only one item in one of the measurement points indicated an insufficient item correlation to the other items in the subscale (Item 1). However, all indicators of internal consistency for autonomous motivation and controlled motivation were satisfactory in Paper II. Thus, it was decided to keep item all items within the subscales of cynicism, identified regulation, and introjected regulations in the scale in their original form due to conceptual reasons and, as researchers have argued, low internal consistency might be a consequence of the combination

of few items and a small population (Dekovic, Janssens, & Gerris, 1991; de Vaus, 2002; Holden, Fekken, & Cotton, 1991).

Amotivation was not measured in the current thesis, a motivational regulation described in SDT to concern a non-existing regulation for behavior (Ryan & Deci, 2002). This was a pragmatic decision in the planning phase of data collection, where the researchers aimed to make the shortest possible online questionnaires for Paper II, III, and IV. However, it has been suggested that amotivation have associations with burnout. In the study of McLean et al (2012) a moderate and positively relationship were found with exhaustion. Van Beek et al. (2012) discussed that it might be more likely that amotivation is related than external regulation. This could also be true for the findings in the current thesis. Further, in this thesis needs thwarting was also not included as a measure in the quantitative data collection due to the same pragmatic reason as mentioned above. This is considered a limitation in light the results of Paper I and previous studies (Bartholomew et al., 2011; Bartholomew et al., 2011; Stebbings et al., 2012).

Analysis

In this thesis, the SDT process model was tested using both motivational and workload related variables as explanatory variables within this process. The term explanatory variables were chosen due to the differences in methodology used in the papers, and consequently the term mediator was not used. Statistical analysis of indirect effects was only conducted in Paper II. The term indirect effect is the correct term to use when the variable that is a mediator (M) explains a causal relationship between X and Y, and that without X and Y being directly associated (Hayes, 2009; Mathieu & Taylor, 2006). This was the case for some of the indirect effects between variables in the overall process model discussed in Paper II. However, it is expected that the relationships between the X and Y examined in the overall process model

would have been directly associated if only the relationships between the M, X, and Y had been tested. Thus, due to the complex model with multiple mediators, both longer causal chain of mediators and multiple mediator' ('stacked' mediators) (Mathieu & Taylor, 2006) some of the direct effects among variables can become non-significant. Therefore, the term 'served as a mediator' in regards to these findings are used (Mathieu & Taylor, 2006). Further, mediational analyses were neither used in the qualitative studies, so also here the term 'explanatory variables' were found more appropriate. Moreover, the current thesis did not examine for possible moderation effects. In previous related studies, for instance quality of motivation have been found to be an interesting variable testing for moderation effects in various relationships towards burnout (e.g., Fernet et al., 2010; ten Brummelhuis et al., 2011).

Drop out and missing data in longitudinal studies is a well-known challenge in behavioral science (Enders, 2011). Analysis examining the patterns of missing data indicated that in Paper II and IV the missing data was completely random (MCAR). In Paper III, the data was not MCAR, however follow up analysis showed that there were no differences in any of the study variables at T1 for those completing the study at all three time points versus those dropping out after at T2 or at T3, suggesting that the data was missing at random (MAR). Further, statistical strategies to impute missing data were explored for both Paper II and III guided by current recommendations (Enders, 2010; Enders, 2011). In Paper II, the dropout rate from T1 to T3 was 27%. An attempt to use multiple imputations was explored, though the model fit of *MPlus* indicated an over-fitted model. Consequently, only those participants responding at both time points (N = 343) were used. This dataset had a maximum of 5.2% of missing data of each time point, and to obtain a complete dataset, expectation maximum algorithm (EM) was used to impute missing data per subscale for each time point separately.

In Paper III, the response rate at T1 were 54.7% ($N = 467$), while the response rate for those responding at all three time points were 35.1% ($n = 299$). Therefore, Full Information Maximum Likelihood (FIML) in *MPlus* was considered for the complete dataset. This method makes use of all available data in the longitudinal data set, and is currently considered the best approach for handling missing data that are either MCAR or MAR (Enders, 2011). However, challenges occurred when trying to do doing further analysis to explore how the workload-related variables and motivational regulations were associated with the different trajectories at both time points due to missing data on the associated variables. Consequently, this would lead to large variance in N when conducting the multinomial logistic regression analysis for each variable. Further, it was not an option using multiple imputations to handle the missing data in *MPlus*, because the results of logistic regression odd ratio analysis with confidence interval are not available for multiple imputed data in *MPlus* (Muthén & Muthén, 2012). A consequence of eliminating those coaches who did not respond at all three time points gave a loss of power and a possible risk that the results would not give an adequate picture of the number of trajectories for exhaustion for the total coach population of. Therefore, LGCA using FIML to handle the missing data were applied to both data set ($N = 467$ and $n = 299$) to test whether the results of the number of trajectories differed. The results indicated that the number of trajectories and their development were the same for the two datasets (see appendix in Paper III), and consequently the analysis were conducted with the dataset consisting of $n = 299$.

Additionally and maybe more problematic was the relatively large proportion of coaches who did not respond at all in the study at T1 (45.3%). In accordance to guidelines in how to enhance response rate for online surveys, the current study used a longer questionnaire (longer response time) than recommended (Fan & Yan, 2010).

Initially, this thesis aimed to focus on well-being as an outcome to compliment the findings of burnout. However, this was done to a lesser extent than aimed, due to the magnitude and complexity of variables used in the Papers. For instance, in Paper IV, we aimed to base the inclusion criteria's on both burnout dimension and well-being indices in line with the work of Keyes (2002), however these selection criteria became too complex.

Implications

The implications of the findings of the current thesis are related for the coach, for the organization the coach works in, and for coach education.

Younger coaches and coaches who are entering a new expertise level are especially in need of support from the sports organization in terms of autonomy support from leaders (Gagné & Deci, 2005) and opportunities of adequate education (Côté & Gilbert, 2009). Especially, the findings suggest that the coaches have to be better prepared for the micro politics in sport, exemplified by ambiguity and political complexity they will meet in the everyday work life as coaches (Potrac & Jones, 2009; Thompson et al., 2013). The coaches enjoyed and felt competent in the work assignments related to enhance athletes' performance. But the political aspects of their role as a coach were found to be demanding, something that was exemplified by a lack of understanding of who really made the decisions within the organization, challenges regarding administrations of the team, and what consequences team selection might have. Mentors could be favorable for these coaches in guiding them through new and unexpected challenges related to new expertise levels (Erickson, Cote, & Fraser-Thomas, 2007).

There is certainly a threshold for the workloads high-performance coaches can handle, no matter how autonomously motivated they are. The term *perceived workload* serves as a good barometer for assessing whether the coaches have the resources (e.g., time, skills,

leaders support) needed to do the job expected. If the coaches experience a mismatch (Leiter & Maslach, 2004), necessary interventions need to be made before the high workload initiates the burnout process. Coaches themselves need to be aware of their own threshold regarding perceived workload, and be able to monitor when the workload is increasing and exceeding their threshold. Thereafter, they need to be able to take steps towards lowering the workload. One of these steps is dialogue with the employer. With this said, avoiding having a too high workload is not mainly the coach's responsibility. This is first and foremost the responsibility of the sports organization as an employer. Having clear expectations for what work assignments are involved within a coach position is of great importance. Sports organizations with differentiated resources available cannot expect the same amount of work done from coaching teams consisting on fewer coaches in comparison to coaching teams of several coaches. Role expectations should be communicated by the sports organizations to the coaches to help them prioritize their energy on the most important work assignment.

Leaders play an important role defining the work environment for the coaches (Gagné & Deci, 2005). The leaders can either be a resource or a demand, depending on how they are perceived. If a leader is able to help the coach organize and prioritize work assignment, support the coaches in their job and in challenging situations, offer help when needed, solve conflicts arising, they are considered to be a resource. Also leaders who work part time or as volunteers should be able to do support their coach. However, in situations like this it would be even more important for both coaches and leaders to have legitimate and clear role expectation for one another (Steen-Johnsen, 2011). It is of importance that the leaders are present, and not force the coaches into an unwanted situation of independence (Deci & Ryan, 2012). Coaches do want to have leaders who provide them with structure, give them autonomy support, and care about them. Overall, it is of importance to support coaches' psychological needs (Stebbins et al., 2012).

Findings indicated that when more autonomous regulations decreased or were lower, this would increase the levels of burnout and decrease well-being. As coaches entered the profession with a highly intrinsic motivation for the sport, finding it fun, interesting, and valuable, these are aspects that are of great importance to preserve. The coaches themselves should aim to do the coaching activities they like the best regularly. Further, their leaders and sports organization should support coaches in the assignments they find least interesting and fun. Meetings within coach teams, and with coach and leaders, should regularly discuss this topic. The aim should be to keep the fun and interesting aspects of the job in their everyday work life, as sustainable self-determined motivation could help the coaches stay vigorous in a demanding job over time. Coaches should be trained in coach education to monitor their own quality of motivation, as it could be a useful parameter to assess own well-being over time.

Several practical implications could be drawn from the findings of WHI being an important explanatory variable in the burnout process. Coaches need to be highly aware of the challenges that are associated with combining their high-performance coaching job with their private life. Thereafter, the first step would be to plan, foresee and discuss possible obstacles with important persons in their private life. Next, these obstacles should be discussed with their employees on a regular basis with the purpose to develop strategies on how to best handle these in order to minimize additional life stressors from the private domain to their overall situation, and vice versa. Sports organizations should be aware of the benefits that might be gained if coaches have a sound and solid private life (Geurts et al., 1999). Finally, WHI interference is a central topic that should be discussed in coaching education, as it is clearly a topic that would be of concern for most coaches, regardless private situation.

The importance of recovery for coaches is a neglected topic in the coach burnout research (Raedeke & Kenttä, 2013). It is of necessity to implement training and reflection about this already in coach education. Further, implementing recovery strategies in coaches

every day work life should be done both at home and when traveling. At home, coaches should aim to lower the workload (Sonnentag & Niessen, 2008), and detach from work by doing recreational activities that require full attention (Sonnentag et al., 2010). While traveling with high work demands it is of importance to find time for optimal recovery, like taking an hour off to do exercise (Sonnentag & Niessen, 2008) or for a restorative break (Troughakos, Beal, Green, & Weiss, 2008). Sports organization and leaders should help coaches to carefully schedule and commit to their leisure time. This could be done in dialog with the coaches by regularly discuss how to solve challenges such as media attention at all hours, and how available they should be on email and phone (Sonnentag & Niessen, 2008).

There are arguments supporting that the current findings could be generalized to other occupations. Coaches work situation could be described as highly inconvenient, with flexible work hours. Contemporary work has become increasingly portable, which means that the employees boundaries from work and leisure time is fading and is becoming blurred (Leiter et al., 2014b). This is true for several occupational groups, such as leaders and managers both in private and public areas. The flexibility might be a great opportunity to combine hard working occupations with for instance family life, though, it demands better skill in managing workload, planning. The findings of all explanatory variables within the current thesis are therefore of highly interest for similar occupations.

Conclusions

The longitudinal designs offered in the current thesis contribute to better understanding of the process of burnout among high-performance coaches. Overall, there was a tendency that the coaches increased in burnout dimensions and decreased in well-being indices over the competitive season. However, interesting findings occurred using a personal centered approach, which gave a more nuanced and likely more accurate picture of the

development of burnout over a season for the current profession. Most coaches do not experience higher levels of exhaustion during a season; however, there are subpopulations that either increase significantly or stay high in exhaustion throughout the season. At the end of the season, one out of four of the coaches was characterized as high in exhaustion, which is a considerable number. Additionally, the magnitude and seriousness of the reported burnout symptoms for the high-performance coaches displayed first and foremost as harmful for the individual coach. Certainly, negative consequences were also found at the intraindividual level concerning athletes, colleagues, and family, as well as the organization for which the coach worked through lack of effort put into the job, number of conflicts, and work withdrawal. Summarized, these findings indicate urgency for more studies with the aim of better understanding the process of burnout and how to prevent it.

The SDT process model served as a sound theoretical framework to study change in burnout and well-being among high-performance coaches. A variety of maladaptive variables experienced in the environment served as a catalyzer in the process towards burnout. These variables were, for instance, higher degrees of perceived workload, insufficient leadership, conflicts, unexpected results of both losing and winning, and lack of experience at the current performance level. Even if the initiating variables in the environment were perceived differently by the coaches, they negatively affected both the motivational and workload related variables in the expanded SDT process model, which in turn were found to be significant variables in explaining *why* a maladaptive work environment led to higher levels of burnout and lower levels of well-being. The findings of this thesis add to previous knowledge on coach burnout in several ways.

First, through the findings of Paper I, a qualitative understanding on how a variety of experiences in the environment leading to thwarting of all psychological needs, which in turn led to a shift quality of motivation, is offered. Together, these explanatory variables were

strongly associated to the wider variety of severe burnout symptoms experience by all coaches, who all eventually left their job after that season.

In Paper II, insight into how intraindividual changes within a four step SDT process model explained changes in burnout and well-being among coaches over a season was offered. Changes in the environment (perceived workload and autonomy support from leader) led to change both psychological needs and autonomous motivation. These were important explanatory variables within the four step SDT process model explaining why high-performance coaches increased in burnout and decreased in well-being. Change in controlled motivation did not contribute significantly in the process model. Further, the results of the indirect effects of the process model were supported, indicating that, in particular, change in autonomy and change in autonomous motivation served as important mediational variables between change in the environment and changes in the outcomes.

In Papers III and IV, more nuanced results concerning how the different motivational regulations were associated to burnout dimensions were offered, indicating that, in particular, intrinsic regulations had a strong and significant negative relation to coach burnout dimensions. Further, findings of importance were offered regarding WHI and recovery as explanatory variables in the burnout process for coaches, which consequently added new knowledge to the coach burnout literature. Coaches who experienced larger interference between work and private life were at greater risk of experiencing higher levels of burnout. Further, the ability to meet recovery demands were crucial in order to remain healthy and vital in the jobs as a coach, and both psychological detachment and relaxation need to be better implemented as skills among coaches to prevent burnout.

Important implications drawn from this thesis are the need to aim for a sustainable workload, to have leaders who are present and support the coaches' need for autonomy, competence, and relatedness, and to be aware of the importance of keeping the fun and

interesting aspects within the coaching job present in the everyday work life, to minimize challenges regarding WHI, and finally to plan for recovery to be able to sustain the demands of the coach. All these aspects should be better implemented on three levels: first, increasing coaches' own awareness for the topic; second, bringing all aspects into coaching education; and third, increasing the awareness of sports organizations' responsibility as employers to offer support on these aspects for their high-performance coaches.

Final reflections and future studies

The SDT process model proposes a stepwise hierarchical description of how the different psychological mechanisms are related to one another (e.g., Williams et al., 2004); however, it is also of interest to do some final reflections of the concepts of 'loss spirals' and 'gain spirals' in regard to the process towards either burnout or well-being. Leiter and Maslach (1988) suggest that emotional exhaustion is the first step of burnout, followed by cynicism and reduced professional efficacy, which in turn indicates a progressive and a more severe phase of burnout. Using this line of thought, high-performance coaches who are experiencing higher levels of exhaustion could not only be negatively affected on the other two dimensions of burnout, but also on their perceptions of the work environment. For instance, some of the symptoms of higher levels of exhaustion found in Paper I were losses of energy and concentration. It is reasonable to believe that these symptoms will cause a differentiated perception about workload in comparison to when feeling highly vital. Therefore, a burnout process could be described as a negative spiral, where the causes and symptoms have an interrelated relationship over time. A theoretical framework that supports the study of the negative burnout processes as a loss spiral is the theory of conservation of resources (COR: Hobfoll, 1989). The basic tenets of the COR model is that humans are motivated to obtain, retain, foster, and protect those things that they value (Salanova,

Schaufeli, Xanthopoulou, & Bakker, 2010). The loss spiral has been supported in a study among nurses finding reciprocal relationships where higher job demands led to higher levels of WHI, which again increased the possibility of general health deterioration over time. In turn, reduction in general health gave rise to higher job demands and WHI, which may even have aggravated the nurses' general health (van der Heijden, Demerouti, & Bakker, 2008). Reciprocal relationships over time have also been found with the variables of work pressure, WHI, and exhaustion (Demerouti et al., 2004). Similarly, gain spirals could be of interest when examining the process towards well-being among coaches. Gain spirals are defined as amplifying loops in which cyclic relationships among variables build on one another positively over time (Lindsley, Brass, & Thomas, 1995). Researchers within health psychology has embraced the idea of positive spirals, and suggest use of prospective designs that are sensitive to various pathways and trajectories and consider reciprocal influence among changes in, for instance, health behavior, social processes, appraisals, coping strategies, and disease-relevant biomarkers (Aspinwall, 2010). Future longitudinal studies should aim to use proper methodological designs, such as cross legged designs, to examine loss and gain spirals towards either burnout or well-being among high-performance coaches.

Moreover, future studies should include the whole sport season to get a better understanding of the process of burnout, including the preseason. Additionally, by including several seasons, it would also be possible to study what happens between seasons in terms of restoring energy levels for the high-performance coaches. This line of study has been successfully conducted in burnout research in the healthcare setting (e.g., Rudman & Gustavsson, 2011). Increasing the length of data collections could also naturally add at least one extra measurement point during the season, which is of importance to be able to study non-linear trends using LCGA (Andruff et al., 2009; Jung & Wickrama, 2008).

Qualitative methods offer in-depth insight. However, Paper I and IV only examined the coaches' perspectives and perceptions of their burnout process. Letting them tell their stories, they included others in their stories such as leaders, administrative workers, colleagues, athletes, and their families. Future studies should triangulate data and consider simultaneously collecting data from top management and leaders, coaches, and athletes to get a more nuanced view of the dynamics within the organization and variables related to the burnout process (Thurmond, 2001).

Findings from the qualitative study clearly indicated that needs thwarting played a significant role as a contributing variable in the coach burnout process. Future quantitative studies should include needs thwarting as a measurement of coach burnout (Bartholomew et al., 2011; Bartholomew et al., 2011). Even though the findings of quality of motivation in the current study have offered more insight in these complex patterns within the process of burnout, more research is still needed. Results strongly indicated that intrinsic regulations, and change in intrinsic regulation, offered associations of important in the outcomes of the studies. In sport psychology, most research have used either a motivational index, autonomous and controlled motivations, or four distinct motivational regulations exploring relationship to the outcomes. However, it could be of interest in some situations to do as previously has been done in occupational psychology, either only using intrinsic regulation to measure the relationship to burnout (e.g., Rubino, Luksyte, Perry, & Volpone, 2009) or using the two extremes on the motivational continuum, intrinsic and external (e.g., ten Brummelhuis et al., 2011). Further, amotivation should be included when burnout is an outcome of the study of coach burnout. Finally, future research should explore the possibility of some of the explanatory variables used in the current thesis could serve as important moderators in the relationship between environment and burnout / well-being (Fernet et al., 2010; ten Brummelhuis et al., 2011).

The findings in Paper IV indicated differences in coping with demanding situations related to whether the coach was high or low in burnout symptoms. More research is needed to better understand coaches' interpretation and awareness of situations they are in, and to further explore how their coping strategies could serve as explanatory variables in BS (Folkman, 1984; Shin et al., 2014).

The current thesis offered a solid base to further explore the relationships and importance of both WHI and recovery in the process of burnout for high-performance coaches. Future research should add to these findings, both by replicating them and extending them. Two more specific examples of research that should be conducted in relation to recovery for this occupation are sleep quality (Ekstedt et al., 2006) and alcohol use as a recovery strategy, as it could lead to undermining employee health (Frone, 2014).

The current thesis did not examine turn-over among high-performance coaches. High-performance coaching is clearly a demanding profession and it is expected that an important number of coaches leave the profession after some years. As it could be argued that continuance and competence among coaches in sports are important, more research on reasons for turnover is clearly needed in the future. In this regard, it could also be of interest to examine whether moderate and high levels of burnout and their related symptoms are explaining variables in why coaches are leaving the profession of coaching.

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PAPER I

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The process of burnout among professional sport coaches through the lens of self-determination theory: a qualitative approach

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Using a qualitative retrospective approach, this paper investigates *how* some work-related demands led to burnout among four professional coaches. Self-determination theory (SDT) offered a sound theoretical framework to better understand the motivational process leading to serious negative outcomes (Ryan & Deci, 2002). Findings indicated that all coaches experienced working in a maladaptive environment, exemplified by experiencing very heavy workloads, a lack of leader support, and work-related conflicts. These experiences had a detrimental effect on the coaches' motivation. Psychological need thwarting and a shift towards a more controlled form of motivation explained why coaches became increasingly at risk for burning out, a process that evolved over time. All four coaches experienced a wide range of burnout symptoms. Findings from this study highlight the importance for sports organizations to better cater for the psychological needs of professional coaches to prevent burnout.

Keywords: burnout; professional coaches; non-professional sport organizations; psychological need thwarting; quality of motivation

Introduction and aim

Working as a professional coach covers a wide range of responsibilities, such as administration, media, travel, and being in charge of all aspects of athletes' development and performance during training and competitions (Lyle, 2002). Even though coaching can indeed be rewarding, research exploring high-performance coaching has underlined the struggles of dealing with high work pressure and highly-perceived expectations (e.g. Lundkvist, Gustafsson, Hjälms, & Hassmén, 2012; Olusoga, Butt, Hays, & Maynard, 2009). When experiencing a large workload and high pressure at work, coaches are at risk of serious negative health outcomes such as professional burnout (Hjälms, Kenttä, Hassmén, & Gustafsson, 2007; Lundkvist et al., 2012).

Burnout is a multidimensional syndrome consisting of exhaustion, cynicism and a reduced sense of accomplishment (Maslach, Schaufeli, & Leiter, 2001). Exhaustion is often regarded as the key component of burnout, where an individual feels drained of energy. Cynicism is characterized by a negative, distant attitude towards work, where work is not perceived as valuable or as interesting as it used to be. A reduced sense of personal accomplishment refers to feeling professionally ineffective. These three dimensions are believed to evolve differently during the burnout process, and to interact in an interdependent fashion (Taris, Le Blanc, Schaufeli, & Schreurs, 2005). In a recent Swedish study, exhausted elite-level soccer coaches described how the awareness of becoming increasingly cynical was perceived as an additional stressor

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(Lundkvist et al., 2012). Work-contextual variables are believed to have a reciprocal relationship with burnout, where the perceived loss of resources and the existence of negative emotions may initiate a loss spiral (e.g. Demerouti, Bakker, & Bulters, 2004). Excessive workload (Leiter & Maslach, 2004) and conflict in the organization (Olusoga et al., 2009) have been identified as work-related variables increasing the risk of professional exhaustion. Despite the seemingly clear relationships between work-environment factors and burnout, research findings have failed to explain why some employees burn out while others do not.

Intrinsic motivation has been identified as an important resilience factor enabling some individuals to stop and rebound from negative loss spirals believed to lead to burnout (ten Brummelhuis, ter Hoeven, Bakker, & Peper, 2011). Intrinsic motivation is a central concept within self-determination theory (SDT), which describes how *the quality of motivation* can predict differences in well-being and performance (Ryan & Deci, 2002). Professional coaches have developed a unique relationship to their occupation built from a long-term involvement in sport. This highly valued involvement in sport has, at a certain point, become their profession. Coaches are typically highly-motivated, passionate and committed to their role, as it is a job, a lifestyle and an important part of their personal identity (McLean & Mallett, 2012; Raedeke & Kenttä, 2013). The *quality of motivation* present in coaches is an important factor to succeed in coaching, but might also be a risk factor. This is because a growing number of studies using the framework of SDT in sport has demonstrated how individuals' perception of their working environment influences motivational indices associated with the development of burnout (e.g. Stebbings, Taylor, Spray, & Ntoumanis, 2012; Sullivan, Lonsdale, & Taylor, 2014).

Coaches' motivation is affected by an interaction with their work environment (Deci & Ryan, 2000; Ryan & Deci, 2002). It is a dynamic, dialectic process where coaches' interaction with athletes, colleagues, immediate leaders and top management influences one's motivation (Gagné & Deci, 2005). Qualities in work environments are found to either promote or inhibit coaches' motivation. Differences in perceived work environment can essentially be described as either adaptive or maladaptive (Deci & Ryan, 2000; Ryan & Deci, 2002). A work environment will likely never be purely adaptive or maladaptive, although they can be described as for the most part as being one or the other. Leaders play an important role in defining the quality of the work environment. Leaders valuing coaches' approach and perspective, providing meaningful information and rationale for work tasks, and offering room for personal preferences, will typically create an environment for coaching that is characterized as autonomy supportive (Gagné & Deci, 2005). Autonomy-supportive leaders provide a work environment with limited work pressure, reinforcing competence feedback. In contrast, controlling leaders impose poorly anchored goals for their employees, setting unreasonable time restraints on coaches' work assignments, thus creating a maladaptive work environment (Baard, 2002). Work environments that are perceived as mainly maladaptive will have a negative influence on coaches' motivation and well-being, while work environments that are perceived as mostly adaptive will have a positive influence (Deci & Ryan, 2000; Gagné & Deci, 2005).

Psychological need satisfaction is one of two motivation components highlighted within the SDT framework (Deci & Ryan, 2000; Ryan & Deci, 2002). The need for autonomy represents an individual's inherent desire to experience ownership over one's own actions and choices. To act with autonomy should not be mistaken with acting independently (Deci & Ryan, 2012; Van den Broeck, Vansteenkiste, Witte, Soenens, & Lens, 2010). An employee can be autonomously dependent on his leader when he

reflectively chooses to rely on his leader. For instance, when he is given advice or direction in his work, or if he follows up a request which is in line with his own values (Deci & Ryan, 2012; Van den Broeck et al., 2010). However, leaders can also push their coaches into an 'un-autonomous' situation of independence by forcing them to make decisions on their own thus abandoning their need for direction (Deci & Ryan, 2012). The need for competence refers to the experience of being able to succeed at optimally challenging tasks, thus attaining desired outcomes, while the need for relatedness describes how employees seek a sense of mutual respect and reliance with their colleagues and leaders (Van den Broeck et al., 2010). It is not the 'strength' of the satisfaction of each need that is key but rather the individual's perception of how important these needs are and to what extent they feel they are satisfied (Deci & Ryan, 2000; Van den Broeck et al., 2010). When coaches experience satisfaction of their basic psychological needs for autonomy, competence and relatedness, positive outcomes such as enhanced quality of motivation, psychological growth, well-being and performance are expected (Deci & Ryan, 2000; Ryan & Deci, 2002). Studies within the work domain have clearly reported that lower degrees of need satisfaction yield a positive relationship with burnout (Fernet, Austin, Trépanier, & Dussault, 2013; Van den Broeck, Vansteenkiste, De Witte, & Lens, 2008). Similarly, believed to lead to even more harmful effects on individuals than lower degrees of need satisfaction, is the intentional obstruction of psychological needs fulfilment, termed needs thwarting (Bartholomew, Ntoumanis, Ryan, Bosch, & Thogersen-Ntoumani, 2011). To our knowledge, only one study (Stebbins et al., 2012) has examined the effect of psychological needs thwarting and perceived work environment among coaches. Greater work-life conflict and fewer perceived opportunities for professional development were positively associated with psychological needs thwarting, which again were positively related to negative affect and exhaustion (Stebbins et al., 2012). Working for a prolonged period of time in an environment where psychological needs satisfaction is limited or thwarted are found to increase the risk of professional burnout.

Psychological needs satisfaction leads to enhanced quality of motivation (Deci & Ryan, 2000; Ryan & Deci, 2002). Coaches will have many different reasons for why they engage in coaching, and these reasons can be classified into either an autonomous form (higher quality) or a controlled form of motivation (lower quality). Individuals are typically driven by both of these motivational forms at the same time, though they have a tendency to be motivated by one, more so than the other. Autonomous motivation is typically portrayed through behaviours where one feels a true sense of volition and choice. This type of motivation is found to be adaptive, as it promotes greater adherence to the activity and higher degree of well-being (Ryan & Deci, 2002). In contrast, controlled motivation refers to when the individual feels pressured to participate or perform, either by others or by a perceived internal force (Ryan & Deci, 2002). Controlled motivation is a maladaptive form of motivation, leading to ill-being symptoms over time (Ryan & Deci, 2002). Findings from the domains of sport and work have revealed that the quality of motivation influences burnout propensity. Individuals who are mostly driven by autonomous motivation are less susceptible to experience burnout, in contrast to those individuals who are driven mostly by controlled motivation (McLean & Mallett, 2012; Sullivan et al., 2014).

Few studies among coaches have been conducted to better understand the process of burnout (e.g. Goodger, Gorely, Lavalley, & Harwood, 2007; Raedeke & Kenttä, 2013). In addition, there is a lack of studies aimed at exploring professional coaches' personal

experience with burnout development (Lundkvist et al., 2012). The current study used a qualitative retrospective approach to investigate the perception of the exhaustion process in professional sports coaches. Additionally, the study examines whether the SDT could be a valuable framework to better understand coaches' experience of the process towards burning out.

Method

Inclusion procedures

After obtaining permission from The Regional Committees for Medical and Health Research Ethics (REC) in Norway, an advertisement was used to recruit participants for the study. The advert was distributed through the website and email system of The Norwegian Olympic and Paralympic Committee, The Norwegian Confederation of Sports, and on the website of the Norwegian School of Sports Sciences. The following inclusion criteria to join the study were proscribed: (1) a participant coach should have experienced being highly exhausted while working as a coach; (2) he or she should either work full-time at a professional club or at the elite level; and (3) due to ethical considerations, he or she should have recovered from exhaustion at the time of the interview. Twelve coaches contacted the researchers either by phone or email. The first author did a preliminary phone interview with all 12 coaches to evaluate whether or not they fulfilled the inclusion criteria. Structured interviews are commonly used to evaluate whether an individual suffers, or has suffered from burnout (Schaufeli & Enzmann, 1998). Although this method has faced criticism for being highly subjective, it offers strength in its flexibility as the interviewer can ask for more in-depth information or probe to clarify statements (Schaufeli & Enzmann, 1998). Five coaches were immediately excluded because their experience with exhaustion had occurred in amateur sport. Further, inclusion criteria addressed the fact that exhaustion is something more than being tired after a work-day or a work-week; an important distinction when selecting the participant coaches. The coaches then were evaluated both by a state definition of burnout: 'a feeling of being overextended and depleted of one's emotional and physical resources' (Maslach et al., 2001, p. 399), and by the severity of their symptoms guided by the description and categorization of Schaufeli and Enzmann (1998): affective, cognitive, physical, behavioural and motivational. In total, seven coaches were evaluated to have experienced high levels of exhaustion. For ethical considerations, and due to the chronic nature of burnout (Shirom, 2005) the preliminary interview also focused on the coaches' overall well-being at the time. The aforementioned criteria for exhaustion and symptoms were used, with all the coaches being evaluated as low in exhaustion and experiencing few associated symptoms. Seven coaches were subsequently subject to a second interview. Due to the coaches experiencing directly different challenges in their work, three coaches were excluded to ensure a more homogeneous purposive sample (Patton, 2002). For example, one of the excluded coaches was working in a sport involving animals, which involved so many different and immersive challenges beyond the coaching job itself. Further, the story of two other coaches who worked part-time were largely concerned with holding two different jobs at the same time. As the current study aimed to examine the burnout processes in the context of professional sport, and not about the demands in different work settings, these coaches were also excluded. The remaining four coaches were professional and worked full-time. Even though two of these coaches worked as head coaches and two of them as assistants, they all fulfilled the aim of the study to explore the challenges of professional coaches and their perception of their own burnout process.

Participants

The participants were four professional coaches, three from individual sports and one from team sport. Two coaches worked at the national team level, while the other two worked at elite-level clubs. One coach had only female athletes, one coach only male athletes while two coaches coached both males and females. One coach worked in a Danish sports organization while the remaining coaches were employed by Norwegian sports organizations. The participants' ages ranged from 24 to 35 years ($M = 31.25$, $SD = 4.99$). The total years of experience as professional coaches ranged from two to 14 ($M = 8$, $SD = 5.16$). All four coaches had experienced formal coach education through their respective sports federations, whilst three of them held bachelor degrees in pedagogy, coaching and physiotherapy respectively. Within the results section, the data have been anonymized; thus using the pseudonyms Tom, Michael, Harry, and Steve.

Interview guide and procedures

The semi-structured interviews were conducted according to ethical guidelines established by Patton (2002). The interview guide was developed based on previous research on coaches and burnout, and contained six sections: (1) introduction and demography; (2) why each wanted to work as a coach; (3) the exhaustion process; (4) issues of work and management during the exhaustion process; (5) handling symptoms in connection with the exhaustion process; and (6) the motivation to continue coaching (the interview guide is available upon request). Despite this structure, a natural flow of the conversation made the interview flexible in terms of changing the order of questions and probe areas as the participants told their respective stories. Although one could question the trustworthiness of the data based on the assumption that memory changes over time (Morrow, 2005), research in medical care has shown that a period of illness leaves traces in people's lives that they are vividly able to remember (Storli, Lindseth, & Asplund, 2008). Two pilot interviews were undertaken, one with a young coach who had experienced conflict and exhaustion, and another with a more experienced coach with extensive experience of adversity and success. The pilot process enabled us to identify possible problematic phrases and overlapping questions. Some adjustments to the final interview guide were made. All interviews were conducted by the first author, and had an average duration of 93 minutes. Three of the interviews were conducted at the workplace of the interviewer, with a fourth taking place at a neutral sport organization. The first author has previously worked as a health care provider in medical and psychiatric rehabilitation with considerable experience in individual patient counselling. This experience was important in creating a conducive environment for the participants to openly share their experiences of fatigue, exhaustion and burnout (Patton, 2002).

Data analysis

Data were transcribed verbatim, resulting in 72 pages of single-spaced raw text. These data were organized by using the qualitative analysis software MAXQDA for manual coding. Subsequent content analysis was conducted in three stages. First, the analytic coding was deductively organized by the themes in the interview guide. This analytic approach is described as direct content analysis, where the higher order themes 'Perception of work environment', 'Exhaustion processes', and 'Burnout symptoms' were discussed and agreed by the research team before starting the coding. The goal of direct content analysis was to validate or extend already existing theory, and help determine the initial coding

scheme (Hsieh & Shannon, 2005). The second stage of analysis used an inductive approach that involved the systematic classification process of subjectively coding and identifying themes or patterns in the data (Hsieh & Shannon, 2005). Data that were already organized into higher order categories were now organized into lower order themes (Patton, 2002). This step could be described as conventional content analysis (Hsieh & Shannon, 2005). In the third and final stage, all the lower order themes were re-grouped with those of similar meanings into (again) higher order themes as displayed in the results. In an effort to counteract possible biases within the process of qualitative analysis (Patton, 2002; Watt, 2007) all members of the research team contributed to triangulation, thus increasing the trustworthiness and credibility of the findings (Thurmond, 2001). The analysis continued until the authors agreed on all themes.

Results

The content analysis revealed three main sections which could describe the burnout process for the coaches, namely: (1) Coaches' perceptions of the work environment; (2) Consequences of the perceived work environment, needs thwarting and shift in quality of motivation; and (3) Symptoms of the burnout process.

Coaches' perceptions of the work environment

When analysing the data to identify the onset of the burnout process within the work environment, two general dimensions were revealed: Coaches' perceptions of their sports organization (Table 1), and coaches' perceptions of their everyday work environment (Table 2).

Table 1. Step 1: Coaches' perceptions of the sports organization.

Higher order themes	Low order themes
Top management	Reduced knowledge about sport, Non-professional organization – Lack of competence and experience dealing with personnel management – Non-present – Did not handle conflicts – Conflict – Lack social support – Decreased quality communication and cooperation
Leader	Lack feedback on job – Lack support – Lack involvement – Decreased quality communication and cooperation – Conflict
Lack external resources	Bad economy – Lack coaching staff – Lack administrative help
Performance expectancy	Organization wants results 'now'

Table 2. Step 2: Coaches' perceptions of their work.

High order theme	Low order themes
Workload	High – 'Self-imposed' – Often behind on work tasks – Lack experience – Unclear work tasks – Unprepared for What expected in job – Too many tasks – Too complicated tasks – Lack control
Collaboration colleagues	Conflict – Did not receive help – Quality communication and cooperation within team decreased
Working with athletes	Fun, Quality relationship shifting throughout season
Performance athletes	Good results – Good results as a group – Bad results – Stagnation athletes – Injuries athletes

Coaches' perception of the sport organization

The coaches' main challenges pertained to their organization, more specifically to relationship issues with their line managers and top management. All four coaches experienced their organization as non-professional, based on how they handled their employees and the lack of sport-specific knowledge regarding the elite level:

We were winning medals at an international level, but we had to deal with a board of volunteer leaders who knew little about sport at that level. They interfered in how we did our work and with the responsibilities we were given as coaches. It was very frustrating. (Steve)

All the coaches experienced an absence of presence from the top management, a lack of guidance, the inability to discuss important matters related to their job, and little direction as to what was expected of them in their coaching positions. This was perceived as a lack of support and indifference to the work they were doing. In addition, three of the coaches also experienced being in conflict with top management. 'I had a feeling of fighting more against my own organization than against the other countries we competed against. That was just a frightening feeling' (Steve).

When it came to the coaches' perception of their relationship with their 'leader' or immediate superior, they all felt a lack of support, while some also felt a lack of feedback and involvement. One coach felt lonely in his job, and that he was largely left to his own devices without the proper support or guidance:

They just closed their eyes, and were satisfied by having a lunatic who was willing to work 24-7. They were experienced and should have known that working so hard was not sustainable over time. (Harry)

Coaches' perceptions of their everyday work environment

All coaches reported a high degree of workload. Three of them, however, stated that this was often 'self-imposed', since they wanted to do a good job, or that they had a kind of job where the work assignments 'never end'. Additionally, some of the coaches had only a few years of experience at the elite level which resulted in them trying to compensate by working longer hours. All the coaches agreed that they felt they were constantly behind on work tasks. Overall, they considered themselves unprepared for the job and the challenges they were facing, which made them feel incompetent and lacking in control. In addition, a lack of external and internal resources also contributed to the perception of a high and demanding workload:

I was alone at the training camp with three athletes. Coaches from other national teams laughed at me. Kazakhstan, which is really not the biggest nation in this sport, even they had four coaches. And there I was, all alone, with my three athletes, totally inexperienced, and I had never been in that location before and had to figure it all out on my own. I remember I got up at five in the morning and went to bed at two in the morning. (Michael)

In contrast, a high order theme showing consistent findings was the coaches' positive experiences of working with their athletes. Even though they gradually felt more and more exhausted, they still found joy working with their athletes:

'It was amazing working with the athletes' (Michael); 'Looking back at the causes of exhaustion, it had nothing to do with working with the athletes' (Tom); 'It is hard to explain why, but it is something when you are out there on the field, 20 × 40 meters, you are just there in the present moment, there is nothing else' (Harry).

Consequences of perceived work environment

Two considerations were evident under this themed heading; needs thwarting and a shift in quality of motivation.

Needs thwarting

In sum, all four coaches experienced a thwarting of their needs for autonomy and relatedness, while three of the coaches experienced a thwarting of their need for competence and one experienced a reduction in competence need satisfaction. Several coaches experienced conflict in their work environment. As an example, one head coach experienced conflict with both the management and a colleague. To 'solve' the conflict, the management decided to limit the head coach's responsibility to the elite athletes, and excluded his previous responsibility to work with the overall training philosophy within the club. With this 'solution', he did not have to meet the coach that he was in conflict with. Consequently, the coach felt he was degraded to the level of a 'regular' coach, as opposed to the head coach of the club. For him, an important and valuable part of the job was to make sure that the overall training philosophy of the club was carried out at all levels thus guiding the other coaches was a part of his work assignment. In this regard, he felt obstructed in his need for autonomy and competence, as he was no longer able to do the job he was originally hired to do:

As head coach for a club, you have responsibility for more than just a group of athletes. They took away some of my work assignments. I was supposed to guide the other coaches. During the fall and winter I have looked at myself as just a coach. I was no longer a person who took part in running a club. (Tom)

Interestingly, the results indicate that both good and poor performance could lead to psychological needs thwarting:

We had amazing results and were leading in Europe at that time. Something we absolutely had not been earlier. And we got an enormous recognition from many places, but not internally in our own organization. On the contrary, something strange happened; our problems grew bigger. (Steve)

Steve further explained this scenario by the increased recognition, status and media coverage that followed the achieved success. 'When we weren't as good, there were not that many who cared, at that time we could work without any distractions' (Steve). After achieving good international results, the top management wanted to control how the coaches did their job to a greater extent. As a consequence, Steve's needs for autonomy and relatedness were thwarted despite experiencing normative success. On the other hand, an assistant coach explained how poor performance led to needs thwarting. As the season advanced, and the team did not perform as expected, the head coach where he worked became more arbitrary in his decisions and took to handling most of the coaching duties himself. This resulted in a change in work assignments for the assistant coach, where he gradually experienced limited athlete contact and increased logistical work. Since he was most passionate about working directly with the athletes, this became frustrating. The collaboration and communication within the coaching team obviously declined. The coach felt that the change in work tasks led to the thwarting of all three basic psychological needs, and especially the need for competence:

It is a humiliating feeling. You feel you have the competence; you feel there is something that should have been done differently [about practice athletes]. But the head coach does not use

your competence, and then I don't feel competent any more in what I am doing. Why doesn't he use me more in coaching? You really start to doubt yourself. (Michael)

The lack of support from 'leaders' and top management had first and foremost negative effects on the need for relatedness. Several of the coaches experienced both conflict and an absence of leadership. These situations led to a decrease in collaboration and communication with the coaches feeling that they did not get the support they needed. 'I thought that if you worked in the same organization, you collaborated and treated each other respectfully. I was naive. There is no doubt about that' (Steve).

As mentioned, several factors affected the perceived workload. The coaches described that as the workload increased, they did not feel in control of their job, but that the job 'owned them'. The overwhelming workload led to a feeling of not being able to master the situation, and that they were not competent enough at or for the job. One coach described it as follows: 'I had a feeling of being stressed all the time, the feeling of running behind on work tasks and most of all the feeling of lacking control of my own time' (Harry).

Shift in quality of motivation

When asked as to why they initially wanted to work as coaches, their answers could be categorized into autonomous reasons;

'Coaching is fun, evolving, and challenging' (Harry); 'I never did it [work many hours as coach] because others should think I was a good coach. I just did it because I thought it was awesome' (Michael). 'Because it is a really fun job' (Steve).

However, the situations leading to perceptions of needs thwarting also affected the coaches' initial autonomous motivation in a negative manner. Results strongly indicated a shift from autonomous motivation to controlled motivation for all four coaches. They stated that the work felt more and more like '*a job that just had to be done*'.

'It was not fun going to work anymore' (Steve); 'As a coach, you have an independent position, with a great degree of autonomy. That does not mean that I am a "solo player", I like to work in teams. But it is important for me that I can do my job without interference from people outside. If that happens, my motivation toward my job becomes affected' (Harry); 'I felt what I did was meaningless. That is a good word. Why am I doing this? Why do I wear myself out when I could have had an ordinary, nine to five job? I started to question whether this was something I wanted to do for the rest of my life. I started to doubt it' (Michael).

Symptoms of the burnout process

Results also indicated that the coaches experienced a wide variety of symptoms related to the process of burnout (see Table 3), both at the individual and interpersonal level. Even though all coaches experienced symptoms from all the categories, they were all unique in terms of what kind of symptoms they experienced. One of the most commonly reported symptoms was sleep disturbance. Impaired sleep has previously been found to be a symptom of burnout, and has been considered as playing a key role in the development of exhaustion (Ekstedt et al., 2006).

All the coaches in the study experienced exhaustion as delineated in the inclusion criterion for participating in the study.

At a certain point of time I could not get out of bed [...] No energy, very dark mind. I had an overwhelming feeling of powerlessness. Felt that things [at work] had just piled up and I just had to shut it out. (Harry)

Table 3. Symptoms of the burnout process, individual and interpersonal levels.

Individual level	
Affective signals	Depressed mood – Sadness – Exhaustion – Anxiety
Cognitive signals	Loss of meaning – Feeling of powerlessness – Dissatisfaction – Feeling of no control – Apathetic – Felt stressed – Felt lonely – Inability to concentrate – Difficulties with complex tasks – Difficulties completing easy tasks
Physical signals	Dizziness – Sleep disturbances – Shivering – Fatigue – Reduced physical shape – ‘Break down’ physically – Bed rest – Felt stressed all the time – Attacks of sweating
Behavioural signals	Not capable of ‘doing’ – Without initiative – Quitted own recreational activities – Got more quiet – Cut down on work assignment
Interpersonal level	
Affective signals	Irritability – Annoyed
Cognitive signals	Negativism towards leader – Rumination – Frustration towards family
Behavioural	Unprepared for practice – Not ‘mentally’ present at practice – Lower effort work – Less available to athletes – More often annoyed – Easier annoyed – Came in late to practice – Reduced time spent with athletes – Decreased quality communication with athletes – Less feedback to athletes – Less variation at practice – Avoid boss – Avoid colleagues – Decreased work accomplishment – Spoke ill of colleagues – Defame – Withdrawal
Behavioural signals	Not capable of ‘doing’ – Without initiative – Quitted own recreational activities – Got more quiet – Cut down on work assignment

All of the coaches also experienced signs of cynicism towards their organization, although they did not fulfil the criteria of cynicism when it came to their relationship towards their athletes.

At the time the workload was worst, I felt really bad. Then I started to cut down on work assignments, because I was fed up. It led to a reduced workload, but the frustrations grew bigger. (Steve)

My connection with the athletes was unchanged, I think, but my relationship towards the board and different committees was affected. (Harry)

The feeling of reduced personal accomplishment was experienced by all coaches, especially towards their organizational work tasks. Their work assignments towards their athletes were affected, though to a lesser extent. ‘If I look into my book [coaching diary] for January and February, there are many hours of practice without me talking to the athletes. Have just been sitting there watching and yelling “*ready – go, stop*”. Nothing else’ (Tom).

Discussion

The results revealed that the negative process leading to burnout could be described in three conceptually different stages: (1) The coaches’ experiences of their sport organization and their everyday work environment led to; (2) the experience of needs thwarting and a shift in quality of motivation; which in turn (3) were associated with all three dimensions of burnout. These results fit the description of the SDT-process model at work (Gagné & Deci, 2005).

Work contextual variables – catalysers in the burnout process

The work environment was divided into two general dimensions: the sports organization and everyday work life. These dimensions are on different organizational levels and are

treated independently. For applied reasons, it is important to understand where the contextual variables originate from and their roles in driving the burnout process.

Sporting organizations had a great influence on the coaches' perception of their job and represented a major catalysing factor within the burnout process. The variable that emerged as most challenging was the coaches' relations towards the top management and their leaders. What caused difficulties here were coaches' perceptions of working for what they considered were 'non-professional organizations', both in terms of the limited amount of internal and external resources available and how they were treated as employees. The findings regarding resources are in line with characteristics of Scandinavian sports organizations, having long traditions of being rooted in volunteer work and, hence, remain partly driven on a voluntary basis (Ibsen & Seippel, 2010). Scandinavian countries have also shown to score higher on level of voluntary work in general when compared to other nations (Baer, Curtis, & Grabb, 2001). This implies that members of top-management could be part-time or full-time volunteers, which may be the cause of why they were perceived as non-supportive by the coaches. The absence of leadership experienced by the coaches forced them into a 'un-autonomous' independence, as their leaders did not discuss challenging situations with them or give them direction in their work (Deci & Ryan, 2012). Coaches working for national teams also experienced a negative impact from what they called 'un-professionalism' in the sport organization. They believed that the people who sat on boards and tried to affect their work by overriding their decisions did not know how to coach or how a team should be run. Thus, the coaches felt they were being controlled. Altogether, these findings imply that how coaches are managed is of great importance. Here, managers need to be regularly present and create an adaptive work environment, by offering autonomy support and structure for coaches (Gagné & Deci, 2005).

The coaches' perceptions of what they considered to be inadequate leadership led to conflicts in their environment. Leiter and Maslach (2004) have stated that chronic and unresolved conflicts are one of the most destructive variables leading to burnout. For elite coaches, previous research has shown that conflicts at work are a crucial stressor (Olusoga et al., 2009) and correlate to exhaustion (Stebbins et al., 2012). For example, a study within a Norwegian elite sports organization aimed at exploring conflicts within it concluded that they were caused by different logics; i.e. amateur-volunteer logic, the politico-administrative logic and the business-professional logic (Steen-Johnsen, 2011). Even though these findings were in relation to interactions between boards and top management, similarities regarding the professional coaches' experiences within this study and their sports organizations were evident. It is, therefore, of importance to target this challenge and prevent conflicts by having clear role expectations, both for one's own role and what is legitimate to expect from others (Steen-Johnsen, 2011). Using a micropolitical perspective could yield further insight about how coaches meet challenges in the organizational contexts of sport which are vulnerable to frequently conflicting motivations, ideologies and goals for the individuals engaging in it (Potrac & Jones, 2009; Thompson, Potrac, & Jones, 2013). This would seem to be of particular importance to the coaches in this study, as they experienced considerable challenges at work related to leadership and top management, and not to working directly with their athletes. Indeed, this latter part of their job was perceived as inspirational, motivating, and fun. We argue, therefore, that coaches need better preparation to deal not only with athlete learning, but with the wider political aspects of their work (Potrac & Jones, 2009; Thompson et al., 2013).

Further findings revealed that the workload for the coaches was very high, and became problematic over time (Maslach et al., 2001). However, the coaches did not blame the workload itself to be the fundamental reason for exhaustion. Rather, a range of reasons were

given as to why they had to work so much, such as ‘not being in control’, ‘feeling behind’, ‘lack of experience’, and ‘not perceiving themselves as competent’. These findings provide arguments that corroborate perceived workload as a concept of importance, and captures much more than just work hours (Leiter & Maslach, 2004). However, it should be remembered that the same workload could be perceived differently for different individuals, based on the quality of motivation, levels of exhaustion and energy. Even though the coaches in this study to a large extent said that the workloads were ‘self-imposed’, it is legitimate to raise questions about top management and leaders’ responsibilities in assisting the coaches to be able to proceed with a manageable workload (Hjälml, 2014). As professionalism in Scandinavian sport organizations is increasing (Seippel, 2008), related organizations in their role as employers hold certain responsibilities towards their employees. Furthermore, although all interviewed coaches had the highest degree of coach education within their sport federation, this seemed insufficient to prepare them for the challenges of professional sport. Adequate education is thus needed to prepare coaches for what is expected of them within sport organizations. In this respect, it has been argued that experienced mentors should be used when less experienced coaches enter new expertise levels in their coaching careers (Erickson, Côté, & Fraser-Thomas, 2007).

Athletes’ performances were found to have an influence on the burnout process. Previous studies have shown ambiguous results concerning athletes’ performance and coach burnout. In such cases, both positive associations (Wilson & Bird, 1988) and a lack of relationship (Quigley, Slack, & Smith, 1987) have been reported. Interestingly, the results from the current study indicate that both win and loss records of the athletes seemed to affect the burnout process in a negative manner. An implication here is that only looking at the win-loss record seems to be an over-simplification of the consequences different results might have. Questions about what processes within the organization are catalysed by an expected result, by advancement and relegation should be asked. Findings from the current study indicated and described how success triggered changes in the organization. Here, increased recognition and status made leaders and management more eager to control and interfere with the coaches’ everyday work, which contributed to the burnout process. Further, the results remind us that we have to be aware that good performance is not necessarily an expression of well-being and vitality. Several accounts about elite athletes performing at the highest international levels whilst simultaneously experiencing high degrees of ill-being are evident in the motivational framework of perfectionism, and more specifically maladaptive perfectionism (Hall, Hill, & Appleton, 2012). The overall message may rather be that we need to look at the consequences of the processes of different results to better understand why some coaches’ experience being drained of energy from winning and/or losing. In sum, the negative experiences in the work environment described by the coaches could all fit into the description of a maladaptive work environment described by SDT (Baard, 2002).

Negative change in motivational variables; explanatory variables in the burnout process

Even though the coaches’ experienced individual differences in what was challenging in the maladaptive work environment, there were important similarities evident in their experiences; namely a detrimental effect of their basic psychological needs and quality of motivation. Clearly, all four coaches experienced thwarting of their psychological needs. Research has addressed the heightened negative consequences needs thwarting has, as opposed to a lower degree of need satisfaction (Bartholomew et al., 2011; Stebbings et al., 2012). More specifically, when trying to explain *why* conflict leads to burnout, the

thwarting of psychological needs as an explanatory variable shows promising and trustworthy results (Stebbing et al., 2012).

Some coaches explained that, for a short period, the excessive workload was fine. But, accumulated over time, the workload became unbearable. Previous findings on the quality of motivation in combination with high demands can shed light on these findings. For example, the perception of teachers' work overload over a school year had a negative effect on their quality of motivation, which again was related to their increase in emotional exhaustion (Fernet, Guay, Senécal, & Austin, 2012). Summarized, both needs thwarting and a shift towards a more controlled motivation contributes to the explanation of burnout for professional coaches.

Symptoms of the burnout – process

All four coaches experienced a great variety of symptoms and fulfilled all three criteria of burnout (Maslach et al., 2001). Even though burnout is commonly described as a work-related symptom, the reported symptoms also affected the coaches' private lives in a negative manner. This is similar to other studies who have described how life in general can be negatively affected, by factors such as home interference and depressed mood (Lundkvist et al., 2012). Burnout is a syndrome that first and foremost causes harm to the individual. Not unnaturally, it is obvious that the burnout process also negatively influences athletes and the sports organization. Previous studies have reported that coaches who are exhausted have a reduced ability to coach and to cope with their responsibilities towards their athletes (Kelley, Eklund, & Ritter-Taylor, 1999; Price & Weiss, 2000). This study supports these findings. However, few studies have so far turned their attention to the implications for the sports organizations to have burned-out coaches as employees. Negative consequences found in the current study were, for instance, decreased accomplishment at work, coaches cutting down on work assignments, and a general negativity towards the organization. All four coaches also withdrew from their job once the season ended, which resulted in loss of important competence and continuity for the organization. More studies, however, are needed to better understand the organizational consequences of burned out coaches. Altogether, the current findings underline the seriousness of experiencing burnout for coaches, both for the individual, the athletes in question, for employing organizations and, ultimately, for the limited community of elite coaches.

Conclusion and future research

Current study findings describe how four professional Scandinavian coaches experienced a burnout process that evolved over time. Their stories offer great insight into the challenges coaches are facing, especially those working in the Scandinavian sports context. However, it should be noted that current findings are based on the coaches' perceptions of their process towards burnout, whilst their top managers and leaders might have a different perception. Hence, future studies should triangulate data by simultaneously collecting greater contextual or situational information to get a more nuanced view of the dynamics within the organization (Thurmond, 2001).

The overall findings supported the tenets of the SDT process model. Negative experiences in the work environment led to needs thwarting and a shift in quality of motivation, which seemed to be a serious catalyst to coaches' burnout level. During the negative process of burnout, all the coaches were exhausted and showed symptoms of

cynicism and reduced accomplishment. Findings imply that the symptoms of burnout are not only an outcome of the negative process, but also a part of it. How coaches perceive their environment and the challenges within it are influenced by the quality of their motivation, their energy level, and the relationship with their colleagues. In a cross-sectional design study, symptoms are likely to appear as outcomes. However, current results revealed that the coaches gradually became more and more exhausted, and that this also affected how they perceived their work. In this negative process, there was an accumulation and a reciprocal effect among the different situational and motivational variables described in this study and the symptoms of burnout. All four coaches felt they were caught in a negative spiral that was hard to stop. Results are in line with previous findings of a negative loss spiral, where the variables are shown to have a reciprocal effect on each other (Demerouti et al., 2004). In this process, a shift in the quality of motivation and the experience of needs thwarting appear to be important markers. Future research needs to take this into consideration when designing studies. Monitoring changes in need satisfaction and motivational regulation over a timespan may offer great insight and hold the potential for prevention. Longitudinal design studies are recommended, using several time series measurement. Only then will we be able to grasp the intricacies of the loss spiral process associated with the development of burnout in professional coaches.

Disclosure statement

No potential conflict of interest was reported by the authors.

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PAPER II

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Changes in Motivation and Burnout Indices in High-Performance Coaches
Over The Course of a Competitive Season

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Abstract

Being subject to a great range of demands is believed to increase burnout propensity in high-performance coaches. This study is the first to explore whether the four step self-determination theory process model is a valuable framework to better understand the process influencing burnout and well-being in high-performance coaches ($N = 343$, $M = 40.33$ years) throughout a competitive season. Findings indicated that coaches on average increased in burnout and decreased in well-being. Hypotheses were to a large extent supported: change in perceived environment → change in psychological need satisfaction → change in autonomous motivation → change in burnout and well-being.

Keywords: high-performance coaches, burnout, well-being, SDT process model, needs, motivation

Changes in Motivation and Burnout Indices in High-Performance Coaches Over The Course of a Competitive Season

Coaching in sports is increasing in popularity as a profession for coaches of all performance levels (Duffy et al., 2011). Coaches working with elite athletes are known as high-performance coaches (Lyle, 2002). This profession deals with a high degree of performance related stressors (Hanton, Fletcher, & Coughlan, 2005; Fletcher & Scott, 2010) regarding their own performance (Thelwell, Weston, Greenlees, & Hutchings, 2008) and regarding less controllable stressors such as the performance of their athletes (Hanton et al., 2005). Organizational stressors for coaches include inadequate leadership within their own organization, excessive administrative tasks, high-perceived work overload, challenges associated with need to balance work and private life, as well as team related stressors (Rhind, Scott, & Fletcher, 2013; Thelwell, et al., 2008). Many high-performance coaches have long and irregular work hours, a heavy travel load, short contracts, low job security (Altfeld & Kellmann, 2013; Lundkvist, Gustafsson, Hjälml, & Hassmen, 2012; Rhind et al., 2013), they have to respond to media, fans, and sponsors (Fletcher & Scott, 2010; Rhind et al., 2013), and they risk getting fired if performance expectations are not met (Arnulf, Mathisen, & Haerem, 2012). These working conditions are believed to increase the risk for burnout in high-performance coaches (Hjälml, Kenttä, Hassmén, & Gustafsson, 2007; Lundkvist et al., 2012; Olusoga, Butt, Maynard, & Hays, 2010), but researchers have called for longitudinal studies to better understand the effect of working conditions for high-performance coaches over time (Altfeld & Kellmann, 2013; Goodger, Gorely, Lavalley, & Harwood, 2007; Raedeke & Kenttä, 2013).

Burnout is the result of a prolonged exposure to high work related demands in relation to the individual's resources (Maslach & Schaufeli, 1993), and consists of three dimensions; emotional exhaustion, cynicism, and a reduced sense of accomplishment (Maslach & Leiter,

2008). Emotional exhaustion is often described as the key characteristic of burnout, where a person feels exhausted and drained. Cynicism is characterized by a negative attitude and sense of alienation towards one's work, where work is no longer perceived as valuable or interesting (Maslach & Leiter, 2008). Reduced sense of personal accomplishment refers to feeling inadequate at work, experiencing poor professional self-esteem, and having a general negative work evaluation (Maslach, 2003). Burnout is a process that evolves over time (Fernet, Guay, Senecal, & Austin, 2012). The longer time-perspective is also implied in the term burning out (i.e., depletion one's resources) (Maslach & Schaufeli, 1993). Scholars do not specify the actual timespan on this process, though it is assumed that there are individual differences depending on how large the gap is between the demands and the resources. Further, there are different opinions on how the three dimensions of burnout develop and predict one another (Taris, Le Blanc, Schaufeli, & Schreurs, 2005), but researchers generally agree that the three burnout dimensions are likely to develop somewhat differently and should be studied independently (Fernet et al., 2012; Maslach, 2003; Taris et al., 2005). As coaches deal with different demands over the course of a season, there is a need for studies on how burnout develops within sport-specific cycles of a season (Altfeld & Kellmann, 2013). The only longitudinal study conducted so far on coach burnout revealed that exhaustion levels increased throughout a competitive season (Raedeke, 2004). Important individual differences are to be expected, and studying change in burnout on an intraindividual level would address individual differences in burnout over time (Fernet et al., 2012).

So far, no study has looked at how high-performance coaches may differ in developing burnout symptoms over time (Altfeld & Kellmann, 2013; Goodger et al., 2007; Raedeke & Kenttä, 2013). While some cross-sectional studies have investigated possible causes and correlates of burnout, research has primarily been limited to a cognitive affective model of sport framework (Smith, 1986), using a stress-perspective to explain burnout

(Kelley, Eklund, & Ritter-Taylor, 1999; Vealey, Udry, Zimmerman, & Soliday, 1992). This approach is based on the assumption that burnout is the result of imbalance between personal and/or situational variables and the person's resources, which creates a stress appraisal that serves as a mediator within this relationship. Contextual variables of interest are low social support and role conflict (Kelley & Gill, 1993). Thus far, individual variables found to be related to burnout have been gender, experience (Kelley & Gill, 1993), anxiety (Vealey et al., 1992; Kelley et al., 1999), hardiness (Kelley et al., 1999), and perfectionism (Tashman, Tenenbaum, & Eklund, 2010). However, the stress-perspective might not sufficiently explain the development of burnout, as the drive and energizing force of individuals should be preferred when examining the process linked to burning out (Gould, 1996; Pines & Aronson, 1983). Pines explains that: "While everyone can experience stress, burnout can only be experienced by people who entered their careers with high expectations, goals, and motivation—people who expected to derive a sense of significance from their work" (Pines, 1993, p. 38). High-performance coaches tend to be highly passionate about and dedicated to their work and sport (McClean & Mallett, 2012; McClean, Mallett, & Newcombe, 2012). Thus investigating coach burnout is highly intuitive from a motivational perspective, and some studies have emerged using the Self-Determination Theory (SDT) (Ryan & Deci, 2002) as a theoretical framework to explain the process and predict differentiated levels of burnout (McClean et al., 2012; Stebbings, Taylor, Spray, & Ntoumanis, 2012; Sullivan, Lonsdale, & Taylor, 2014).

The SDT process model (Williams, McGregor, Zeldman, Freedman, & Deci, 2004) explains what happens between the individual's interactions with the environment to the outcomes experienced. As the term 'process model' indicates, the steps in the process sequentially predict one another and are as follows: Perceived environment → basic psychological needs → quality of motivation → outcomes. Several studies have explored

how either basic psychological needs (Fernet, Austin, Trepanier, & Dussault, 2013; Van den Broeck, Vansteenkiste, De Witte, & Lens, 2008) or quality of motivation (Fernet et al., 2012) may mediate the relationship between perceived environmental factors and burnout. So far, only one study has been conducted using the four step SDT process model in relation to work in sports and burnout (Sullivan et al., 2014), however data was cross-sectional and the study was limited in its ability to examine change.

SDT describes how different perceptions of the work environment can either promote or undermine well-being for employees (Deci & Ryan, 2000). An autonomy supportive environment is characterized by leaders who understand and acknowledge the coach's perspectives, provide a meaningful rationale for work tasks that might not be of immediate interest to the coach, offering opportunities for individual choices and minimizing performance pressure (Deci & Ryan, 2000; Ryan & Deci, 2002). A controlling environment will typically have a leader who overrules coaches' decisions, puts constraints on how they can behave, imposes goals, sets time restraints, imposes contingent rewards or pressure, and increases workload beyond reason (Deci & Ryan, 2000; Fernet et al., 2013; Gagné & Deci, 2005). Autonomy supportive environments promote basic psychological needs satisfaction in coaches and foster a healthy psychological balance. A controlling environment will likely challenge the satisfaction of those needs and thwart the process to achieve a healthy balance (Deci & Ryan, 2000; Ryan & Deci, 2002). Within sports, an autonomy supportive environment has been shown to predict satisfaction of basic needs in athletic directors independently from their workload (Sullivan et al., 2014). However, workload has been a frequent predictor for burnout, where the critical point occurs when coaches are unable to recover from work demands (Leiter & Maslach, 2004; Maslach & Leiter, 2008). Two SDT based organizational studies have demonstrated that higher levels of work demands (e.g.,

workload) are negatively related to basic psychological needs satisfaction and positively related to exhaustion (Fernet et al., 2013; Van den Broeck et al., 2008).

In the process model, the fulfillment of the basic psychological needs for autonomy (e.g., having ownership over one's behavior and being able to make choices and decisions), competence (e.g., effective behavior that leads to intended outcomes), and relatedness (e.g., the desire to achieve a sense of communion and belongingness) is considered essential for the development and maintenance of psychological well-being (Deci & Ryan, 2000).

Additionally, psychological needs fulfillment leads to a greater internalization of motivation (Ryan & Deci, 2002). Coaches who perceive their three basic psychological needs to be fulfilled will likely feel in charge of their own destiny, capable and competent to deliver in line with expectations, and they will likely feel that they share a meaningful relationship with their co-workers. The degree of basic psychological needs fulfillment is key to the study of the development of burnout as satisfaction of the three psychological needs is the source of energy, direction, and adherence to the behavior of coaches at work (Gagné & Deci, 2005).

Accordingly, differentiated levels of need satisfaction will directly enhance or hamper psychological and physical well-being (Deci & Ryan, 2000). Struggles to fulfill coaches' psychological needs will typically drain their energy over time, increasing risk for exhaustion and burnout (Fernet et al., 2013). A lower degree of basic psychological needs fulfillment has been reported to predict exhaustion and has been found to be a mediator between demanding work situations and feeling exhausted (Van den Broeck et al., 2008). Past studies have been inconclusive about the unique contribution of each of the three psychological needs on all three burnout dimensions. For example, in a study of school board employees, autonomy need fulfillment was negatively related to exhaustion and depersonalization (cynicism), relatedness was negatively related to depersonalization and positively related to personal accomplishment, and competence was positively related to personal accomplishment (Fernet

et al., 2013). In a study of athletic directors, only the need for competence was associated with all three burnout dimensions, but was mediated through motivation (Sullivan et al., 2014). These studies suggest the possible independent contribution of each of the three needs on changes in each of the three burnout dimensions. These respective patterns have not been examined in previous research related to the process of burnout in coaches.

The third step of the process model describes different qualities of motivation. Coaches are involved in coaching for various reasons, and these reasons can be categorized into different motivational regulations characterized by their level of relative autonomy (Deci & Ryan, 2000). To simplify, motivational regulations can be termed autonomous versus controlled (Gunnell, Crocker, Mack, Wilson, & Zumbo, 2014; Solberg, Halvari & Ommundsen, 2013). Autonomous motivation refers to initiating an activity for its own sake because it is interesting and satisfying. Autonomously motivated coaches find working closely with athletes enjoyable and interesting, and may, for example, participate in a course to enhance their knowledge about recovery of sport injuries because they find that valuable and of importance (McClean et al., 2012). When a coach is engaging in activities for autonomous reasons, the activity will be done with high energy, as it is an integrated part of who the coach is, and will more likely lead to excitement, interest, good psychological health, and high levels of performance and persistence (McClean et al., 2012). Controlled motivation refers to participating in activities because of external demands or reward (Ryan & Deci, 2002). For example, coaches can do their job to get attention and recognition through public appearance and media, or attend a course for accreditation (McClean et al., 2012). Being driven by controlled motivation over time has been found to drain energy and promote ill-being, as these activities are not done of free will and are not integrated within the coaches' self (Ryan & Deci, 2002). Thus far, studies using cross-sectional designs on sub-elite populations have reported a negative relationship between self-determined motivation and burnout, and a

positive relationship between less-self-determined motivation and burnout among coaches (McClean et al., 2012) and athletic directors (Sullivan et al., 2014). Moreover, a study using intraindividual change over a school year found that changes in teachers' perception of classroom overload and students' disruptive behavior were negatively related to changes in autonomous motivation, which in turn negatively predicted changes in exhaustion (Fernet et al., 2012). Additionally, Sullivan et al. (2014) examined how quality of motivation served as a mediating variable to explain additional predictive effects between psychological needs and burnout dimensions, though no previous studies have examined this with intraindividual changes.

Researchers who aim to better understand what predicts burnout will want to apply this understanding and eliminate, reduce, or prevent correlates and causes of burnout. Though, in order to better understand and facilitate well-being, it is important to focus not only on repairing damage within a disease model of human functioning (Seligman & Csikszentmihalyi, 2000). Research has successfully embraced this idea and provided evidence on the feeling of engagement as an antipode of burnout (e.g., Van den Broeck et al., 2008). Though, as engagement and motivation have clear relations (Meyer, 2014), engagement as an outcome will be redundant when motivation is argued to be a mediator in the same model. Two concepts that represent hedonic well-being (happiness) and eudemonic well-being (human potential) (Ryan & Deci, 2001) are satisfaction with life and vitality. Satisfaction with life is a central indicator for hedonic well-being and is defined as "a global assessment of a person's quality of life according to his chosen criteria" (Shin & Johnson, 1978, p. 478). Vitality represents eudemonic well-being, reflecting the energy available to the self of the individual (Ryan & Frederick, 1997).

The current study explores whether the four step SDT process model (Williams et al., 2004) is suitable to explain the process towards burnout and well-being among high-

performance coaches over a competitive season. It is anticipated that coaches experience increased burnout and decreased well-being during this time span. It is also anticipated that there will be individual differences in the development of burnout and well-being, and the SDT process model will be tested with intraindividual changes. Consequently, the term *change* in variables is used, rather than *increase* or *decrease*, and further it is the direction of the relationship between the changes of the variables that is of interest (positive or negative). Previous research showed that a high degree of performance pressure influences coaches' propensity to burnout, and so perceived goal attainment is added as a control variable (Lundkvist et al., 2012). In figure 1, a proposed process model illustrates the hypotheses in the current study, where all direct and indirect pathways illustrated will be examined.

Method

Study Design, Participation Recruitment and Participants

The current study had a longitudinal design, where participants were asked to answer on an online questionnaire three weeks before the beginning of their competitive season (T1) and three weeks before the end of competitive season (T2).

High-performance coaches coaching athletes at the highest national level within their sport (15 sports in Norway; nine sports in Sweden), were recruited with the assistance of their respective national sport federations. Information about the study, a letter of recommendation for participation in the study from the relevant sport federations, and ethics approval from the Norwegian Social Science Data Services or The Regional Ethical Review Board in Sweden were sent in an email to all coaches. In total, 853 coaches were invited to participate in the study. At T1, 467 coaches responded (54.7 % response rate) and 343 coaches responded at both T1 and T2 (40.2% response rate).¹ The 343 coaches worked in the following sports:

¹ Data obtained for this investigation was part of a larger study, longitudinally examining the process of burnout among high-performance coaches with three measurement points throughout a competitive season

soccer (N = 91) , track and field (N = 39), biathlon (N = 37), swimming (N = 32), handball (N = 31), cross country skiing (N = 25), orienteering (N = 16), ice-hockey (N = 15), volleyball (N = 14), basketball (N = 13), ski jumping (N = 9), skating (N = 8), alpine (N = 8), Nordic combined (N = 3) and telemark skiing (N = 2).² All participants provided written informed consent prior to the study.

Measures

Demographics were measured at T1; Perceived goal attainment was measured at T2; all other variables were measured at both time points. The questionnaire could be answered in Norwegian, Swedish, or English. For the English questionnaire, the original versions were used. For Norwegian and Swedish questionnaires, translated and validated questionnaires were used if available, if unavailable, translation-back-translation method was used (Duda & Hayashi, 1998). All questionnaires, except the Maslach Burnout Inventory and perceived goal attainment, were answered on a 7-point Likert-scale ranging from 1 (*strongly disagree*) to seven (*strongly agree*).

Perceived goal attainment. Objective measures of goal attainment do not take into account differentiated and individual goal setting for a team / athletes. Perceived goal attainment was measured at T2, where the coaches were asked to look back at the start of the

(start, mid and end). Some of the same participants are used in a different manuscript (Development of Exhaustion for High-Performance Coaches in Association with Workload and Motivation: A Person-Centered Approach). This sample uses data from all three time-points, and due to a higher dropout rate this sample was smaller (N = 299) than the sample used in the current study. Some of the same variables are used, though not as residual change scores: workload, four specific motivational regulations (intrinsic, identified, introjected and external) and exhaustion. Additionally, this manuscript used other variables: work-home interference, relaxation, and psychological detachment.

² Data for these sports were only collected in Norway: Cross country skiing, Skating (speed and figure), Alpine skiing, Nordic combined, and Telemark skiing.

season and write down what had been their two most important goals for that season (Sheldon & Houser-Marko, 2001). For each goal they were asked: “To what extent do you perceive that goal number 1 has been reached” and rate this on a 7-point Likert-scale ranging from 1 (*Not at all*) to 7 (*To a large extent*). Perceived goal attainment was defined by the sum score of the two answers.

Workload. Workload was assessed with the subscale Workload from *The Areas of Work Life Scale* with 6-items (AWLS: Leiter & Maslach, 2004). The AWLS was developed to measure a match or a mismatch between work environment and the individual. An example of items was: “I do not have time to do the work that must be done” ($\alpha_{\text{time1}} = .75$; $\alpha_{\text{time2}} = .79$). The scale was reversed, so higher scores indicated a higher perceived workload. The AWLS was previously used in a sport setting, showing acceptable internal validity of its different subscales including workload ($\alpha = .78-.90$; DeFreese & Smith, 2013).

Perceived autonomy support. Sports organizations are heterogeneous in terms of organization and management, depending on the sport, performance levels, and resources of the club. As coaches are accountable to various managers, participants were asked to base their answers about leadership to ‘your closest leader.’ Perceived autonomy support from the coaches’ closest leader was measured with an adapted version of the Health Care Climate Questionnaire (HCCQ: Williams, Grow, Freedman, Ryan, & Deci, 1996), which is an 8-item version of the questionnaire previously used in Norway and demonstrating acceptable internal consistency (α : .90, .91; Solberg, Hopkins, Ommundsen, & Halvari, 2012). The term *my boss* was used; for example, “I feel that my boss cares about me as a person” and “I feel a lot of trust in my boss” ($\alpha_{\text{time1}} = .93$; $\alpha_{\text{time2}} = .95$).

Psychological need satisfaction at work. Need satisfaction was measured with the 18-item Basic Needs Satisfaction at Work scale (BNSW; Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens, 2010). This scale has shown acceptable internal reliability for

autonomy, competence, and relatedness (α : .85, .86, and .86; Vander Elst, Van den Broeck, De Witte, & De Cuyper, 2012). The need for autonomy was measured by six items (e.g., “I feel free to do my job the way I think it could best be done”; $\alpha_{\text{time1}} = .75$; $\alpha_{\text{time2}} = .77$). The need for competence was measured by four items (e.g., “I feel competent at my job”; $\alpha_{\text{time1}} = .87$; $\alpha_{\text{time2}} = .90$). The need for relatedness was measured by six items (e.g., “At work, I can talk with people about things that really matter to me”; $\alpha_{\text{time1}} = .80$; $\alpha_{\text{time2}} = .81$).

Motivation. Motivation was measured by subscales of the Self-Regulation Questionnaire at Work, which is validated in Norwegian (MAWS; Gagné et al., 2010; Gagné et al., 2014). Aggregation of autonomous and controlled motivation was conducted in line with suggestions (Gagné et al., 2010, p. 632). Autonomous motivation was measured by the sum score of three intrinsic regulation items (e.g., “Because I have fun doing my job”), four integrated regulation items (e.g., “Because it has become a natural habit for me”), and three identified regulation items (e.g., “Because I personally consider it important to put effort into this job”; $\alpha_{\text{time1}} = .80$; $\alpha_{\text{time2}} = .82$). Controlled motivation was measured by the sum score of four introjected regulation items (e.g., “Because I have to prove to myself that I can”), three external regulation materialistic items (e.g., “Because others will reward me financially only if I put enough effort in my job”), and external regulation social items (e.g., “To get others’ approval”; $\alpha_{\text{time1}} = .80$; $\alpha_{\text{time2}} = .76$).

Burnout. Burnout was measured with the Maslach Burnout Inventory-General scale (MBI-GS; Schaufeli, Leiter, Maslach, & Jackson, 1996), consisting of three subscales. Exhaustion was measured with five items (e.g., “I feel emotionally drained from my work”; $\alpha_{\text{time1}} = .85$; $\alpha_{\text{time2}} = .88$); cynicism was measured with five items (e.g., “I have become less interested in my work since I started this job”; $\alpha_{\text{time1}} = .63$; $\alpha_{\text{time2}} = .75$); and personal accomplishment was measured with six items (e.g., “I can effectively solve the problems that arise in my work”; $\alpha_{\text{time1}} = .79$; $\alpha_{\text{time2}} = .83$). This latter subscale was reversed and labeled

“Reduced Personal Accomplishment.” Cynicism showed relatively low internal consistency at T1 but the scale was kept in its original form for conceptual reasons and as internal consistency above .60 has been deemed acceptable in previous studies (Dekovic, Janssens, & Gerris, 1991; Holden, Fekken, & Cotton, 1991). The Norwegian version of the MBI-GS has previously shown acceptable internal consistency across occupational groups and over time (Richardson & Martinussen, 2005). Participants responded on a 7-point scale as follows: 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*), and 6 (*every day*).

Vitality. Vitality was measured with the 6-items Subjective Vitality Scale (Ryan & Frederick, 1997; e.g., “I feel alive and vital”; $\alpha_{\text{time1}} = .91$; $\alpha_{\text{time2}} = .93$). Participants were asked to answer based on how they had felt for the last four weeks. This scale has previously shown good alpha reliability in a study in Norway ($\alpha = .91, -.93$; Solberg et al., 2012).

Satisfaction with work. Satisfaction was measured with an adapted version of the 5-items Satisfaction with Life Scale (SWLS: Diener, Emmons, Larsen, & Griffin, 1985). “In most ways my work-life is close to my ideal” was used rather than the original “In most ways my life is close to my ideal” ($\alpha_{\text{time1}} = .80$; $\alpha_{\text{time2}} = .83$). Participants responded based on how they had felt in general over the previous four weeks. This scale has previously shown acceptable alpha reliability in a study in Norway ($\alpha = .82$; Solberg et al., 2013).

Data Analysis

At T1, 467 coaches responded (54.7 % response rate) and 343 coaches responded at both T1 and T2 (40.2% response rate). The dropout rate from T1 to T2 was 27.0 %. Little’s MCAR test on missing data run using IBM SPSS 21 showed that the data were completely missing at random ($\chi^2 = 80.272$, $df = 96$, $p = 0.876$). Further, dropout analyses were conducted to test for differences between those participating at T1 ($n = 124$) versus those participating both at T1 and T2 ($n = 343$) for all study variables with independent sample t

test, and no significant differences were found. An attempt to use multiple imputations was conducted, though the model fit in MPlus indicated an over-fitted model, thus the dataset of $N = 343$ were used in subsequent analyses. The dataset used in this study included 343 coaches who responded to the questionnaire at both T1 and T2, with a maximum 5.2% of data missing at each time point. To obtain a complete dataset, an expectation maximum algorithm (EM) was used in SPSS to impute missing data per subscale for each time point. Estimates of internal consistency score reliability of the scales were conducted in SPSS at each time point on original data. A paired sample t test with eta square for effect size was used to test for changes in study variables on the mean level over the competitive season (T1 – T2). Residualized change scores were then calculated in SPSS by regression Time 2 observed variable on Time 1 observed variable, and saving the unstandardized residual values (Zumbo, 1999). Bivariate correlations were conducted with change scores of study variables and control variables in SPSS. Further, the SPSS data file was transformed into MPlus (MPlus 7.2; Muthén & Muthén, 2012), and the residualized changes scores were used as observed variables in path analyses. Skewness and kurtosis values for all items in the study ranged from $|-2.31 \text{ to } 2.19|$ and $|-1.38 \text{ to } 9.00|$, suggesting normally distributed data (Kline, 2011), so the full structural model was tested with a ML estimator. Further, to test for indirect effects in the model, a bootstrapping method for multiple mediations was conducted with 10000 bootstraps (Preacher & Hayes, 2008). Results from analyses of indirect effects are reported with additional explained variance for each of the specified paths. A combination of fit indices were used to examine and evaluate the degree of model fit with specified criteria for an acceptable fit (Brown, 2006); Comparative Fit Index (CFI) ≥ 0.90 , Tucker–Lewis index (TLI) ≥ 0.90 , Standardized Root Mean Square residual (SRMR) ≤ 0.08 , and Root Mean Square Error of Approximation (RMSEA) ≤ 0.06 .

Results

Preliminary Analyses

The participants' average age was $M = 40.33$ years ($SD = 9.80$, range 21-70 years), and their average experience as a coach was $M = 13.11$ years ($SD = 9.66$, range 1-49). Women comprised 8.7% of the coaches, and men 91.3%. Of all coaches, 57.1% worked in Norway and 42.9% in Sweden, and 47.8% of the coaches worked in team sport and 52.2% in individual sport. As the length of competitive seasons for the different sports ranged from four to 10 months, season length was added as a control variable in relation to change in the burnout dimensions. Additionally, as the preliminary analysis indicated a wide age range of the coaches and as previous studies have found a negative relationship between age and burnout (e.g., Kelley & Gill, 1993), age was added as a control variable. A bivariate correlation matrix was performed to do a preliminary test of the relationship between the change scores of all outcomes and the control variables age, length of season, and perceived goal attainment. Age correlated significantly with change in exhaustion $r(342) = -.15$, change in cynicism $r(342) = -.17$, and change in vitality $r(342) = .18$. Length of season correlated significantly with change in satisfaction with work, $r(342) = -.15$, $p < .01$. Perceived goal attainment at the end of the season correlated significantly with change in reduced personal accomplishment $r(342) = -.11$, $p < .05$, and change in vitality $r(342) = .18$, $p < .01$. Even though these findings were in the expected direction, they were 'no to low' in effect size ($r < .25$, Fraenkel & Wallen, 2000), and consequently they were not included in further analysis.

Main Analyses

Changes in variables over time. To test for changes over the competitive season, paired sample t tests were conducted (Table 1). Results revealed a negative trend for all significant changes, with a decrease in perceived autonomy support, the need for autonomy,

competence and relatedness, vitality, and satisfaction with work. An increase was found for controlled motivation, exhaustion, cynicism, and reduced accomplishment. Correlations between change variables in the study are presented in Table 2. All correlations indicated results as expected, except the results indicating no significant relationships between change in controlled motivation and changes in the outcomes.

Structural model—Testing the process model of change. The hypothesized model was tested using structural equation modeling (fig.2), as previously done by Gunnell et al. (2014). First, a structural path model was specified and tested in MPlus. Covariance between the disturbances terms of change in all three psychological needs was allowed to co-vary based on theoretical assumptions. This model yielded a superior fit to the data: $\chi^2(5) = 5.37$, $p = 0.37$, CFI = 1.00, TLI = 1.00, RMSEA = .02 (90% CI = .00–.08), SRMR = 0.01. A relatively large variance was explain by the model for a majority of the outcomes: 34% in change of exhaustion, 23% in change of cynicism, 25% in change in vitality, 39 % in change in satisfaction of work, and 10% in reduced sense of accomplishment. Further, the results of model were:

Consequences of changes in the environment. Change in workload positively predicted change in exhaustion ($\beta = .45$) and change in cynicism ($\beta = .19$). Further, change in workload negatively predicted change in vitality ($\beta = -.16$) and change in satisfaction with work ($\beta = -.19$). Lastly, change in workload negatively predicted change in the need for autonomy ($\beta = -.22$), competence ($\beta = -.08$), and relatedness ($\beta = -.16$) respectively. Change in perceived autonomy support positively predicted change in vitality ($\beta = .15$) and change in satisfaction with work ($\beta = .20$), and negatively predicted change in reduced accomplishment ($\beta = -.09$). Change in perceived autonomy support positively predicted change in the need for autonomy ($\beta = .32$) and relatedness ($\beta = .24$).

Consequences of changes in the basic psychological needs. Change in the need for autonomy negatively predicted change in controlled motivation ($\beta = -.16$). Further, change in the need for autonomy negatively predicted change in exhaustion ($\beta = -.20$), and change in cynicism ($\beta = -.25$). Additionally, change in the need for autonomy positively predicted change in vitality ($\beta = .30$) and change in satisfaction at work ($\beta = .22$), though it did not predict change in autonomous motivation. Change in the need for competence positively predicted change in autonomous motivation ($\beta = .24$), and negatively predicted change in reduced personal accomplishment ($\beta = -.16$). Change in the need for relatedness positively predicted both change in autonomous motivation ($\beta = .16$) and change in satisfaction with work ($\beta = .20$).

Consequences of changes in quality of motivation. Change in autonomous motivation negatively predicted change in cynicism ($\beta = -.26$) and change in reduced personal accomplishment ($\beta = -.27$), and positively predicted change in vitality ($\beta = .27$) and change in satisfaction with work ($\beta = .23$). Change in controlled motivation did not predict change in any of the outcome variables.

Indirect effects within the process model of change. To examine indirect effects, the structural model (fig.2) was tested adding additional indirect effects. Additional explained variances of the indirect effects in the model are presented in Table 3. Because of the complexity of the model, results with point estimates $\leq .03$ will not be commented on further due to its low predictive value.

First, the additional indirect effects between changes in the basic psychological needs to changes in the outcomes via change in autonomous motivation will be presented:

Additional explained variance in change in cynicism was negatively predicted by change in competence ($\beta = -.06$) and change in relatedness ($\beta = -.04$). Additional explained variance in change in reduced accomplishment was negatively predicted by change in competence ($\beta = -$

.07) and change in relatedness ($\beta = -.04$). Additional explained variance in change in vitality was positively predicted by change in competence ($\beta = .07$) and change in relatedness ($\beta = .04$). Finally, additional explained variance in change in satisfaction with work was positively predicted by change in competence ($\beta = .06$) and change in relatedness ($\beta = .04$).

Second, the results indicated additional indirect effects from changes in the environmental variables to changes in the outcomes via change in the need for autonomy. Additional positive indirect effects were found from change in workload to change in exhaustion ($\beta = .04$) and change in cynicism ($\beta = .05$). Further, additional negative indirect effects were found from change in workload to change in vitality ($\beta = -.07$) and change in satisfaction with work ($\beta = -.05$). Next, additional negative indirect effects were found from change in perceived autonomy support to change in exhaustion ($\beta = -.06$) and change in cynicism ($\beta = -.08$). Additional positive indirect effects were found from change in perceived autonomy support to change in vitality ($\beta = .10$) and change in satisfaction with work ($\beta = .07$).

Discussion

This study uniquely contributes a better understanding of the development of burnout in high-performance coaches as it is the first to investigate change in burnout and well-being throughout a competitive season. While changes in the mean values of increase in burnout and decrease in well-being could be characterized as small to moderate (Cohen, 1988), findings indicated a clear negative trend in overall well-being over the course of a season. Yet, no significant relationship between length of season and changes in any of the burnout dimensions were found, suggesting that the competitive season itself is not a factor leading to burnout, and that other variables better explain changes in burnout indices. Age and perceived goal attainment also failed to show strong relations to changes in burnout, suggesting that other process variables may offer better predictive value.

Overall, findings indicated that the SDT process model of change was supported and that it offers a solid framework to better understand *how* and *why* differences in burnout and well-being in professional work experiences could be explained (Gagné & Deci, 2005). In addition to the direct effects of changes in both work environmental variables on changes in all the outcomes, both changes in need satisfaction and autonomous motivation are key variables explaining *why* changes in environmental variables lead to changes in burnout and well-being dimensions. Findings of this study indicate that the motivational perspective (Ryan & Deci, 2002; Gould, 1996; Pines & Aronson, 1983) effectively complements the stress-perspective (Smith, 1986), as the current study used perceived workload as an assessment of the level of perceived work demands (Leiter & Maslach, 2004). Moreover, findings support and add to our understanding of the dynamics of intraindividual changes over time (Fernet et al., 2012). Different antecedents within the model predicted changes in burnout dimensions. Thus, the three dimensions should be examined as independent subscales rather than as a combined burnout score (Fernet et al., 2012; Maslach, 2003).

Consequences of Changes in Perceived Work Context

As previously found in other organizational settings, change in workload had a strong and positive prediction on change in exhaustion (Leiter & Maslach, 2004; Maslach & Leiter, 2008). In line with Fernet and colleagues' (2013) findings, change in workload did not have the same dominant influence on change in cynicism and reduced personal accomplishment compared to the change in exhaustion. Avoiding an increase in perceived workload throughout a season is therefore particularly important to prevent exhaustion. Perceived autonomy support had a positive effect on changes in well-being. Findings suggest that the autonomy support offered by leaders in sport is key to vitality and work satisfaction in high-performance coaches (Gagné & Deci, 2005).

Only partial support was found for the hypothesis that changes in both environmental variables would predict changes in all three needs—this in contradiction to previous findings (Van den Broeck et al., 2008; Sullivan, et al., 2014). Change in competence was only offered a marginal prediction, and it could be argued that change in the need for competence among high-performance coaches likely depends on other processes than the ones provided by their relationships with their leaders and perceived workload. Coaches' perceived job security and opportunities for professional development (Stebbins et al., 2012) and their professional education and coaching experience (Côté & Gilbert, 2009) are other factors that may have an effect on the fulfillment of the need for competence. Some of the same variables may add to the prediction of change in reduced personal accomplishment, as change in this variable also was to a lesser extent predicted in the SDT process model.

Consequences of Changes in Psychological Need Satisfaction

As hypothesized, change in the three psychological needs predicted change in both controlled motivation and autonomous motivation (Deci & Ryan, 2000). However, changes in all three needs separately did not predict changes in the two different motivational qualities. Change in controlled motivation was only negatively predicted by change in the need for autonomy. Additionally, the explained variance of change in controlled motivation were to a lesser extent predicted by change in the psychological needs compared to how change in the needs predicted change in autonomous motivation. A possible explanation may be the chosen methodology. While need satisfaction was measured in the current study, even a low degree of need satisfaction may represent need satisfaction and thus predict change in autonomous motivation (Ryan & Deci, 2000). Adding intentional obstruction of basic psychological needs, or need thwarting, may offer a greater prediction of controlled motivation (Bartholomew, Ntoumanis, Ryan, Bosch, & Thogersen-Ntoumani, 2011). Further, change in autonomous motivation was positively predicted by change in needs for

competence and relatedness, while the need for autonomy did not offer the expected prediction (Deci & Ryan, 2000). A possible explanation could be that change in the need for autonomy had a strong and direct prediction on changes in four of the five outcomes in the study. Previous burnout studies conducted in work settings have typically studied need satisfaction *or* motivational regulation as predictors of burnout dimensions (Van den Broeck et al., 2008; Fernet et al., 2013; Fernet et al., 2012; Stebbings et al., 2012). This study's findings add to previous knowledge, demonstrating that change in perceived autonomy need fulfillment is a strong predictor of work outcomes, even when quality of motivation is assessed within the process model. However, future studies should examine the relationship between changes in the need for autonomy and changes in autonomous motivation when they are both present within a process model. Such an approach would offer an opportunity to investigate whether the non-existing relationship is a statistical artifact or a finding of theoretical importance suggesting that changes in the need for autonomy do not necessarily directly affect changes in autonomous motivation when studying change in burnout and well-being. While changes in the need for competence and relatedness offered fewer direct effects on outcomes than what was expected, they both explained added variance in outcome variables, with the exception of change in exhaustion, via change in autonomous motivation. The current findings highlight the importance of changes in need satisfaction as a crucial contributor to the SDT process model. A decrease in needs fulfillment is an important risk factor limiting psychological resources necessary for coaches working in demanding high-performance sport contexts (Gagné & Deci, 2005; Stebbings et al., 2012).

Consequences of Change in Motivational Regulation

Change in controlled motivation did not significantly contribute to the model. This is unexpected as previous findings show a positive relationship between low self-determined motivation and burnout at work (Fernet et al., 2012; Mclean et al., 2012; Sullivan et al.,

2014). A possible explanation may lay in the choice of study methods and design. Mclean et al. (2012) and Sullivan et al. (2014) used cross sectional data. Fernet et al. (2012) examined change, however they measured quality of motivation on a continuum with an aggregated motivational index as did Sullivan et al. (2014). Collapsing the different qualities of motivation may not sufficiently capture the multidimensionality of motivation, and consequently important differences between the qualities of motivation could be missed (Chemolli & Gagne, 2014). This implies that a weak correlation between controlled motivations could be 'hidden' if autonomous motivation has a strong correlation with burnout. Further, research on quality of motivation in relationship to burnout among high-performance coaches is recommended to use either autonomous or controlled motivation, or to more accurately examine the specific impact of different motivational regulations (Chemolli & Gagne, 2014). Change in autonomous motivation contributes in important ways to the process leading to variations in overall well-being. High-performance coaching as an occupation is often highly autonomously motivated where coaches often express a strong affection for their sport and tend to have a long term investment in their the sport. Their sport and profession are often an important part of their identity (Mclean & Mallett, 2012; Mclean et al., 2012; Vallerand & Houliort, 2003). A decrease in autonomous motivation is therefore likely to have damaging effects, leading to increased cynicism and reduced personal accomplishment, important burnout dimensions thought to be closely related to motivational processes (Fernet et al., 2013). In addition, decrease in autonomous motivation will likely be linked to a decrease in well-being as the fun and interest in their profession erode (Deci & Ryan, 2000).

Indirect Effects Within the SDT Process Model

Current study findings are in line with SDT theory tenets (Ryan & Deci, 2002) and previous findings from Fernet et al. (2013). Proximal variables in the process model are of

higher predictive value than distal variables. This was true for all findings except the relationship between change in workload and change in exhaustion. Consequently, it is crucial to study indirect effects from change in the environment through the mediating variables of change in need satisfaction and quality of motivation when seeking a greater understanding of the process leading to changes in burnout and well-being indices (Van den Broeck et al., 2008). Change in the need for autonomy is an important mediational contributor between the changes in the environmental variables to change in exhaustion, change in cynicism and change in well-being indices. These findings are dissimilar to Fernet et al.'s (2013) findings, where all the three needs mediated the relationship between, for instance, role overload and social support and the three burnout dimensions. High-performance coaches are highly responsible for athlete development and performance (Thelwell et al., 2008). They need to experience autonomy, in order to be able to do their job in accordance with their philosophy and values, and to maintain a high quality of motivation for their work. When high-performance coaches' experience an increase in workload and a decrease in perceived autonomy support, then this will decrease the fulfillment of their need for autonomy, leading to increases in exhaustion and cynicism and decreases in vitality and work satisfaction.

Change in autonomous motivation appears to be an important mediating variable between changes in competence and relatedness need satisfaction and all outcomes except change in exhaustion. The current study adds valuable knowledge as it is one of two studies using a four-step SDT process model towards burnout in a work setting, and the only study using change data and measuring the unique contribution of change in autonomous motivation as a mediator between changes in two of the three needs and the outcome variables. When high-performance coaches experience a decrease in satisfaction of both the need for competence and relatedness, leading to a decrease in autonomous motivation, then

this will likely have a detrimental effect on all burnout and well-being variables, with the exception of change in exhaustion which may be better predicted by other variables.

Limitations and Future Directions

Measuring a complex model enhances our understanding of the hypothesized SDT process in a work setting. However, it also limits and challenges the capacity to specifically target the contribution of a few specific variables within the model. In the current study, although the population was large and representative of high-performance coaches in Scandinavia, the response rate was fairly low. In accordance with guidelines to enhance response rates for web surveys, the current study used a longer completion time than recommended (Fan & Yan, 2010). Future web studies should aim for higher response rates.

Current findings offered relatively low correlations between burnout dimensions and age and perceived goal attainment. Future studies should examine possible moderating effects in relation to these variables to examine possible relationships for different subsamples. For instance, age could be tested as a moderator between work-home-interference and burnout (Demerouti, Bakker, & Bulters, 2004) or performance level at work and burnout (Hjälml et al., 2007). Perceived goal attainment could be tested as a moderator between for instance recovery and burnout (Sonnentag & Fritz, 2014). The present study did not examine the direct relationship between burnout and well-being indices, and future studies may consider examining how the promotion of vitality and work satisfaction could be a preventive strategy to avoid burnout in sport coaches (Keyes, 2002). Finally, current findings were based on a variable-centered approach, which means that the focus of the study is to explore the relationships between the variables. In the future, person-oriented research may purposely target coaches who are experiencing higher levels of burnout to better grasp the causes and consequences of burnout in this population.

Practical Implications

Implications to reduce exhaustion and cynicism and increase vitality and satisfaction with work for high-performance coaches are clear. First, a manageable workload throughout a competitive season is crucial, especially to prevent exhaustion (Fernet et al., 2013; Van den Broeck et al., 2008). The sports organization and leaders of high-performance coaches should demonstrate awareness around unreasonably high demands on their coaches (Bentzen, Lemyre, & Kenttä, 2015; Fletcher & Scott, 2010). For instance, it is not sustainable for coaches who work in a team of three colleagues to complete the same work-load as a team of four colleagues, no matter how important the tasks are. Sports organization should therefore help coaches prioritize tasks in relationship to available resources. This should be prioritized if club leaders want to foster a work environment that enhances the overall well-being and long-term performance of coaches.

Secondly, sport organizations need to foster autonomy need satisfaction in the daily work life of high-performance coaches and thereby influence involvement which is important for the coaches to sustain their well-being (Gagné & Deci, 2005). Additionally, sport federations need to address how to best support coaches' psychological needs in general. Unmet psychological needs will increase susceptibility to burnout and decrease well-being.

Lastly, it is important for sports organizations, leaders, and coaches to be aware of the damaging consequences of a decrease in autonomous motivation. As coaches have demanding work, they need to be able to sustain the genuine interest in their work and avoid distancing from the purpose of their work, prevent cynicism and a reduced sense of personal accomplishment, and prevent a decrease in vitality and satisfaction with work.

In conclusion, changes in workload and autonomy support, along with changes in the need for autonomy and autonomous motivation, are strong predictors of changes in burnout and well-being. Findings of this study suggest that monitoring variation in these key variables may help prevent burnout and promote well-being in high-performance coaches.

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Table 1

Paired Sample t Test for Change in Variables of the Competitive Season, T1 – T2

Variable	Time 1		Time 2		<i>df</i>	<i>t</i>	<i>p</i>	η^2
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
Autonomy support	5.60	1.14	5.23	1.35	342	5.62	.000	.06
Workload	4.49	1.08	4.44	1.14	342	.82	.413	.00
Autonomy	5.45	0.95	5.14	1.03	342	6.11	.000	.10
Competence	6.03	0.69	5.96	0.75	342	2.13	.034	.01
Relatedness	5.40	1.18	5.10	1.24	342	5.90	.000	.09
Autonomous motivation	5.81	0.72	5.77	0.73	342	1.20	.229	.00
Controlled motivation	4.03	1.10	4.25	0.97	342	-4.39	.000	.05
Exhaustion	1.69	1.07	1.90	1.21	342	-4.04	.000	.05
Cynicism	1.21	0.92	1.53	1.12	342	-6.07	.000	.10
Reduced accomplishment	0.99	0.75	1.14	0.87	342	-3.38	.001	.03
Vitality	5.32	1.07	4.98	1.27	342	5.59	.000	.08
Satisfaction with work	4.83	1.03	4.64	1.18	342	3.87	.000	.04

Note. $N = 343$, $\eta^2 =$ Cohen's effect size (.01 = small, .06 = moderat, .14 = large)(Cohen, 1988)

Table 2

Correlations Among Change Scores and Control Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Ch Autonomy Support														
2. Ch Workload	-.22**													
3. Ch Autonomy	.48**	-.33**												
4. Ch Competence	.12*	-.14**	.25**											
5. Ch Relatedness	.34**	-.23**	.33**	.12*										
6. Ch Autonomous motivation	.14**	-.06	.22**	.28**	.30**									
7. Ch Controlled motivation	-.06	.07	-.15**	.01	.01	.08								
8. Ch Exhaustion	-.25**	.54**	-.38**	-.15**	-.25**	-.12*	.10							
9. Ch Cynicism	-.29**	.30**	-.38**	-.13*	-.25**	-.25**	.03	.52**						
10. Ch Reduced Accomplishment	-.17**	.05	-.13*	-.20**	-.10	-.26**	-.01	.08	.08					
11. Ch Vitality	.34**	-.28**	.41**	.19**	.25**	.26**	-.00	-.46**	-.42**	-.23**				
12. Ch Satisfaction work	.46**	-.36**	.47**	.21**	.38**	.30**	-.01	-.33**	-.43**	-.25**	.48**			
13. Age	.03	-.03	.11*	.14**	.00	.04	-.09	-.15**	-.17**	-.03	.18**	.09		
14. Season length	-.11	.10	.02	.04	-.05	.07	-.01	.09	.08	-.05	-.03	-.15**	.02	
15. Goal attainment T2	.07	-.12*	.06	.08	.09	.15**	-.00	-.05	-.10	-.11*	.05	.18**	.02	.03

Note. $N = 343$. All correlations are between residual change scores; Ch = Change.

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

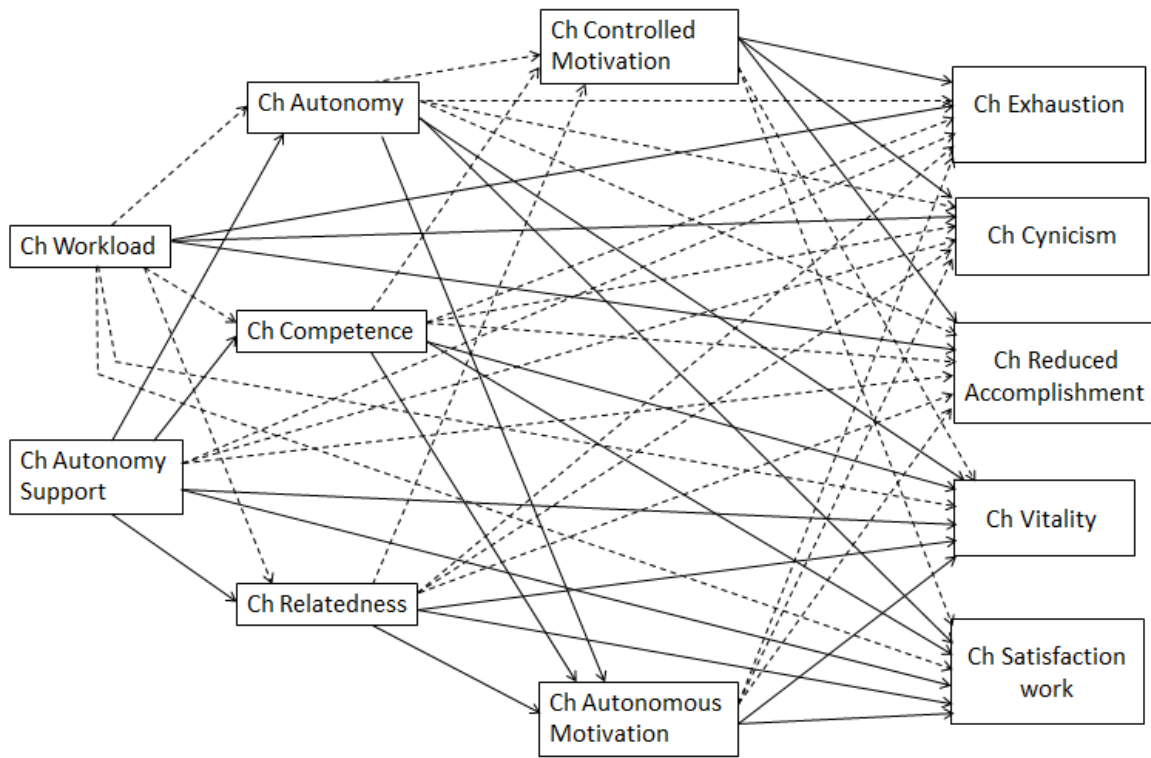


Figure 1. The proposed model. All direct and indirect pathways will be examined. Dashed line = negative relationship. Solid line = Positive relationship. Ch = Intraindividual change.

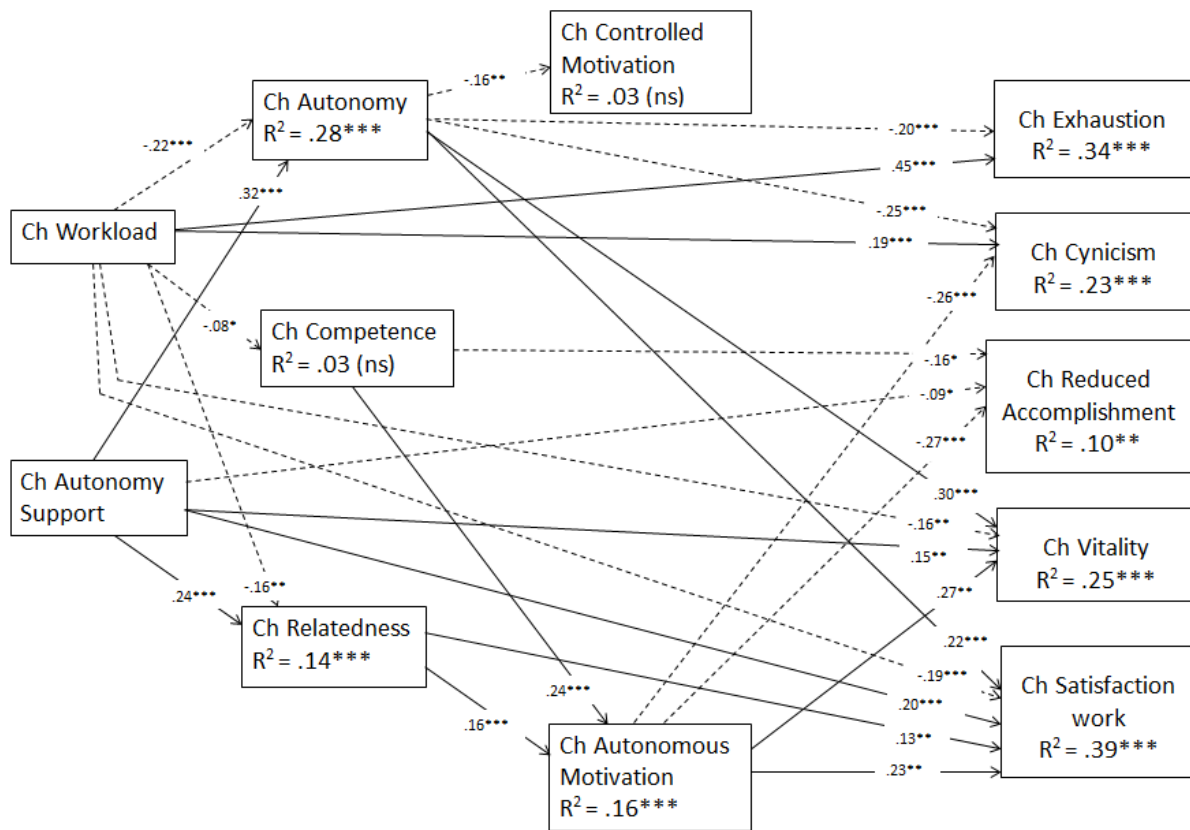


Figure 2. Unstandardized values for structural model. Note, only statistical significant paths are shown. Dashed line = negative relationship. Solid line = Positive relationship. In addition, significant relationships were found between the disturbances terms of respectively; autonomy and competence, and autonomy and relatedness. These findings are not specified in the model, since they were not part of the hypotheses of the current study.

*p <.05, **p < .01, ***p < .001.

Table 3.

Additional Estimates of Indirect Effects of the Hypothesized SDT Process Model

Independent variable	Mediator / mediators	Dependent variable	Specific indirect Estimate	95% BcCI
Ch Competence	Ch Autonomous Motivation	Ch Cynicism	-.062	-.13 -- -.02
Ch Competence	Ch Autonomous Motivation	Ch Reduced Accomplishment	-.066	-.13 -- -.03
Ch Competence	Ch Autonomous Motivation	Ch Vitality	.065	.02 -- .14
Ch Competence	Ch Autonomous Motivation	Ch Satisfaction Work	.056	.02 -- .11
Ch Relatedness	Ch Autonomous Motivation	Ch Cynicism	-.042	-.08 -- -.02
Ch Relatedness	Ch Autonomous Motivation	Ch Reduced Accomplishment	-.044	-.08 -- -.02
Ch Relatedness	Ch Autonomous Motivation	Ch Vitality	.044	.02 -- .09
Ch Relatedness	Ch Autonomous Motivation	Ch Satisfaction Work	.037	.01 -- .08
Ch Workload	Ch Autonomy	Ch Exhaustion	.043	.01 -- .10
Ch Workload	Ch Autonomy	Ch Cynicism	.054	.02 -- .11
Ch Workload	Ch Autonomy	Ch Vitality	-.066	-.14 -- -.03
Ch Workload	Ch Relatedness → Ch Autonomous Motivation	Ch Vitality	-.007	-.02 -- -.002
Ch Workload	Ch Autonomy	Ch Satisfaction Work	-.047	-.09 -- -.02
Ch Workload	Ch Relatedness	Ch Satisfaction Work	-.020	-.05 -- -.004
Ch Workload	Ch Competence → Ch Autonomous Motivation	Ch Satisfaction Work	-.004	-.01 -- -.001
Ch Workload	Ch Relatedness → Ch Autonomous Motivation	Ch Satisfaction Work	-.006	-.02 -- -.002
Ch Autonomy Support	Ch Autonomy	Ch Exhaustion	-.062	-.11 -- -.02
Ch Autonomy Support	Ch Autonomy	Ch Cynicism	-.079	-.14 -- -.04
Ch Autonomy Support	Ch Relatedness → Ch Autonomous Motivation	Ch Cynicism	-.010	-.02 -- -.01
Ch Autonomy Support	Ch Autonomy	Ch Vitality	.097	.04 -- .18
Ch Autonomy Support	Ch Relatedness → Ch Autonomous Motivation	Ch Vitality	.010	.003 -- .02
Ch Autonomy Support	Ch Autonomy	Ch Satisfaction Work	.069	.03 -- .12
Ch Autonomy Support	Ch Relatedness	Ch Satisfaction Work	.030	.01 -- .07
Ch Autonomy Support	Ch Relatedness → Ch Autonomous Motivation	Ch Satisfaction Work	.009	.003 -- .02

Note. Ch = Change. All values are unstandardized. All results are significant based on the 95% Bias Corrected Confidence Intervals. Only

significant results of the analysis were presented in this table due to limitation of space. All result can be obtained by contacting the first author.

PAPER III

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Development of Exhaustion for High-Performance Coaches in
Association with Workload and Motivation: A Person-Centered Approach

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Highlights 85 words

- Latent class growth analyses were used to examine for different trajectories of exhaustion for high-performance coaches over a competitive season.
- Four different trajectories of exhaustion among the coaches were identified; “*High*” (10%), “*Increase*” (15%), “*Decrease*” (4%) and “*Low*” (71%).
- When associating the different trajectories to workload, work-home interference (WHI), recovery, intrinsic and identified regulation, adaptive and maladaptive profiles were identified.
- A maladaptive profile corresponded to higher perceived workload and WHI, lower recovery, and intrinsic and identified regulation, when compared to an adaptive profile.

Abstract

Objectives: The aim of the current study was twofold. First, to explore whether there were different trajectories of exhaustion among high-performance coaches over the course of a competitive season. Then, to investigate whether workload-related variables and motivational regulations were associated with exhaustion class membership.

Methods and design: 299 high-performance coaches responded to an online survey at the start, middle, and end of a competitive season, assessing exhaustion, workload, work home interference (WHI), recovery, and motivational regulations. Latent class growth analyses were used to identify different trajectories of perceived exhaustion. Further, multinomial logistic regression examined class associations for workload-related variables and motivational regulations at the start and at the end of competitive season.

Results: Four different trajectories of perceived exhaustion among coaches were identified, termed respectively “*High*” (10%), “*Increase*” (15%), “*Decrease*” (4%) and “*Low*” (71%).

Higher levels of workload and WHI were associated to classes with higher levels of exhaustion. Higher levels of recovery, and intrinsic and identified regulations were associated to classes with lower levels of exhaustion. Adaptive and maladaptive profiles were identified.

Conclusions: Different trajectories of exhaustion among high-performance coaches over the course of a competitive season were found. A maladaptive profile was associated with higher perceived workload and WHI, as well as lower levels of recovery, intrinsic and identified regulations, when compared to the adaptive profile.

Keywords: exhaustion, person-centered approach, WHI, recovery, motivational regulation, high-performance coaches

Development of Exhaustion for High-Performance Coaches in**Association with Workload and Motivation: A Person-Centered Approach**

Exhaustion is the core component of burnout, and reflects the feeling of being overextended and depleted of resources in relation to one's work (Maslach, Schaufeli, & Leiter, 2001). In the context of sports, coaches are the providers in a provider/-receiver relationship, a key characteristic in helping professions, and a characteristic that makes them vulnerable to burnout (Maslach et al., 2001). Coaches have a key role within the coach-athlete-performance relationship (Lyle, 2002). Excellent high-performance coaches are expected to have the competencies to efficiently train sport-specific skills, motivate athletes, help athletes maximize effort and recovery, and prepare athletes for numerous competitions (Côté, Young, North, & Duffy, 2007, p. 14). When sport organizations care for the motivation and well-being of high-performance coaches, then this increases the probability of coaches staying longer in their jobs, adding important experiences and skills on their way to excellence in their work (Bentzen, Lemyre, & Kenttä, in press a), and provide them with necessary energy to be excellent coaches (Bentzen, Lemyre, & Kenttä, in press b). Despite the importance to prevent burnout in coaches, most studies on burnout in sports have focused on athletes. Only about 40 studies have been conducted with coaches and those reached no consensus on the prevalence of burnout (Raedeke & Kenttä, 2013). Findings range from a low to a high prevalence, but most studies report low levels of coach burnout (Raedeke & Kenttä, 2013). In keeping with the "healthy worker effect," it is a challenge to research the onset and the development of a maladaptive syndrome such as burnout in mostly symptom-free populations (Schaufeli & Enzmann, 1998). Therefore, longitudinal studies that better target subpopulations at risk are essential to enhanced understanding of the burnout process, and such focus is particularly sought after by high-performance coaches (Goodger, Gorely, Lavalley, & Harwood, 2007; Maslach et al., 2001).

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Working as a high-performance coach is highly demanding, as it is associated with a wide range of performance and organizational stressors (Thelwell, Weston, Greenlees, & Hutchings, 2008). High-performance coaches typically have long and irregular work hours, many travel-days, and relatively short contracts (Altfeld & Kellmann, 2013; Lundkvist, Gustafsson, Hjälml, & Hassmen, 2012). At the same time, working as a high-performance coach is often perceived as fun, highly satisfying, and interesting. Individuals working within the coaching profession are often thought to be highly motivated (McLean, Mallett & Newcombe, 2012), passionate (Donahue et al., 2012), and committed (Raedeke, 2004). These characteristics of high-performance coaches and their relationship to their work has influenced the two dominant perspectives within burnout research in the last 35 years—the resource-demand perspective and the motivational perspective (Schaufeli, Leiter, & Maslach, 2009). The resource-demand perspective describes how a persistent imbalance of demands over resources typically creates a lack of energy, which initiates a negative process that leads to burnout (Bakker & Demerouti, 2007). Eventually and especially if opportunities and skills to recover are weak, depletion of energy may lead to burnout (Sonnentag, Kuttler, & Fritz, 2010). The second perspective concerns motives rather than energy (Schaufeli et al, 2009). It has been argued that all employees can experience high degrees of stress due to high demands, though only those employees entering the job with high goals, and high levels of expectation and motivation are at-risk for burnout (Pines, 1993). Both perspectives are reflected within the high-performance coach occupation and it is important to investigate them together to thoroughly grasp the intricacies of burnout propensity in high-performance coaches.

In the resources-demand perspective, perceived workload (Leiter & Maslach, 2004) and work home interference (WHI; Peeters, Montgomery, Bakker, & Schaufeli, 2005) are two frequently studied variables in the work environment, which have a positive relationship with

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burnout. Perceived workload is one's personal assessment of available time and resources to do the expected work and whether what is expected of them are exceeding what is perceived as legitimate (Leiter & Stright, 2009). In case of a large discrepancy between perceived workload and resources, individuals' level of burnout is likely to increase over time (Maslach et al., 2001). Workload in particular has been found to be related to the dimension of exhaustion (Leiter & Stright, 2009). Two recent studies among high-performance coaches have found that perceived workload was an important contributor to the development of exhaustion (Bentzen et al., in press b; Lundkvist et al, 2012). Further, many high-performances coaches experience high workload in combination with inconvenient work hours and high travel demand, which could create additional risk factors associated with burnout (Thelwell et al, 2008). A high workload combined with inconvenient work hours also presents a work-life balance challenge. WHI is likely to develop when attempts to balance work and other life activities and responsibilities fail and when problems arise as a consequence (Bakker, ten Brummelhuis, Prins, & van der Heijden, 2011). A qualitative study among coaches revealed that WHI likely contributes to the development of burnout in coaches, as WHI is an important stressor (Lundkvist et al., 2012).

Recovery skills and behaviors are key factors predicting individuals' health, well-being, and work performance, as well as in preventing negative work outcomes such as burnout (Sonnentag & Fritz, 2007; Siltaloppi, Kinnunen, & Feldt, 2009). A recent study followed six professional soccer coaches with the aim to explore the relationship between stress and recovery over a competitive season (Kellmann, Altfeld, & Mallett, 2015). Findings indicated that coaches' stress levels remained stable over the season, but their recovery behavior decreased. Kellman et al. (2015) suggest that in periods of season where the workload is of necessity consistently high it is of extra importance to focus on quality of recovery. There are two important aspects of recovery, namely psychological detachment and

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relaxation (Sonnentag & Fritz, 2007). Psychological detachment refers to the ability to refrain from work-related activities and thoughts during non-work time, implying mentally disengaging from one's job whilst away from work (Sonnentag & Fritz, 2014). A review revealed that workload had a negative relationship with psychological detachment, and that it forms both a mediator and a moderator within the relationship between job demands and burnout (Sonnentag & Fritz, 2014). Relaxation is a process associated with leisure activities and down time, where the individual deliberately chooses activities to reduce activation and increase positive affect (Sonnentag & Fritz, 2007). The ability to relax has been positively associated with positive affective states at the beginning of a work-week (Fritz, Sonnentag, Spector, & McInroe, 2010), and has been shown to prevent exhaustion (Siltaloppi et al., 2009). So far, no known studies have focused on recovery for sport coaches in the primary prevention of burnout (Raedeke & Kenttä, 2013).

Using a self-determination theory (SDT: Deci & Ryan, 2000) framework, research investigating burnout has identified the erosion of motivation as an important antecedent to burnout (Lemyre, Treasure, & Roberts, 2006; Fernet, Guay, Senecal, & Austin, 2012; Sullivan, Lonsdale, & Taylor, 2014). More explicitly, the quality of motivation seems crucial when exploring this relationship (Deci & Ryan, 2000). The quality of motivation is described by different motivational regulations based on how self-determined, or integrated within the self, the activity is for the individual (Chemolli & Gagne, 2014; Ryan & Deci, 2002). Intrinsic regulation refers to initiating an activity for its own sake and because it is interesting and satisfying in itself as opposed to doing an activity for an external goal. Identified regulation describes behavior that is done because the person values the activity and when it feels personally important. Introjected regulation refers to behavior that is regulated to avoid guilt and shame or to attain ego enhancements, such as pride. External regulation refers to behavior that is performed to satisfy external demands or to reward contingency (Deci & Ryan, 2000).

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More self-determined motivational regulations, intrinsic and identified, leads to interest, excitement, and greater psychological health, while less self-determined regulations, introjected and external, are more likely to lead to the draining of energy and ill-being (Chemolli & Gagne, 2014; Deci & Ryan, 2000). Two previous studies examining the relationship between quality of motivation and burnout at work have used an aggregated motivational index, collapsing motivational regulations in a single score (Fernet, Guay, Senecal, & Austin, 2012; Sullivan et al., 2014). Findings suggested that high levels of self-determined motivation are negatively related to burnout. This approach has been criticized by Chemolli and Gagné (2014), arguing that each motivational regulation is a continuum on its own, thus the quality of motivation should be measured with separate regulation scores rather than as a sum score for all regulations. Two studies have investigated the relationship between four motivational regulations and exhaustion among coaches (McLean, et al., 2012), doctors, and nurses (van Beek, Hu, Schaufeli, Taris, & Schreurs, 2012). Both reported similar patterns of findings as previous research, while adding important nuances. As expected, intrinsic and identified regulations were negatively related to exhaustion, while introjected and external regulations were positively associated to exhaustion. Intrinsic motivation offered the strongest (negative) relationship to exhaustion, while relationships were incrementally weaker as motivational regulations represented less internalized forms of motivation. Further, when testing how the specific motivational regulation predicted burnout, only identified and intrinsic regulation were significant predictors across both nurses and doctors (van Beek, et al., 2012). These findings demonstrate that intrinsic motivation and identified regulation are important (negative) predictors of exhaustion. It is clear that different motivational regulations may single-handedly prevent or contribute to the development of burnout in coaches (Chemolli & Gagné, 2014).

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Burnout is believed to develop over time (Maslach et al., 2001). Despite this, there is a lack of longitudinal research among coaches investigating how it develops (Altfeld & Kellmann, 2013; Raedeke & Kenttä, 2013). Furthermore, it is important to explore for subgroups of particular interest within samples, as for instance those who experience high or increasing levels of burnout. Several studies on burnout in the field of occupational and health psychology have used a longitudinal person-centered approach. Findings clearly indicate that distinct subpopulations yielded different levels of burnout at the start of the study and developed different patterns over time (e.g., Hatinen, Makikangas, Kinnunen, & Pekkonen, 2013; Rudman & Gustavsson, 2011). The authors of these studies highlighted the advantage of this method as it enhanced the possibility of identifying, predicting, and differentiating between subgroups, and these results can help increase our knowledge on how best to craft preventive strategies for distinct subpopulations.

The aim of the current study was to assess whether there are important differences in the experience of exhaustion over the course of a season in high-performance coaches. The study is explorative, categorizing types of experiences of exhaustion in high-performance coaches. An increment in exhaustion was expected to be found in at least one of the subpopulations over the course of the season (Raedeke, 2004). Secondly, assuming that different subpopulations with differentiated development of exhaustion over the season were found, it was expected that these subpopulations would be differently associated with workload-related variables and motivational regulations. Coaches higher in perceived workload, WHI, and introjected and external regulations were expected to be in a subpopulation with higher levels of exhaustion. Further, coaches higher in psychological detachment, relaxation, identified, and intrinsic regulations were expected to be in a subpopulation with lower levels of exhaustion.

Method

Participants and Procedures

High-performance coaches in this study coached athletes competing at the highest national level (team sports: the highest domestic leagues for male and female; individual sports: athletes competing at the highest levels at their national championships within their sports). Coaches from 15 sports in Norway and nine sports in Sweden were recruited with the assistance of National Sport Federations and were invited to participate in a longitudinal study over a competitive season (T1 = three weeks before start; T2 = mid-season; T3 = three weeks before the end). The sports involved are listed according to the size of participation, where the sport with the highest number of study participants is listed first: Soccer, track and field, biathlon, swimming, handball, cross country skiing, orienteering, ice-hockey, volleyball, basketball, ski jumping, alpine skiing, skating, Nordic combined, and telemark skiing. The response rate was as follows: T1: $N = 467$ (54.7%); T2: $n = 338$ (39.6%); T3: $n = 342$ (40.2%)¹. The study was approved by the Norwegian Social Science Data Services and The Regional Ethical Review Board in Sweden, and all participants provided written informed consent.

Measures

All variables were measured at all three time points, despite the demographic variables that were only measured at T1. The length of competitive season was calculated on an average of the response date from T1 to T3 for each sport separately. Due to the international coaching population in Scandinavia, the questionnaire could be answered in Norwegian, Swedish, or English. The original version of the English questionnaire was used, while

¹ Data obtained for this investigation were part of a larger study, which longitudinally examined the process of burnout among high-performance coaches. Some of the same participants have been used in a different manuscript (Change in Motivation and Burnout Indices in High-Performance Coaches Over The Course of a Competitive Season, *Journal of Applied Sport Psychology*, in second revision), though this sample were larger due to lower dropout rate as this study only used data from two time points ($n = 343$). Also some of the same variables are used, though as residual change scores for: autonomy support, workload, autonomous motivation, controlled motivation and exhaustion. In addition, this manuscript used several other variables which this manuscript does not use, such as change in: the psychological needs of autonomy, competence and relatedness, cynicism, reduced personal accomplishment, vitality and satisfaction with work.

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translated and validated versions of the Norwegian and Swedish questionnaires were used if available. If unavailable, a translation-back-translation method was used (Duda & Hayashi, 1998). All questionnaires were answered on a 7-point Likert-scale ranging from 1 (*strongly disagree*) to 7 (*strongly disagree*), except for the Work Home Interference and Exhaustion questionnaires.

Exhaustion. Exhaustion was measured by the exhaustion subscale from Maslach Burnout Inventory—General scale (MBI-GS; Schaufeli, Leiter, Maslach, & Jackson, 1996) (five items, e.g., “I feel emotionally drained from my work”, $\alpha_{\text{time1}} = .84$; $\alpha_{\text{time2}} = .88$; $\alpha_{\text{time3}} = .89$). The scale has previously shown acceptable internal consistency across different occupational groups and over time (Richardson & Martinussen, 2005). Each item was rated on a scale with the following specifications: 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*), and 6 (*every day*).

Workload. Workload was assessed by the subscale Workload from The Areas of Work Life Scale (AWLS; Leiter & Maslach, 2004) (six items, e.g., “I do not have time to do the work that must be done”, $\alpha_{\text{time1}} = .75$; $\alpha_{\text{time2}} = .79$; $\alpha_{\text{time3}} = .79$). The AWLS has previously demonstrated acceptable internal validity in the sport setting of its different subscales ($\alpha = .78-.90$) (DeFreese & Smith, 2013).

Work Home Interference. The scale by Kopelman, Greenhaus, and Connolly (1983) was used to measure WHI. The term “my family life” was reformulated as “my private life” (5 items, e.g., “My work schedule often conflicts with my private life”, $\alpha_{\text{time1}} = .76$; $\alpha_{\text{time2}} = .82$; $\alpha_{\text{time3}} = .84$). Each item was rated on a scale with the following specifications: 1 (*never*), 2 (*sometimes*), 3 (*often*), and 4 (*always*). The scale has previously shown satisfactory internal consistency across three samples ($\alpha = .75-.81$) (Geurts, Kompier, Roxburgh, & Houtman, 2003).

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Recovery. Recovery was measured by two of the subscales in the Recovery Experience Questionnaire (Sonnentag & Fritz, 2007). Four items measured psychological detachment (e.g., “I forget about work”, $\alpha_{\text{time1}} = .80$; $\alpha_{\text{time2}} = .86$; $\alpha_{\text{time3}} = .86$), and four items measured relaxation (e.g., “I kick back and relax”, $\alpha_{\text{time1}} = .73$; $\alpha_{\text{time2}} = .83$; $\alpha_{\text{time3}} = .81$). Both subscales have previously demonstrated good internal consistency—psychological detachment ($\alpha = .90$); relaxation ($\alpha = .83$) (Sonnentag, Binnewies, & Mojza, 2008).

Motivational Regulations. Motivational Regulations were measured by subscales of Self-Regulation Questionnaire at Work, which is validated in Norwegian (Gagné et al., 2014). The regulations measured were: Intrinsic regulation by three items (e.g., “Because I have fun doing my job”, $\alpha_{\text{time1}} = .85$; $\alpha_{\text{time2}} = .90$; $\alpha_{\text{time3}} = .90$); Identified regulation by three items (e.g., “Because I personally consider it important to put efforts in this job”, $\alpha_{\text{time1}} = .69$; $\alpha_{\text{time2}} = .74$; $\alpha_{\text{time3}} = .78$); Introjected regulation by four items (e.g., “Because I have to prove to myself that I can”, $\alpha_{\text{time1}} = .67$; $\alpha_{\text{time2}} = .66$; $\alpha_{\text{time3}} = .68$); External social regulation by three items (e.g., “To get others’ approval”, $\alpha_{\text{time1}} = .81$; $\alpha_{\text{time2}} = .83$; $\alpha_{\text{time3}} = .84$). Some subscales revealed relatively low internal consistency ($< .70$), however all these scales had few items and were thus retained for further analyses in their original form (de Vaus, 2002).

Data analysis

Prior to conducting a detailed investigation of the hypotheses, a decrease in response rate from season start to mid and end season was explored. Little’s MCAR test on missing data showed that the data was not completely missing at random ($\chi^2 = 17552.63$ df = 17190, $p = .03$). Further, drop-out analysis was conducted to test for differences between those participating at all three time points ($n = 299$) versus those only answering at T1 ($n = 86$), T1 and T2 ($n = 38$), and T1 and T3 ($n = 44$) for all study variables at T1 with one way ANOVA. No significant differences between the groups were found. Hence, the assumption was made that the data were missing at random (MAR). Several options on how to handle the missing

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data were considered², but it was decided to do the further analysis on the data of the 299 coaches (35.1%) answering at all three time points. Of these data, the maximum rate of missing data was as follows: T1, 1.7%; T2, 1.3%; T3, 1.3%. Skewness and kurtosis values for all items ranged from $|-1.80$ to 2.18 and $|-1.65$ to 6.36 , indicating normally distributed data (Kline, 2011). Estimates of internal consistency were derived from score reliability (Cronbach, 1951).

Latent class growth analysis (LCGA) is a statistical method suitable for analyzing longitudinal data in order to identify distinct trajectories (Jung & Wickrama, 2008). Distinct subgroups of individuals are identified following a distinct pattern of change over time on a variable of interest (Andruff, Carraro, Thompson, Gaudreau, & Louvet, 2009, p. 11). LCGA were conducted to identify the number of trajectories for exhaustion for the current population over the competitive season (Jung & Wickrama, 2008) using Mplus (MPlus 7.2., Muthén & Muthén, 2012). To identify the trajectories in the current study, the variance of the slope was fixed to zero, while the variance in the intercept was free. This was done to get a more restrictive model. Several criteria were used to evaluate model estimation fit and decide the number of latent classes; the smallest Aikake's Information Criterion (AIC), the smallest Bayesian information criteria (BIC), highest possible entropy, and significant results on the Bootstrap Likelihood Ratio Test (BLRT) (Jung & Wickrama, 2008; Nylund, Asparoutiov, & Muthen, 2007). The BLRT compares the different solutions to the number of trajectories. A significant p -value ($p < .05$) indicates that the $k-1$ model have been rejected in favor of a model with at least k trajectories (Nylund et al., 2007). In addition to the statistical findings of model fit it is also recommended that these results be balanced with theoretical justification and interpretability when deciding the number of trajectories (Jung & Wickrama, 2008). After

² Alternative statistical possibilities are discussed in appendix A.

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identification of the distinct trajectories, multinomial logistic regression analyses were used to explore whether class membership could be associated to the covariates (workload, WHI, recovery, and motivational regulations) both at T1 and T3. Analyses were conducted in MPlus. Due to relatively small samples for some of the trajectories, each individual covariate was tested in separate models.

Results

Descriptive

The average age of the coaches was 41 ($SD = 10$) and the average years of experience was 15.5 years ($SD = 10$). Of coaches, 8.4% were females and 91.6% were males, and 56.5% of worked in Norway, while 43.5% worked in Sweden. The population consisted of 44.5% coaches for team sports and 55.5% of individual sports. Due to differences in the length of the competitive seasons for the coaches in the different sports (range = 4–10 months), two preliminary tests were carried out. Bivariate correlations were conducted to examine the relationship between length of season and exhaustion at the three time-points, and one-way ANOVA was used to investigate for differences in average length of competitive seasons between the four trajectories and their respective exhaustion levels. No significant results were found.

One-way repeated ANOVAs were conducted to compare mean scores on exhaustion at the start ($M = 1.68$, $SD = 1.05$), halfway ($M = 1.83$, $SD = 1.16$) and end ($M = 1.91$, $SD = 1.2$) of the season. Results revealed a significant increase throughout the season for the whole population, $F(2, 297) = 8.61$, $p < .001$, eta squared (η^2) = .06.

Determination of Number of Latent Classes

The fit indices for the different number of latent classes from the LGCA are presented in Table 1. Due to significant BLRT values for the four and five-class solutions, a four-class solution was chosen, based on the argument that this class had the lowest BIC value. In

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addition, the five-class solution had two classes that were almost identical in both intercept and slope, so it was more meaningful to choose the four-class solution. Figure 1 illustrates growth over the season for the four different exhaustion trajectories. Trajectory 1 consists of 29 participants (10%) and is labeled “*High*” (Intercept: $M = 3.32$, $SE = .35$, $p < .001$; Slope: $M = .15$, $SE = .15$, $p = .30$). Trajectory 2 consists of 44 participants (15%) and is labeled “*Increase*” (Intercept: $M = 1.66$, $SE = .24$, $p < .001$; Slope: $M = .87$, $SE = .11$, $p < .001$). Trajectory 3 consists of 13 participants (4 %) and is labeled “*Decrease*” (Intercept: $M = 3.04$, $SE = .32$, $p < .001$; Slope: $M = -.88$, $SE = .12$, $p < .001$). Trajectory 4 consists of 213 participants (71 %) and is labeled “*Low*” (Intercept: $M = 1.34$, $SE = .08$, $p < .001$; Slope: $M = .02$, $SE = .03$, $p = .56$).

Covariates’ Associations to Exhaustion Class Membership at T1 and T3

Descriptive statistics for all covariates in the latent trajectories of exhaustion at both T1 and T1 are presented in Table 2. Results from the multinomial logistic regressions are presented in Table 3, showing coefficient (log odds ratio) differences (and odds ratio) for trajectory group membership on the eight independent covariates at both T1 and T3. All paired class comparisons for the final four-class LCGA are presented.

At T1, the probability of being classified as “*High*” (Class 1) rather than “*Low*” (Class 4) increases when the participants are higher in perceived workload, WHI, and external regulation. It decreases when coaches are higher in relaxation and intrinsic regulation. The probability of being in “*Increase*” (Class 2) rather than “*Low*” (Class 4) increases when the participants’ perceived higher workload and WHI, and decreases when psychological detachment and relaxation are higher. The probability of being in “*Decrease*” (Class 3) rather than “*Low*” (Class 4) increases when the participants are higher in workload and WHI. The probability of being in “*High*” (Class 1) rather than “*Increase*” (Class 2) increases when participants are higher in psychological detachment.

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At T3, the probability of being classified as “High” (Class 1) rather than “Low” (Class 1) increases when the participants are higher in perceived workload, WHI, and introjected regulation. It decreases when their psychological detachment, relaxation, and intrinsic regulation are higher. The probability of being in “Increase” (Class 2) rather than “Low” (Class 4) increases when the participants are higher in perceived workload and WHI, and decreases when psychological detachment, relaxation, and intrinsic motivation are higher. The probability of being in “Decrease” (Class 3) rather than “Low” (Class 4) increases when the participants are higher in identified regulation. The probability of being in “High” (Class 1) rather than “Decrease” (Class 3) increases when participants perceived workload and WHI is higher, and decreases when the participants psychological detachment, relaxation, and identified regulation are higher. The probability of being in “Increase” (Class 2) rather than “Decrease” (Class 3) increases when participants perceived higher workload and WHI, and decreases when participants’ psychological detachment, relaxation, and identified regulation are higher. Finally, the probability of being in “High” (Class 1) rather in “Increase” (Class 2) increases when participants are higher in psychological detachment.

Discussion

The current study is the first to investigate the developmental trajectories of exhaustion in high-performance coaches throughout a competitive season using LCGA. Results confirmed that LCGA provides an opportunity to describe a more nuanced picture of the development of exhaustion in sub-populations of coaches, as compared to analyzing change in mean values for the overall population. As expected, one trajectory did increase in exhaustion over the season (15%). The increase was substantial as it developed from being low in exhaustion at the beginning of the season to high at the end of the season, using the threshold criteria by Maslach, Jackson, and Leiter (1996).

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Somewhat surprisingly, two trajectories started out high in exhaustion at the beginning of the competitive season. However, this finding is likely reflecting the reality of exhaustion levels at the start of the competitive season. Even though data collection was collected at the start of the season, coaches had already been working during pre-season. Additionally, the findings shed light on the insufficient length of vacation between the end of a competitive season and a new pre-season—some coaches hardly take a break (McChesney & Peterson, 2005). However, authors of a meta-analysis (de Bloom, Kompier, Geurts, de Weerth, Taris, & Sonnentag, 2009) argued that the beneficial effects of recovery after vacation on health and well-being fade out shortly after work resumption. Consequently, prevention of higher levels of exhaustion is most likely to be efficient when making changes in the work environment, rather than relying on long term effect from recovery between seasons. Importantly, the two trajectories that were high in exhaustion at the beginning of the competitive season developed differently. One trajectory (4%) unexpectedly decreased from high level to low level of exhaustion over the season (Maslach et al., 1996). Findings are promising in regard to secondary prevention, as it seems possible for coaches to bounce back and recover from higher levels of exhaustion *during* a competitive season. The other trajectory starting out high in exhaustion remained high throughout the season (10%). Being highly exhausted over a longer period of time has shown to increase cynicism and decrease one's sense of accomplishment, and these high-performance coaches are thereby highly at risk of developing a more severe state of burnout (Taris et al., 2005).

Finally, the majority of the high-performance coaches remained low in exhaustion throughout the season (71%) (Maslach et al., 1996). This result clearly supports Schaufeli and Enzmann's (1998) concern about studying the phenomena of burnout in a low-burnout population, which could be problematic for the validity of the findings of burnout. It is therefore of importance to use statistical methods that aim to target those high in exhaustion,

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such as LGCA. One out of four of the coaches (24.4%) were characterized as high in exhaustion at the end of the season, which highlights the importance of doing further research on the prevention of burnout for this profession by employing longitudinal and intervention-based research (Raedeke & Kenttä, 2013). Moreover, findings suggest that it is challenging to identify and predict coaches' variation in exhaustion profiles throughout the season based solely on their levels of exhaustion at the beginning of the season. It is therefore imperative to identify variables corresponding to different exhaustion trajectories. However, before doing so, it should be noted that several of the trajectories were of small samples. Thus results associated with these trajectories should be interpreted with caution.

The overall hypothesis that high-performance coaches with a maladaptive profile would more likely be in a trajectory with higher levels of exhaustion was supported. However, not all associated variables were of equal strength in predicting class membership. Further, there were stronger and more consistent findings of associated variables predicting class membership at the end of the season compared to the beginning of the season. This could be explained by larger differences in variance in the study variables at the end of the season. Three patterns of findings will be discussed in greater detail: (a) All workload related variables showed strong and consistent associations to exhaustion class membership (either high or low); (b) At the beginning of the season, both "Increase" (Class 2) and "Low" (Class 4) were low in exhaustion, yet, the workload related variables predicted class membership that could help foresee whom were more likely to increase or stay stable in exhaustion during the season; (c) Not all motivational regulations were consistently associated with class membership, though all significant findings were in line with expected hypotheses.

First, high levels of workload are a clear risk factor associated to experiencing higher levels of exhaustion. This is in line with previous research both among coaches in sport (Bentzen et al., in press b; Lundkvist et al, 2012) and among employees in other organizations

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(Leiter & Stright, 2009; Maslach et al., 2001). Findings from a longitudinal cross-lagged study (Demerouti, Bakker, & Bulters, 2004) indicated that workload, WHI, and exhaustion had reciprocal relationship on one another over time. Even though this study did not examine the relationship between the associated variables, it is likely that to believe that those with higher perceived workload also are at greater risk of experiencing higher levels of WHI. As known, only one previous qualitative study has described how WHI was experienced as a stressor that contributes to exhaustion among elite coaches (Lundkvist et al., 2012), while no previous quantitative study among the current profession has studied this relationship. WHI came out as the strongest variable associated to probability of class membership of exhaustion. More specifically, higher levels of WHI increased the probability of being in a class experiencing higher levels of exhaustion. The long and irregular work hours and high travel demands of the coaching profession is an obvious challenge to combining private or family and professional life (Altfeld & Kellmann, 2013; Lundkvist et al, 2012). Some previous qualitative studies have discussed challenges related to WHI among female coaches (e.g., Dixon & Bruening, 2007), however, current findings clearly suggest that this is an importation contributor to also male coaches levels of exhaustion.

Further, the crossed-lagged study of Demerouti et al. (2004) suggested that employees who experience higher levels of WHI might have more difficulties recovering at home. While this relationship was not tested in the current study, overall findings indicated that coaches with lower levels of psychological detachment and relaxation were more likely to be in a class with higher levels of exhaustion. Findings are in line with Kellman et al.'s (2015) results, which indicated that recovery is key when stress levels are high. Moreover, findings from the current study extend this claim, as they are the first results known concerning recovery for primary prevention of exhaustion among high-performance coaches. They also follow similar findings from other occupational groups (e.g., Siltaoppi et al., 2009; Sonnentag & Fritz,

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2014). Previous research on high-performance coaches in a stress perspective shows the importance of a focus on coaches' needs and ability to recovery, as this should not be a topic exclusively concerning athletes in sport (Fletcher & Scott, 2010).

Secondly, the results of the difference in workload related variables association to classes of high and low in exhaustion were replicated when comparing "Increase" (Class 2) and "Low" (Class 4) who were both low in exhaustion at the beginning of the season. The results could be applied to help predict differences between those coaches who are going to remain low in exhaustion and those who are going to increase in exhaustion over the competitive season based on associated variables: Coaches reporting high levels of workload and WHI and low levels of psychological detachment and relaxation were more likely to be in the class that increases in exhaustion through the season. These findings are in line with previous research in the demand-resource perspective (Bakker & Demerouti, 2007), suggesting that higher demands and lower levels of recovery possibilities and skills will eventually enhance exhaustion levels.

There are practical implications to be drawn from the results of the workload related variables relation to exhaustion among high-performance coaches. First of all, sports organizations have to help coaches maintain a sustainable workload over the season (Bentzen et al., in press a; Bentzen et al. in press b; Fletcher & Scott, 2010). Second, coaches themselves need to be highly aware of the challenges attached to combine their private life with a high-performance coaching job, and prevent interference by planning, foreseeing, and discussing possible obstacles with important persons in their private life. Additionally, sports organizations as employers should be aware of the benefits that might be gained of having coaches as employees who manage to have a sound and solid private life (Geurts, Rutte, & Peeters, 1999). Consequently, the employers would benefit from supporting coaches to address challenges regarding WHI on a regular basis. They can help coaches to develop clear

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strategies on how to best handle these obstacles in order to minimize work life interfering with their private life, causing additional life stressors from the private domain that might be accumulated throughout the season. Further, it is of necessity for high-performance coaches to implement recovery strategies both in the hometown and when traveling. When possible, such as in training periods in hometown, coaches should aim to lower their workload, have shorter work hours (Sonnentag & Niessen, 2008), and detach from work by engaging in non-work activities that require their full attention (Sonnentag, Kuttler, & Fritz, 2010). Moreover, when coaches are traveling for competitions and training camps they are often at work around the clock (Olusoga, Maynard, Hays, & Butt, 2012). During these periods it is of importance to find some time for recovery, such as taking time to exercise (Sonnentag & Niessen, 2008) or other and commit to schedule restorative work-breaks (Trogakos, Beal, Green, & Weiss, 2008). Furthermore, it is important for employers to promote the careful planning of the coaches' work schedule, balancing it with leisure time, and regularly discussing with coaches to help them solve challenges such as media attention (outside work hours) and restrict how available they are by email and phone (Sonnentag & Niessen, 2008). Due to the 'unstructured' nature of the high-performance coaching job, these challenges are most likely solved individually and greatly vary based on sports and performance level. Moreover, coaching education needs to emphasize recovery skill acquisition, as it is a fundamental proficiency facilitating the process toward becoming a professional coach.

Finally, findings pertaining to the relationship between motivational regulations and class membership of exhaustion were not as consistent as findings pertaining to workload variables. Higher levels of introjected and external regulations failed to systematically show associations to classes of higher levels of exhaustion, as they predicted class membership of higher class of exhaustion within one analysis each. Earlier studies have also revealed similar findings where weak and positive associations were found in relationship to exhaustion

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(McLean et al., 2012; van Beek et al., 2012). Recently, a study using change in controlled motivation over a season (introjected + external regulations) as a predictor for change in burnout dimensions for the same time span reported no significant relationships (Bentzen, et al. in press b). Although findings have been overall inconsistent, both introjected and external regulations might contribute to heightened risk for burnout. Positive associations between controlled regulations and the feeling of being exhausted were recently explored in a qualitative study investigating professional coaches showing high levels of exhaustion (Bentzen et al., in press a). The coaches revealed how the combination of having a demanding job with extensive work hours while their motivation for being at work was driven by external reasons led to energy depletion. These experiences are in line with the tenets of SDT, that behavior that is driven by controlled regulations is more likely to be exhausting as the activity is not done of free will and is not found interesting or fun (Ryan & Deci, 2002). Thus, weaker associations found between controlled regulations and exhaustion is of interest to be discussed in relation to the stronger and more consistent findings of the relation between the autonomous regulations and exhaustion. Higher levels of intrinsic and identified regulations decreased the probability of being in a class of higher exhaustion. These findings are in accordance with previous research, indicating negative and moderate to strong associations between exhaustion and intrinsic and identified regulations respectively and exhaustion (McLean et al., 2012; van Beek, et al., 2012). Evidently, coaches who are doing their work because they find it satisfying, fun, and interesting are less prone to experience high levels of exhaustion.

These findings could be explained by coaching being a well-integrated activity in the lives and identities of these coaches (Bentzen, et al., in press a; Vallerand & Houlfort, 2003), as they have been highly involved in their sport for a long time—both as athletes and coaches (Salmela, 1995). Consequently, if the coaches are able to sustain higher levels of autonomous

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regulations towards their job, it will have preventive effects. On the other hand, if the autonomous regulations are low, it would have devastating effects and would increase the risk of experiencing higher levels of exhaustion.

These results imply that it is crucial that high-performance coaches who invest extensive time and energy in their sport (Altfeld & Kellmann, 2013; Raedeke & Kenttä, 2013) are enjoying what they are doing. A suggestion both for coaches and their management is to be aware of the significance of maintaining and protecting the enjoyable side of coaching to prevent exhaustion—even when the pressure and work demands are high. Further, employers should help in limiting coaches' less meaningful and enjoyable assignments, and offer support when these assignments have to be done. Finally, coaching education should target development and awareness of coaches' ability to monitor their own quality of motivation as a useful indicator of one's own energy resources and well-being levels over time.

Limitations and Future Directions

In this study, burnout is described as a developmental process (Taris, Le Blanc, Schaufeli, & Schreurs, 2005). High exhaustion levels at the start of the competitive season may have been the result of higher demands accumulation by coaches before the current season—prior research in health care settings has shown that burnout may develop over several years (e.g., Rudman & Gustavsson, 2011). The current study has focused on trajectories with linear trends as data was collected at three specific time points during the course of a competitive season. Future research should target similar populations over a longer period and with the help of additional time points to examine non-linear developments with more complex models involving trajectories following cubic or quadratic trends (Andruff et al., 2009). Additionally, current study analyses were limited to examining the associated variables' impact on class membership. Further analysis should examine intricate relationships between the associated variable, by for instance exploring how the intercept and

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slope for the different trajectories could be predicted by several of the associated variables within the same model (Andruff et al., 2009).

Further, the current study only examined exhaustion as one of the three subscales of burnout. Future studies should target all three burnout dimensions to better examine how sub-populations of cynicism and reduced personal accomplishment may differentially develop over time, and assess how these may be related to workload and motivational regulation. It is expected that the motivational regulations would better predict these two subscales as they have been identified as the more motivational and interpersonal dimensions of burnout (Bentzen et al., in press b; Fernet, Austin, Trepanier, & Dussault, 2013).

Finally, it is obvious that recovery for high-performance coaches is a topic that needs more attention, both in future research and in the work setting. However, the relationships between work, psychological detachment, and relaxation are likely intricate, as many coaches perceive their occupation as a 'hobby-job' (Volpone, Perry, & Rubino, 2013). Future studies should explore in depth whether coaches are able to be involved in their sport in a restorative way during leisure time. Additionally, a more nuanced understanding of the mechanisms involved when coaches are thinking about their athletes and sport during off-work time, when this is both their hobby and profession is needed.

Conclusion

The current study is the first to explore different developmental trajectories for exhaustion for high-performance coaches. Findings indicated that the largest proportion of coaches stayed low in exhaustion throughout the competitive season. This offers a nuanced picture of the exhaustion level of high-performance coaches, which made it possible to explore what characterized the different trajectories in greater depth. There are distinct motivational regulations connected to exhaustion. Coaches who did their job due to higher levels of intrinsic and identified reasons prevented the experience of high levels of

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exhaustion. Moreover, the current study is the first to explore WHI and recovery for high-performance coaches quantitatively in relation primary prevention of exhaustion (Raedeke & Kenttä, 2013). Variation in WHI and recovery were found to be important factors in an explanation as to why some coaches were either high or low in exhaustion.

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Table 1

Fit Indices for Latent Growth Class Models of Exhaustion for Different Number of Trajectories

No. of Classes	No. of free parameters	AIC	BIC	BLRT (p value)	Entropy	Latent class proportions (%)
1	6	2270.22	2292.42			100
2	9	2227.58	2260.89	.00	.72	19/81
3	12	2212.76	2257.16	.00	.77	75/08/17
4	15	2191.40	2246.90	.00	.81	10/15/04/71
5	18	2186.04	2252.65	.02	.82	17/67/05/07/03

Note. $N = 299$. AIC = Akaike's information criterion; BIC = Bayesian information criterion; ABIC = adjusted Bayesian information criterion;

BLRT = Bootstrap Likelihood Ratio Test

EXHAUSTION DEVELOPMENT: A PERSON-CENTRED APPROACH

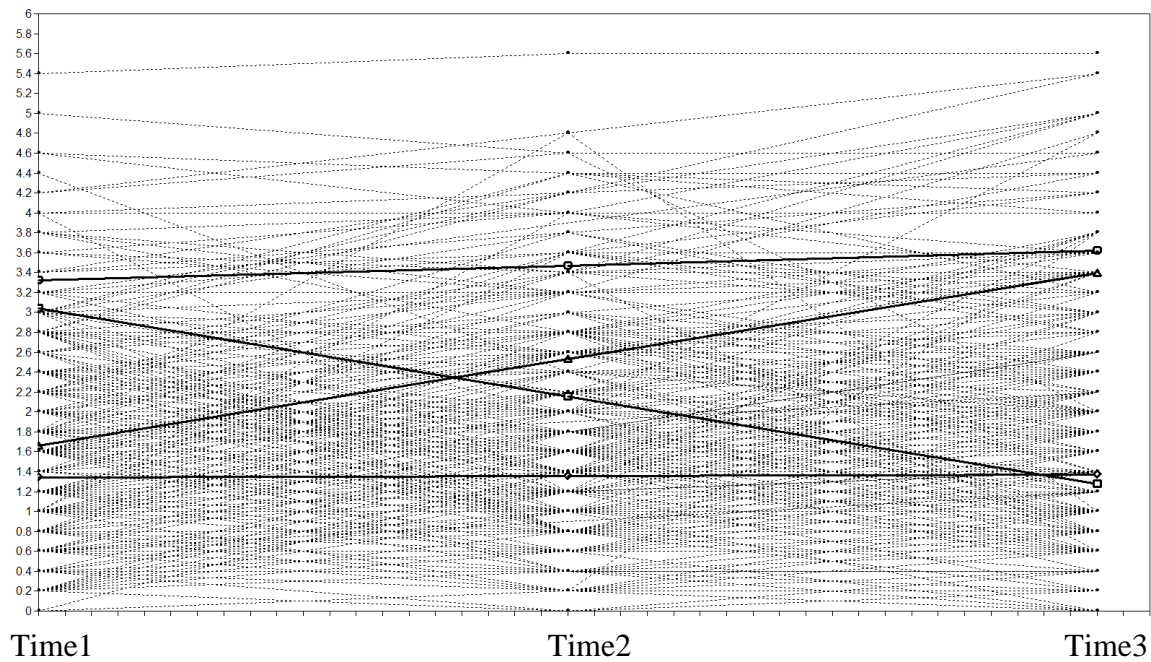


Figure 1. Estimated Mean and Individual Trajectories for Latent Classes of Exhaustion.

Note. Trajectory # 1: *High*, $n = 29$ (10%); Trajectory # 2: *Increase*, $n = 44$ (15%); Trajectory # 3: *Decrease*, $n = 13$ (4%); Trajectory # 4: *Low*, $n = 213$ (71%).

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Table 2

Descriptive Statistics for Covariates for the Latent Trajectory Classes of Exhaustion at T1 and T3

Covariate	Class#1	Class#2	Class#3	Class#4
	High	Increase	Decrease	Low
	<i>n</i> = 29	<i>n</i> = 44	<i>n</i> = 13	<i>n</i> = 213
Workload T1	5.41 (.93)	4.76 (.91)	5.10 (.97)	4.30 (1.06)
WHI T1	2.68 (.43)	2.57 (.47)	2.74 (.54)	2.25 (.41)
Psych detach T1	2.79 (1.20)	2.15 (.87)	2.75 (1.21)	2.90 (1.23)
Relaxation T1	3.92 (1.22)	4.13 (1.22)	4.69 (1.47)	4.58 (1.18)
Intrinsic Regulation T1	6.09 (.90)	6.24 (.77)	6.31 (.85)	6.47(.64)
Identified regulation T1	6.29 (.60)	6.41 (.63)	6.59 (.68)	6.30 (.70)
Introjected Regulation T1	4.97 (1.05)	5.11 (1.45)	5.17 (.93)	4.83 (1.30)
External regulation T1	4.10 (1.27)	3.59 (1.66)	4.23 (1.71)	3.45 (1.50)
Workload T3	5.49 (.65)	5.40 (.80)	3.90 (1.07)	4.18 (1.09)
WHI T3	2.76 (.45)	2.91 (.40)	2.42 (.55)	2.23 (.47)
Psych detach T3	2.40 (1.01)	1.84 (.87)	3.19 (1.37)	2.93 (1.33)
Relaxation T3	3.78 (1.28)	3.31 (1.29)	5.06 (1.55)	4.55 (1.26)
Intrinsic Regulation T3	5.79 (1.07)	5.71 (1.17)	6.10 (.91)	6.32 (.74)
Identified regulation T3	6.20 (.84)	6.13 (.92)	6.64 (.91)	6.24 (.75)
Introjected Regulation T3	5.48 (.93)	5.40 (1.28)	5.42 (1.24)	5.08 (1.23)
External regulation T3	4.15 (1.43)	3.68 (1.78)	3.85 (1.51)	3.60 (1.48)

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Table 3

Predictors of Membership in the Latent Trajectory Classes of Exhaustion (C1 = high / C2 = increase / C3 = decrease / C4 = low)

Covariate	Contrast of Exhaustion Classes											
	1 vs 4		2 vs 4		3 vs 4		1 vs 3		2 vs 3		1 vs 2	
	Coeff	OR	Coeff	OR	Coeff	OR	Coeff	OR	Coeff	OR	Coeff	OR
Workload T1	1.12**	3.05	0.44*	1.55	0.78*	2.18	0.34	1.40	-0.34	0.71	0.67	1.94
WHI T1	2.29**	9.89	1.73**	5.63	2.56*	12.88	-0.26	0.77	-0.83	0.44	0.54	1.71
Psychological detachment T1	-0.08	0.92	-0.70**	0.50	-0.11	0.90	0.03	1.03	-0.59	0.56	0.62*	1.86
Relaxation T1	-0.45*	0.64	-0.31*	0.73	0.08	1.08	-0.53	0.59	-0.39	0.68	-0.14	0.87
Intrinsic regulation T1	-0.65*	0.52	-0.43	0.65	-0.33	0.72	-0.32	0.73	-0.10	0.91	-0.22	0.81
Identified regulation T1	-0.07	0.93	0.25	1.29	0.93	2.54	-1.00	0.37	-0.68	0.51	-0.32	0.73
Introjected regulation T1	0.09	1.10	0.18	1.20	0.22	1.25	-0.13	0.88	-0.04	0.96	-0.09	0.92
External regulation T1	0.29*	1.34	0.06	1.07	0.35	1.42	-0.06	0.94	-0.29	0.75	0.23	1.26
Workload T3	1.51**	4.53	1.41**	4.11	-0.23	.80	1.74**	5.70	1.64**	5.18	0.10	1.10
WHI T3	2.43**	11.41	3.09**	22.07	0.87	2.38	1.57*	4.79	2.26*	9.26	-0.66	0.52
Psychological detachment T3	-0.35*	0.71	-1.06**	0.35	0.14	1.15	-0.48*	0.62	-1.20**	0.30	0.72*	2.05
Relaxation T2	-0.45*	0.64	-0.72**	0.49	0.45	1.57	-0.90*	0.41	-1.17*	0.31	0.27	1.31
Intrinsic regulation T3	-0.66*	0.52	-0.73**	0.48	-0.33	0.72	-0.34	0.72	-0.40	0.67	0.07	1.07
Identified regulation T3	-0.08	0.92	-0.19	0.82	1.05*	2.86	-1.13*	0.32	-1.24*	0.29	0.11	1.12
Introjected regulation T3	0.30*	1.35	0.23	1.26	0.25	1.28	0.048	0.78	-0.20	0.98	0.07	1.07
External regulation T3	0.24	1.28	0.03	1.03	0.10	1.11	0.14	1.15	-0.07	0.93	0.21	1.23

* $p < 0.05$; ** $p < 0.01$. Coeff = Coefficient; OR = Odds ratio

Appendix A

Footnote 2

In estimating the number of different trajectories using LGCA, it is possible to use Full Information Maximum Likelihood (FIML) in Mplus on the complete dataset ($N = 467$). This method makes use of all available data in the longitudinal data set, and is currently considered the best approach for handling missing data that are either MCAR or MAR (Enders, 2011). Although the problem arises when doing further analysis to explore how the workload-related variables and motivational regulations are associated with the different trajectories at T1 and T3. First, as there are missing data in the associated variables at both T1, but most at T3, there would be a large variance in N when conducting the multinomial logistic regression analysis for each variable. Second, testing for differences between the trajectories with predictive variables using multiple imputations to handle the missing data in Mplus is not an option, because the results of logistic regression odd ratio analysis with confidence interval is not available for multiple imputed data in Mplus (Muthén & Muthén, 2012). Further, the consequence of eliminating those coaches who did not respond at all three time points is a loss of power and a possible risk that the results would not give an adequate picture of the number of trajectories for exhaustion for the total coach population of $N = 467$. Therefore, LGCA using FIML to handle the missing data was applied to both data set ($N = 467$ and $n = 299$) to test whether the results of the number of trajectories would differ. The results indicated that the number of trajectories and their development were the same for the two datasets. The results of the LGCA of $n = 461$ could be found in Table A. $n = 6$ did not have complete data on exhaustion at T1, T2, and T3, and the analysis is therefor based on $n = 461$.

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Table A

Fit Indices for Latent Growth Class Models of Exhaustion for Different Number of Trajectories

No. of Classes	No. of free parameters	AIC	BIC	BLRT (p value)	Entropy	Latent class proportions (%)
1	6	2985.53	3010.33			100
2	9	2924.11	2961.31	.00	.64	20/80
3	12	2899.55	2949.15	.00	.71	78/14/8
4	15	2868.38	2930.38	.00	.75	73/13/11/03
5	18	2862.96	2937.36	.01	.74	03/03/09/72/13

Note. $n = 461$. AIC = Akaike's information criterion; BIC = Bayesian information criterion; ABIC = adjusted Bayesian information criterion;

BLRT = Bootstrap Likelihood Ratio Test

EXHAUSTION DEVELOPMENT: A PERSON-CENTRED APPROACH

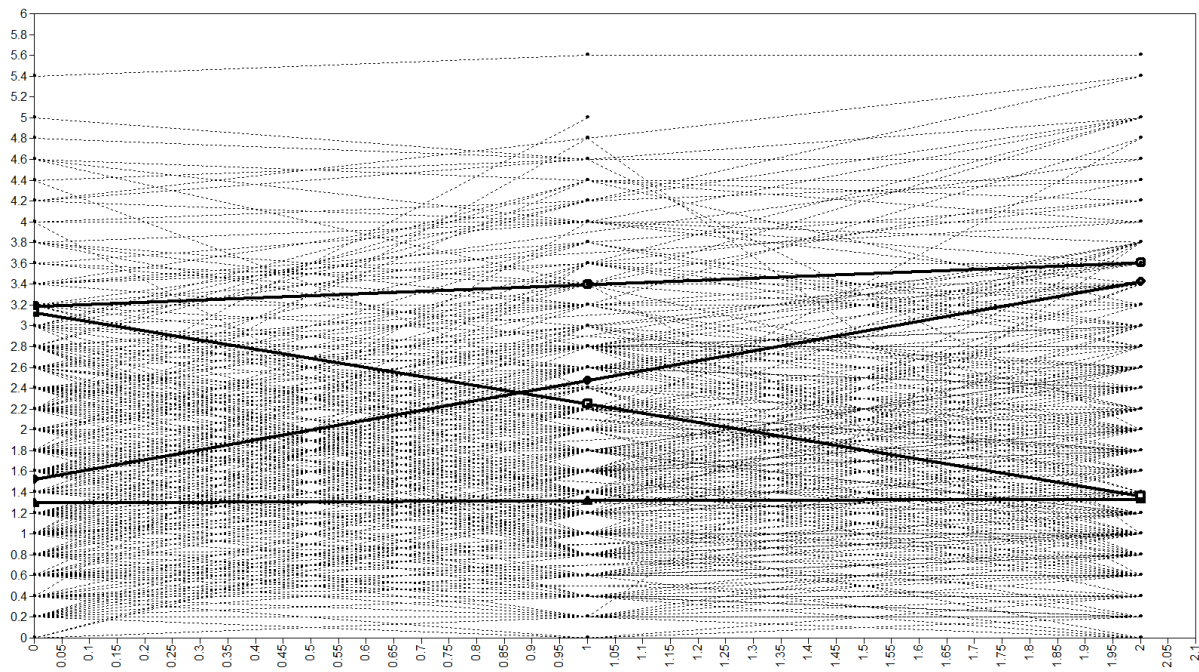


Figure B. Estimated Mean and Individual Trajectories for Latent Classes of Exhaustion.

Trajectory # 1: *Low*, $n = 335$ (73%); Trajectory # 2: *Increase*, $n = 50$ (11%); Trajectory # 3: *Decrease*, $n = 15$ (4%); Trajectory # 4: *High*, $n = 61$ (13%).

Figure B illustrates the results of growth over the season for the four different exhaustion trajectories. Trajectory 1 consist of 335 participants (73%) and is labeled “*Low*” (Intercept: $M = 1.30$, $SE = .07$, $p = .000$; Slope: $M = .02$, $SE = .02$, $p = .45$). Trajectory 2 consist of 50 participants (11%) and is labeled “*Increase*” (Intercept: $M = 1.53$, $SE = .27$, $p = .000$; Slope: $M = .95$, $SE = .14$, $p = .000$). Trajectory 3 consist of 15 participants (3%) and is labeled “*Decrease*” (Intercept: $M = 3.13$, $SE = .32$, $p = .000$; Slope: $M = -.88$, $SE = .12$, $p = .000$). Trajectory 4 consist of 61 participants (13%) and is labeled “*High*” (Intercept: $M = 3.18$, $SE = .30$, $p = .000$; Slope: $M = .21$, $SE = .14$, $p = .12$).

PAPER IV

Bentzen, M., Lemyre, P. N., & Kenttä, G. (2015b). Ability to meet recovery demands explain differences in burnout in high-performance coaches. In review

Ability to Meet Recovery Demands
Explain Differences in Burnout in High-Performance Soccer Coaches

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Abstract

The purpose of the study was to gain in-depth understanding of differences between high-performance soccer coaches experiencing either high or low degree of burnout symptoms (BS) over a season. A mixed method approach was used. Data was collected with a questionnaire at the start and at the end of the season (T1, $N = 92$; T2, $n = 61$). Interviews were conducted with four head coaches, the two highest and two lowest in BS. No difference between coaches was found regarding performance and budget of club. Differences in motivation, work-home-interference, and recovery were significant variables differentiating coaches' levels of BS.

Keywords: high-performance soccer coaches, motivation, WHI, recovery, workload, burnout

Ability to Meet Recovery Demands

Explain Differences in Burnout in High-Performance Soccer Coaches

People like to be involved in projects that go beyond themselves. They want to develop their effectiveness by taking on challenges that make demands on all of their abilities and require a full commitment of their physical, emotional, and creative energy. If these things were not important, we would not be discussing burnout in the first place.

(Maslach & Leiter, 1997, p. 59)

Burnout is a work-related syndrome and characterized by exhaustion, cynicism, and low sense of professional accomplishment (Maslach, Schaufeli, & Leiter, 2001). Exhaustion is feeling mentally and emotionally overextended and drained, cynicism means having a negative and distant attitude towards one's work, where work is perceived as less valuable or interesting than previously. Reduced personal accomplishment is felt when one evaluates one's achievement at work negatively (Maslach et al., 2001). The quote describes how people who are highly motivated in a demanding job are prone to experiencing burnout. High-performance soccer coaches are at risk for burnout as they tend to be highly passionate, persistent, and motivated for their job (Bentzen, Lemyre, & Kenttä, in press a; Lundkvist, Gustafsson, Hjälml, & Hassmen, 2012). Coaching is highly demanding for various reasons: inconvenient work hours, high workload, traveling, short contracts, and media pressure (Olusoga, Butt, Maynard, & Hays, 2010; Thelwell, Weston, Greenlees, & Hutchings, 2008). Coaches risk getting fired when their team underperforms or fails to meet expectations of stakeholders (Arnulf, Mathisen, & Haerem, 2012). A coach's work is greatly influenced by club resources, and few resources can increase the demands on the coach (Hjälml, Kenttä, Hassmén, & Gustafsson, 2007; Thelwell et al., 2008).

In a longitudinal study of high-performance coaches, 24.4% were characterized as high in exhaustion at the end of the season (Bentzen, Lemyre, & Kenttä, 2015).

A person who likes to be involved in an activity, as stated in the quote (Maslach & Leiter, 1997), could be interpreted to be autonomously motivated using the motivational framework of self-determination theory (SDT: Deci & Ryan, 2000; Ryan & Deci, 2002). The quality of motivation—not the quantity—is of importance when predicting adherence, performance, and degree of well-being in the activity (Ryan & Deci, 2002). Quality of motivation is described on a continuum of different motivational regulations based on how integrated in the self the behavior is (Chemolli & Gagné, 2014). Intrinsic regulation is the most self-determined regulation, which means that the activity is initiated because it is interesting, fun, and satisfying in itself, as opposed to doing an activity to reach an external goal. Further, a behavior is driven by an identified regulation when it is done because the person values the activity and feels it is personally important it. Introjected regulation refers to behavior that is driven by internal or external pressure to avoid guilt and shame or to attain ego enhancements. External regulation describes behavior that is performed to satisfy external demands or to reward contingency (Deci & Ryan, 2000; Ryan & Deci, 2002). Coaches who are largely driven by autonomous regulations towards their work, intrinsic and identified, experience lower levels of burnout (Bentzen et al., in press b; McLean, Mallett, & Newcombe, 2012) because of their internal regulation for the activity, leading to greater energy, excitement, and joy (McLean et al., 2012). On the contrary, when behavior is driven largely by external regulations, energy is drained as the activity is not done of free will and is not found interesting or fun (Ryan & Deci, 2002). However, ambiguous findings have been reported in the relationship between more controlled motivational regulations, introjected and external, and burnout among coaches, where both positive relations

(McLean et al., 2012) and no relationships were found (Bentzen et al., in press b). Overall, findings suggest that the quality of motivation does matter for burnout vulnerability, though it is of importance to investigate controlled motivational regulations in greater depth.

The work-demand perspective in burnout research has been suggested that working a lot may be detrimental to employees' health. Perceived workload is the subjective evaluation of the workload (Leiter & Maslach, 2004). If there is a mismatch between personal resources and the work demand, it is likely that burnout may occur over time (Leiter & Maslach, 2004). The balance between work and coaches' private life also matters (Bentzen et al., in press b; Lundkvist et al., 2012)—an imbalance can lead to additional pressure and loss of energy due to work home interference (WHI) (Bakker et al., 2011). High workload and WHI can be stressful and taxing for coaches, and the ability to meet individual recovery demands is therefore crucial (Raedeke & Kenttä, 2013).

Psychological recovery is regarded as an important skill allowing individual to increase resiliency to high demands (Sonnentag & Fritz, 2007). Two distinct recovery skills are psychological detachment and relaxation. They have both been identified as key factors when predicting employees' performance and well-being (Siltaloppi, Kinnunen, & Feldt, 2009). Psychological detachment refers to employees' ability to psychologically distance themselves from work during leisure time (Sonnentag & Fritz, 2007). Relaxation finds place when a person chooses to kick back and relax, or when doing tranquil activities that enhance positive emotions (Sonnentag & Fritz, 2007). Psychological detachment and relaxation have been found to mediate the relationship between job demands and burnout, and the ability to recover reduces the effect of demands on burnout propensity (Siltaloppi et al., 2009). Only one study known has examined recovery in prevention of exhaustion among high-performance coaches, indicating that

higher ability to psychologically detach and relax was associated with lower levels of exhaustion (Bentzen et al., 2015).

High performance coaches are vulnerable to burnout due to their motivational profiles and demanding work. However, there is limited research confirming how these variables may be linked (Bentzen et al., in press a; Bentzen et al., in press b; Bentzen et al., 2015). Additionally, there is a need to investigate how burnout may be explained as a process using a longitudinal design (Maslach et al., 2001). The aim of this current study is to increase our understanding of high-performance soccer coaches who were experiencing either high or low degrees of burnout during the course of a competitive season. We expected that a low degree of goal attainment and limited financial resources would be associated with high levels of burnout. Coaches with high levels of introjected and external motivational regulations were hypothesized to experience higher levels of burnout than coaches with high levels of intrinsic and identified motivational regulations. Coaches with higher perceived workload and WHI were expected to experience higher levels of burnout than coaches with lower levels of workload and WHI, and coaches who were less able to meet recovery demands were expected to experience higher levels of burnout than coaches who were able to meet recovery demands.

Method

Study Design, Participants, and Inclusion Procedure

A mixed method design was chosen to investigate the hypotheses. Data was collected using a sequential quantitative-qualitative approach (Morse, 2003). All coaches from teams from Premier Soccer League men, second highest division for men, and Premier League women were invited to participate ($N = 169$). The Norwegian Soccer Federation distributed emails to all coaches and encouraged coaches to participate. Quantitative data was collected with an online

questionnaire three weeks before competitive season started and three weeks before it ended (seven months apart). Qualitative data were collected using semi-structured interviews. Only head coaches were selected for interviews to ensure homogeneity. Inclusion criteria for the interviews were working full-time, participating in quantitative data collection at both time points, being one of two coaches scoring highest across all burnout dimensions at both time points, and being one of two coaches scoring lowest across all burnout dimensions at both time points. Coaches mainly differed in the subscales exhaustion and cynicism, and no clear differences were found based on reduced personal accomplishment. Therefore, the coaches were selected for interviews mainly based on exhaustion and cynicism levels. All four coaches accepted the invitation, and interviews were conducted within six weeks after the competitive season ended. The study was approved by the Norwegian Social Science Data Services and all participants signed a written informed consent form prior to the study.

Measures

Demographic variables were measured at T1, perceived performance was measured at T2, and budgets of clubs were collected after season's end. All other variables were measured at both time points. Except the measures for work-home interference, burnout, and perceived performance, all questionnaires were answered on a 7-point Likert-scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Burnout. Burnout was measured with the Maslach Burnout Inventory—General Scale (Schaufeli, Leiter, Maslach, & Jackson, 1996): Exhaustion with five items (e.g., “I feel emotionally drained from my work”), cynicism with five items (e.g., “I have become less interested in my work since I started this job”), and reduced personal accomplishment by six items (e.g., “I can effectively solve the problems that arise in my work”). Cynicism showed low

internal consistency at T1 (Table 1), though it was decided keep it in the further analyses in its original form due to a combination of few items in the scale and a small population (Dekovic, Janssens, & Gerris, 1991; Holden, Fekken, & Cotton, 1991). The MBI-GS has previously shown acceptable internal consistency across occupational groups and over time in Norway (Richardsen & Martinussen, 2005). The participants responded to the following specifications: 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*), and 6 (*every day*).

Perceived performance and budget. Variables related to working as a coach in elite sport were measured by perceived performance and club resources. Perceived performance was measured by two items each for perceived goal attainment and goal probability (Sheldon & Houser-Marko, 2001). At T2, the coaches were asked to look back at the start of the season and write down their two most important goals for the season. Based on each of these goals, they were asked to rate to what degree both goal attainment and goal probability was achieved on a 7-point Likert-scale ranging from 1 (*not at all*) to 7 (*to a large extent*). The sum score of the two answers of each goal was used. Resources of the club were assessed (with written permission from all football clubs), and overall accounting costs budget (in Norwegian kroner) for the season for each club was collected with help of the Norwegian Football Association (Department of License). All data are made anonymous to ensure confidentiality.

Quality of motivation. Quality of motivation was measured by the Self-Regulation Questionnaire at Work, previously validated in Norwegian by Gagné and colleagues (2014). Intrinsic regulation was measured with three items (e.g., “Because I have fun doing my job”), identified regulation with three items (e.g., “Because I personally consider it important to put

efforts in this job”), introjected regulation with four items (e.g., “Because I have to prove to myself that I can”), and external regulation with three items (e.g., “To get others’ approval”). Identified regulation at T1 and introjected regulation at both time points showed low internal consistency (Table 1), though it was decided keep them in the further analyses in its original form due to a combination of few items in the scales and a small population (Dekovic et al., 1991; Holden, et al., 1991).

Work demands in contrast to meeting recovery needs. Four different questionnaires were used to measure the balance of work demands and recovery. Perceived workload was assessed with the subscale Workload from The Areas of Work Life Scale (AWLS; Leiter & Maslach, 2004). The scale was reversed, so higher scores indicated higher perceived workload. Workload was measured with six items (e.g., “I do not have time to do the work that must be done”). The AWLS has previously demonstrated acceptable internal consistency of its subscales among athletes ($\alpha = .78-.90$) (DeFreese & Smith, 2013). Work Home Interference was measured based on the scale “Inter-role conflict” (Kopelman, Greenhaus, & Connolly, 1983) with five items (e.g., “My work schedule often conflicts with my private life”). The participants responded to the following specifications: 1 (*never*), 2 (*sometimes*), 3 (*often*), and 4 (*always*). Acceptable internal consistency has previously been shown across samples ($\alpha = .75-.81$) (Geurts, Kompier, Roxburgh, & Houtman, 2003). Recovery was measured by two of the subscales in the Recovery Experience Questionnaire (Sonnentag & Fritz, 2007). Psychological detachment was measured with four items (e.g., “I forget about work”). Relaxation was measured with four items (e.g., “I kick back and relax”). Both subscales have previously shown acceptable internal consistency; psychological detachment ($\alpha = .89$) and relaxation ($\alpha = .82$) (Siltaloppi, et al., 2009).

Interview Guide and Procedure Interview

Four coaches participated in a semi-structured interview (Patton, 2002). The interview guide was based on the questionnaire and consisted of five sections: (a) introduction and demography, (b) motivation for working as a coach, (c) workload and WHI, (d) recovery for coaches, and (e) performance of their team (the interview guide is available upon request). The interviews focused on sustaining natural flow and opportunity for participants to tell their own story. The interviews averaged 102 min in length.

Data Analyses

Ninety-two coaches answered to the questionnaire at T1 (54.4%) and 61 at T2 (36.1%). The dropout rate was 33.7%. Isolated, a maximum of 2.2 % of the data was missing at T1 and 40.2 % was missing at T2. Little's MCAR test on missing data was conducted using IBM SPSS 21, where results indicated that the data was completely missing at random ($\chi^2 = 403.13$, $df = 11834$, $p = 1.00$). Estimates of internal consistency were done by score reliability (Cronbach, 1951). Preliminary analyses were conducted by testing for differences between head coaches and rest of the coaches by independent sample t-test. Next, individual profiles of each coach interviewed were reported by their scores for all variables, and compared to the mean values for the total population. The individual profiles were evaluated to be different from the overall population if the score was one standard deviation below or above the mean.

The qualitative data was transcribed verbatim, resulting in 102 pages of single-space text. The MAXQDA program was used to manually code the data. Direct content analysis was used to organize and classify the data into meaningful patterns, which were previously found of interest in the findings of the quantitative results (Hsieh & Shannon, 2005). This approach is deductive as its goal is to validate or extend already existing conceptual work and help determine

the initial coding scheme (Hsieh & Shannon, 2005). The higher order themes were burnout dimensions, sport specific demands, motivation, workload, WHI, recovery, and performance. In the second phase of the analyses an inductive approach was used to code the data that were in the higher order themes into lower order themes (Patton, 2002). This is described as conventional content analysis (Hsieh & Shannon, 2005), and offered in-depth insight in the higher order themes findings. All authors contributed to the qualitative data analyses to curb researcher bias (Patton, 2002; Watt, 2007). Direct quotes are presented to expand and enrich the findings of the quantitative data.

Results

Of all coaches, 93.5% were males, 6.5% were females; 43.5% coached Premier league men, 33.7% coached the second highest division men, and 22.8% coached Premier league women. Participants were: head coaches, 28.3%; assistance coaches, 23.9%; expert development coaches, 22.8%; goal keeper coaches, 15.1%, and physical coaches, 9.8%. An independent sample t-test was conducted to test for differences between head coaches ($N = 26$) and other coaches ($N = 66$) on all variables at both time points due to the selection criteria for interview. Results indicated that the head coaches were significantly higher in intrinsic regulation at T1 ($M = 6.63$, $SD = .59$) than other coaches ($M = 6.22$, $SD = .63$; $t(87) = 2.81$, $p < .05$). Statistics for the overall population and the interviewed coaches are presented in Table 2. Coaches interviewed were similar in terms of age, experience, travel days, and weekly work hours.

Quantitative Results: Differences in Profiles over the Season

The profiles of the interviewed coaches were compared with the total sample and evaluated to be different if they were one standard deviation above or below the mean (Table 1). There was a difference in exhaustion and cynicism at T2: Coach 2 was lower than the mean in

cynicism; Coach 3 was higher than the mean in exhaustion; Coach 4 was higher than the mean in both exhaustion and cynicism. Coach 1 was not one standard deviation below the mean at either exhaustion or cynicism, but was lower than both Coach 3 and Coach 4. No clear patterns were found for the reduced personal accomplishment dimension. From here, the coaches were labeled as high or low in burnout symptoms (BS): Coach 1—Low Burnout Symptoms (C1-LBS), Coach 2—Low Burnout Symptoms (C2-LBS), Coach 3—High Burnout Symptoms (C3-HBS), and Coach 4—High Burnout Symptoms (C4-HBS). Individual profiles were examined for sport specific demands, quality of motivation, and work demands in relation to meeting recovery needs. In summary, C1-LBS showed an ambiguous profile, with both adaptive and maladaptive differences in relation to the overall mean in regard to what was expected of a coach low in BS. C2-LBS showed an adaptive profile compared to the overall mean in accordance with a low burnout profile. C3-HBS showed a maladaptive profile compared to the overall mean, in accordance to being high in BS. C4-HBS showed an ambiguous profile, with the majority of differences being maladaptive compared to the mean. The qualitative results mirrored the quantitative results. Results are presented thematically, by (a) sport specific demands, budget and goal attainment; (b) Quality of motivation; and (c) Work demands versus meeting recovery needs.

Theme 1: Sport Specific Demands: Budget and Goal Attainment

As evidenced by the quantitative and qualitative data, financial resources did not explain coaches' variation in BS. Further, variation in perceived performance among the coaches did not yield clear indications of why some coaches were higher in BS. Contrary to what was expected, one of the coaches low in BS who was below mean in both goal attainment and goal probability offered this reflection on how these performance results affected him:

Well, we were behind our goal setting [during the season]. In addition, we got injuries, and I just noticed that we could not live up to our expectations. But it did not stress me. If I had put this pressure on my players, and the group, we would only have decreased even more [in performance]. We had to try, without being stressed if we lost. What could I do about it? Feel sorry for myself? (C1-LBS)

Theme 2: Quality of Motivation

Again qualitative data supported the findings of the quantitative data. Notably, three coaches described why intrinsic regulation was of importance for them in their job.

It is really about soccer being a lifestyle, sort of . . . it means a lot of pressure, but at the same time it is a lifestyle. It is a part of you, much more than if you for instance go to school and get an education and then becomes something—right? Soccer is *me* in a way, if you understand? It is a bit different than planning to become an engineer. (C2-LBS)

This is not a job I have only to earn money. It is simply something that I, yeah, I enjoy being a soccer coach really. I have this kind of internal driving force. I turn it around a bit, and I feel I learn something from the players every day, that is the reason I would like to come back. I am simply terribly in love with soccer. (C4-HBS)

C3-HBS scored lower than the mean on intrinsic regulation than the overall population. Despite this, he described how he loved his club, sport, and athletes, though he repeatedly stated that he would only be a head coach for a short period:

You only coach in this position a limited time. I don't think it is healthy, to do this too long. I use a bit flippant term—if it is like that, that you have to be loco in your head to be a coach in Norwegian soccer, I would rather quit before it is too late. (C3-HBS)

This coach referred to extreme range of demands, and even the love for his sport could not compensate for the heavy demands over time. C4-HBS reported high levels of introjected regulation at both time points, in addition to high levels of intrinsic and identified regulation. During the interview he described that he felt a great responsibility towards his athletes, which made him work a lot (i.e., introjected motivational regulation):

It is not [swear word] ok [the workload]. Well . . . sometimes when I go to work I have to drill holes in my eyelid to be able to see. Because you feel so tired, but I have no choice, that is my point. (C4-HBS)

The coach further elaborated about why he thought he did not have a choice.

If I take on a job as a coach or a leader, then it will depend on mutual trust, and, the players trust that I do my job and that I am proficient in my job so they can put their lives in my hands, and put their future in a community that is run by the coach. (C4-HBS)

Taking on such responsibility for athletes' lives could be a great burden. Working numerous extra hours, as this coach did, in combination with high levels of internal pressure to avoid failure in helping his athletes is bound to drain energy over time.

Theme 3: Work Demands in Contrast to Meeting Recovery Needs

Workload and WHI. At both time points, C1-LBS and C3-HBS were average on perceived workload, while C2-LBS and C4-LE were below and above mean respectively. The qualitative results revealed that C4-LE perceived the most excessive workload. The other coaches also experienced a large workload and between them no difference in workload could be distinguished, yet a critical difference became apparent when they reflected on the high workload in relation to their ability to manage WHI and recovery. C2-LBS, who was lower than the mean on WHI scores at both time points: "Well, it is not a nine to five job. That is why I have been

conscious. . . when I am at home I will not talk so much [about soccer], then I just try to be in the moment” (C2-LBS). He describes how he handles situations when he needs to work more: “Then I rather stay at work until 6:00 then, and finish things and write up, and go home. At home I am not going to . . . then I have to do something else” (C2-LBS).

Both C3-HBS and C4-HBS were above mean on WHI at T1 and C3-HBS was also above at T2. C3-HBS talked a lot about issues related to WHI during the interview:

When you come home and you feel you do not have the energy to go out and kick the ball with your kid. The kid loves to do it, but you do not manage it. Afterwards I feel guilty . . . and then you get even more frustrated. And then you have a short temper. And really, it is not their fault. (C3-HBS)

Further, he described the ripple effects of his work on other family members, which again created additional burden for him:

But also she (his wife) isolates herself at work because people ask her. She is nice to me and she avoids talking about this with me. But I know how it is. Also, my niece, she is in high-school, and they [the other kids] tell her if we lose. I know that as well, even though they do not tell me. But I know she has a hard time at school because her uncle is the head coach. Because you get text-messages when we win, then I get messages that they are proud of me and things like that. This is tiresome, it really is. (C3-HBS)

Recovery. C2-LBS overall showed a better profile compared to the mean of the coach population when it came to both psychological detachment and relaxation.

I know that if I am going to stay in this profession for many years, then I have to do something, qualitatively take care of myself . . . yeah, go on a holiday. I was in an exotic and warm place for 14 days and relaxed, and stuff like that. (C2-LBS)

This coach also described how he slept well at night:

I sleep well at night, I do not need a lot of sleep. I can go to bed about 12:00–1:00 a.m. and wake up again at 7:00 a.m. I get the sleep I need, I think, and then you have the energy. (C2-LBS)

In contrast, the other three coaches were below the mean of psychological detachment at T2.

C1-LBS described it like this.

The job is in your head all the time. When I talk about balance, I hope I am OK balanced. I do want to support my children, follow them to activities, and be there for their homework and stuff like that, I try to be present. But you might be physically present, but a large part of your mind is doing other things and is occupied with thoughts about tomorrow's practice and stuff like that. (C1-LBS)

He elaborated on being preoccupied with his job: "I have constructive soccer-thoughts all the time, I hope. I get done with thoughts about last soccer practice at the same time as you build up for the next practice" (C1-LBS). He continues:

It is tiresome when things have not worked (at practice), but at the same time, if I just get to think about this and solve it before the next practice, and if that practice works well, then it is energy refill and joy.

Two coaches high in BS talked differently about recovery. C4-HBS had just finished the season and talked about how he found it hard to relax: "I cannot really sit down and have a cup of coffee . . . it is somehow down and then straight up again. So I don't think it is healthy over time, I don't. I work way too much" (C4-HBS). He also talked about the kind of situations he managed to psychologically detach himself from work, and he mentioned activities like working on the

house and cabin, or fixing things. “With things like that I manage to detach myself, but I need to work to be able to detach” (C4-HBS).

C3-HBS talked a lot about how difficult he found it to relax:

I don’t know [how to do it] to be honest. I have told a sport psychologist the same, that I really do not know how I can do it. I cannot picture myself walking in the woods for a couple of hours and then you are recovered, somehow, that is just not me. (C3-HBS)

The coach found it really hard to do relaxing activities and to psychologically detach, as for him it was challenging to go to public places like the gym, cafés, and restaurants. He mentions that going to a place where he could be anonymous could help him relax. As this was not an option, he only knew of only one solution for recovery on a daily basis:

I don’t have a problem understanding those coaches [who show signs of alcohol abuse] during a 10-year period . . . Well, yeah, relaxation for me is to go home and watch Premier League and drink a bottle of wine. But it does not continue after that. Then I start drinking Cola. It is actually relaxing and it is of course not healthy. (C3-HBS)

In addition, the coach talked about his problems with sleeping: “I cannot remember the last time I went to bed about 11:00 or 11.30 p.m. and slept to 7:00 a.m. I cannot remember doing that, it must have been several years ago.” He elaborated:

I think about it [soccer] around the clock. You get bad habits then, and you do not sleep well. It don’t do it now either, even though we do not have matches . . . you ruminate all the time . . . I fall asleep in front of the TV, and if I wake up during the night I put the TV on again because if I just lay there in a dark room, my thoughts just start wandering and the way to fall asleep again is to have the TV on because you just sit there and watch it and then I fall asleep. And of course I understand that it is not healthy. (C3-HBS)

Discussion

The qualitative results supported that the coaches were rightfully selected as higher in burnout dimensions based on their responses to their questionnaires, as they described themselves as increasingly exhausted and cynical in their job as the season went on. They experienced a wide range of burnout symptoms, such as fatigue, feeling lethargic, sleep disturbances, and short tempered. In contrast, the coaches with low levels of burnout on the questionnaires reported feeling energetic and pro-active and talked more frequently about experiencing energy-refills and joy. Together, these findings support that it is legitimate and valuable to compare the high versus low BS coach profiles.

Sport Specific Demands: Resources and Perceived Performance

Previous research indicated that working for a club with few resources (e.g., a small budget) could increase the demands of the coach and lead to exhaustion (Hjälmsjö et al., 2007). Our study did not find a clear distinction between the profiles based on club budget. Performance pressure is an important source of stress for elite coaches (Thelwell et al., 2008). However, neither goal attainment nor goal probability was associated with differences between the two investigated profiles. In contrast to our hypothesis, a coach low in BS scored below mean on these measures. He coped by focusing on his daily work assignments, which were in range of his control rather than on performance outcomes, which were outside his range of control (Folkman, 1984). This finding is in line with a meta-analysis showing that problem-focused coping relates negatively with all burnout dimensions (Shin et al., 2014), indicating that available resources or goal attainment might not be of relevance—rather, how coaches deal with different situations related to resources or performance is crucial.

Quality of Motivation

Both quantitative and the qualitative results indicated that three of the four coaches were highly intrinsically motivated. These findings are in line with the preliminary results, showing that head coaches in general were higher in autonomous motivation compared to other coaches in the soccer teams. An explanation of this could be that head coaches have more autonomy in their job compared to coaches who work under supervision of the head coach. In one coach high in BS at the end of the season, intrinsic work motivation was still high. This high quality of motivation among coaches may be explained by their unique relationship with the sport. Sport has been, and still is, a very important part of their lives. Being greatly involved in an activity over time could lead to the job becoming a part of one's identity (Vallerand & Houliort, 2003)—as one of the coaches stated “soccer is me in a way” (C2-LBS). Being highly autonomous in their job may place demands on all their abilities (Maslach & Leiter, 1997). It does not seem, however, that the high degree of intrinsic motivational regulation drove the coaches to work so hard that they got exhausted—rather the intrinsic motivational regulation prevented burn out (McLean et al., 2012). For instance, the coach who was high in BS and highly intrinsically motivated said: “What saves me [from total exhaustion] is the group of athletes, the locker room, and that I can develop myself” (C4-HBS). This coach was also above mean in introjected motivational regulation at the start of the season, a kind of motivation that made him work excessively, and which again was a likely contributor to him being higher in BS (McLean et al., 2012). In addition, C3-HBS had lower values of intrinsic regulation, and stated that if he were not able to continue coaching for the love of the sport he would rather quit. The quantitative results did not yield a clear difference between the coaches in motivational profiles, however, in combination with the qualitative results, the results became clearer. All coaches were highly involved in their sport, but both coaches high in BS were more strongly influenced by either

lower degrees of intrinsic motivation or a higher degree of introjected regulation. These findings are in line with previous research (Bentzen et al., in press b; Bentzen et al., 2015; McLean et al., 2012), and extend our understanding of the driving forces of coaching identities and love for the sport.

Work Demands vs. Meeting Recovery Needs

Together, quantitative and qualitative findings reveal differences between the coaches' psychological profiles. All coaches experienced high workload, which only became problematic for the two coaches high in BS. One coach driven by introjected motivation seemed to work excessively driven by his definition of what he felt it implied to be a head-coach, which led to working a colossal amount of hours a week. Further, for both coaches high in BS, the loss of energy related to a high-perceived workload was further expressed through the negative consequences this had on their private life. These findings are consistent with previous research with high-performance coaches and showed that it was not necessarily the workload that created exhaustion, though the high workload first and foremost created an interference with their private life (Bentzen et al., 2015; Lundkvist et al., 2012). This was especially true for C3-HBS, who elaborated on energy loss as affecting both his close as well as extended family. In contrast, the two coaches low in BS did not perceive disadvantages and interference with their private lives. C1-LBS expressed that he was aware that it could be a problem, and that he strived to prevent conflicts, and C2-LBS was below mean when it came to WHI. Combined, the results of workload and WHI explain the difference between the two profiles of BS. Further, looking at the ability to recover, as an important part of restoring energy in the resource balance, the coaches high in perceived workload and WHI seemed to be in great need of recovery.

The two coaches high in BS were significantly lower in both psychological detachment and recovery compared to the overall coaching population at the end of the season as expected. Unexpectedly, C1-LBS was also below the mean on these measurements. A possible explanation might be found in the quantitative measurement of psychological detachment, which focuses on a person's ability to psychologically detach from work when off work (Sonnentag & Fritz, 2007). However, this does not consider the kind of thoughts employees have when thinking about work in leisure time. C1-LBS explained how his thoughts often were neutral or positive and revolved around problem solving. Even though he stated that it could be tiring when problems occurred, he often found it energizing as he was often able to solve problems when thinking about work in leisure time. These kinds of thoughts (e.g., neutral or positive) are in contrast to those of C3-HBS, who ruminated about work in a negative manner during leisure time. The nature of the thoughts is therefore of importance in future research when examining predictions based on lower ability to psychologically detach.

Both coaches high in BS found it hard to relax. C3-HBS stated that he did not know how to relax on a daily basis and that he struggled with sleep disturbances (Ekstedt et al., 2006). The relaxation strategy he found most efficient on a daily basis was drinking alcohol. Alcohol consumption has previously been described as a strategy to achieve psychological detachment from the stress of work among elite sport coaches (Olusoga et al., 2010). Negative work experiences predict negative work rumination, which again is positively related to heavy alcohol use, workday alcohol use, and after work alcohol use (Frone, 2014). The most effective recovery strategy of C4-HBS was working physically with for instance handcraft. Choosing deliberately to do other activities so that the mind is occupied with this activity could be a helpful detachment strategy (Sonntag, Kuttler, & Fritz, 2010). However, if this is the only recovery strategy, it is

not sufficient in the long run. Contrary, C2-LBS displayed recovery skills above mean for both psychological detachment and relaxation, and he deliberately paid attention to recovery in his everyday life as a coach to be able to stay in the profession for many years.

Summarized, the coaches who were high in BS perceived an imbalance between resources and demands when compared to coaches' low in BS. Overall, these results suggest a need for improved recovery strategies and implementing these in elite level soccer coaches. Coaching education as well as sport organizations should address this need.

Limitations and Future Research

A large part of the results from the current study stems from qualitative data. Even though the coaches were purposefully selected based on their quantitative data compared to the other coaches, their story is still "their" story as head coaches and cannot be generalized. Future studies should target other soccer coaching professions to get a better understanding of their experienced causes of variation in BS. The findings indicated that there might be a difference in how the coaches high versus low in BS coped with demanding situations. However, more research is needed to better understand coaches' interpretation of situations they are in, and further explore whether their coping strategies could serve as explanatory variables of variation in BS (Folkman, 1984). Future research should also examine alcohol use as a psychological recovery strategy among coaches as it could lead to undermining employee health (Frone, 2014).

Conclusions

High-performance soccer coaches have a personal relationship with their profession and sport. This explains why they in general are highly motivated and willing to invest a lot of effort for their work. Results from our study indicated that coaches higher in BS were less self-determined in their motivation over the season. Further, all coaches expressed a high perceived

workload. However, differences between levels of BS experienced by coaches were predicted by how they managed their WHI and their ability to recover. The two coaches experiencing higher levels of WHI also expressed greatest difficulties being able to recover sufficiently, which led to higher levels of BS. Overall, the findings suggest that sports organizations as employers in close collaborations with the coaches can prevent higher levels of BS: First, fun and interesting aspects of the job should be a part of their everyday work life, as sustainable self-determined motivation could help the coaches stay vigorous in a demanding job over time. Second, there is a need for thorough planning about how to combine a healthy family life with a healthy coaching life. Finally, greater attention needs to be addressed towards adequate recovery, as this seems crucial to sustain healthy as a high-performance coach.

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Table 1

Alpha, N, Mean and SD for Total and Individual Values for Interviewed Coaches

	Total Population				Interviewed Coaches			
	α	N	M	SD	C1-LBS	C2-LBS	C3-HBS	C4-HBS
Exhaustion T1	.87	90	1.65	1.11	1.00	0.60	2.40	4.00↑
Exhaustion T2	.92	59	2.00	1.30	1.40	0.40	4.80↑	3.40↑
Cynicism T1	.56	90	1.04	.87	1.20	.00↓	.80	2.00↑
Cynicism T2	.76	59	1.37	1.09	.80	.00↓	2.00	2.80↑
Reduced accomplishment T1	.78	90	1.00	.80	.50	.17↓	1.17	.17↓
Reduced accomplishment T2	.90	56	1.08	1.00	.00↓	.50	.83	1.00
Budget club		92	xx	xx	xx↑	xx	xx↑	xx
Goal attainment T2		56	5.02	1.72	1.00↓	7.00↑	5.00	7.00↑
Goal probability T2		55	5.36	1.76	1.00↓	7.00	6.50	7.00
Intrinsic regulation T1	.90	89	6.33	.64	7.00↑	7.00↑	5.00↓	7.00↑
Intrinsic regulation T2	.94	60	6.01	.94	7.00↑	7.00↑	6.00	7.00↑
Identified regulation T1	.55	86	5.25	1.18	5.75	7.00↑	4.50	7.00↑
Identified regulation T2	.80	59	5.28	1.08	6.50	7.00↑	5.00	7.00↑
Introjected regulation T1	.61	88	4.88	1.24	5.25	4.25	4.25	7.00↑
Introjected regulation T2	.51	61	5.21	1.00	4.25	4.00↓	5.75	7.00↑
External regulation T1	.84	92	3.35	1.49	2.67	4.00	3.33	4.67
External regulation T2	.90	61	3.62	1.55	4.00	3.67	2.00↓	2.00↓

Workload T1	.74	89	4.10	1.11	4.33	2.83↓	3.83	6.00↑
Workload T2	.85	58	4.25	1.16	4.83	2.83↓	5.17	6.00↑
WHI T1	.72	91	2.29	.42	2.00	1.80↓	2.80↑	3.20↑
WHI T2	.80	59	2.36	.46	2.00	1.80↓	3.00↑	2.80
Psych detach T1	.81	92	2.83	1.13	1.50↓	4.50↑	2.00	2.75
Psych detach T2	.87	60	2.95	1.35	1.50↓	4.00	1.50↓	1.00↓
Relaxation T1	.75	91	4.49	1.26	2.25↓	6.25↑	2.00↓	2.75↓
Relaxation T2	.83	61	4.13	1.40	2.50↓	6.00↑	1.75↓	1.00↓

Note. ↓ = One standard deviation below the mean; ↑ = one standard deviation above the mean.

C1-LBS = Coach 1—Low-Burnout Symptoms (C1-LBS); Coach 2—Low-Burnout Symptoms (C2-LBS); Coach 3—High-Burnout Symptoms (C3-HBS); Coach 4—High-Burnout Symptoms (C4-HBS). xx = anonymized data.

Table 2

Descriptive Statistics for Total Population and Interviewed Coaches

	Total Population			Interviewed Coaches			
	<i>N</i>	<i>M (SD)</i>	<i>Range</i>	C1-LBS	C2-LBS	C3-HBS	C4-HBS
Age	92	40.4 (7.3)	25—58	50—55↑	40—45	40—45	50—55↑
Experience	91	10.9 (7.2)	1—30	20↑	12	7	28↑
Travel days a year*	54	49.4 (24.4)	15—120	100↑	30	30	90↑
Work hours a week*	54	47.7 (11.3)	20—75	60↑	40	50	70↑

Note. ↓ = One standard deviation below the mean; ↑ = one standard deviation above the mean.

C1-LBS = Coach 1—Low-Burnout Symptoms (C1-LBS); Coach 2—Low-Burnout Symptoms (C2-LBS); Coach 3—High-Burnout Symptoms (C3-HBS); Coach 4—High-Burnout Symptoms (C4-HBS). To ensure anonymity for the interviewed coaches, only their “age span” was reported.

*The statistics for these variables are based only on those working 100%.

Appendix I:

Advertisement Paper I

Advertisement paper I:

Have you been highly exhausted as a sport coach?

Then you have experienced something that is of value for us!

The research project «Prevention of exhaustion in Norwegian sport coaches» aims to increase knowledge about personal and environmental factors influencing sport coaches in the process towards exhaustion.

Results will be used to enhance knowledge about important preventive factors of exhaustion for sport coaches to inform sports organizations and to be implemented in coaching education in Norway.

If you have experienced being highly exhaustion while working as a high-performance coach and would like to share your experiences, we invite you to participate in an interview of about one hour. All information will be anonymized and treated confidentially. The project has been approved by the Regional Committees for Medical and Health Research Ethics (REC).

The study is a part of the doctoral work of Marte Bentzen, supervised by Dr. P-Nicolas Lemyre, at the department of coaching and psychology at the Norwegian School of Sport Sciences.

If you want to participate in the study, or want more information, please contact: Marte Bentzen; e-mail: marte.bentzen@nih.no, cellphone: xx xx xx xx or Nicolas Lemyre ; e-mail: nicolas.lemyre@nih.no, cellphone: xx xx xx xx.

Appendix II:

Example of recommendation letter for the research project from some Sport Federations

Recommendation letter from the Swedish Soccer Federation (in Swedish)

Recommendation letter from the Norwegian Ski Federation (in Norwegian)



**SVENSKA
FOTBOLL
FÖRBUNDET**

BOX 1216
SE-171 23 SOLNA
SWEDEN

RÅSUNDA STADION
INGÅNG 104

TELEFON
08-735 09 00

TELEFAX
08-735 09 01

E-POST
svff@svenskfotboll.se

WEBBPLATS
svenskfotboll.se

BANKGIRO
620-7799

PLUSGIRO
4633-4

ORGANISATIONS-
NUMMER
815200-1916

Solna 2011-04-06

Rekommendation att delta i forskningsprojektet:

"Elittränarens situation inom idrotten - balansen mellan resurser och krav?"

Svenska Fotbollförbundet ger sin rekommendation till forskningsprojektet:

"Elittränarens situation inom idrotten - balansen mellan resurser och krav?"

Svenska Fotbollförbundet tycker det är viktigt och av stor betydelse att sätta fokus på elittränare som yrkesgrupp. Syftet med denna studie är att undersöka vad som kännetecknar en väl fungerande tränarsituation med hänsyn till ett samspel med arbetsmiljön. Vi uppmuntrar att alla våra tränare i vårt förbund deltar i studien. Preliminära resultat kommer att redovisas på vår tränarkonferens i oktober.

SVENSKA FOTBOLLFÖRBUNDET

Utbildningsavdelningen

Per Widén, Utbildningschef





Norges Skiforbund
Norwegian Ski Federation
NO-0840 Oslo
Besøksadresse: Sognsveien 75, Ullevål Stadion

T: (+47) 21 02 90 00 – F: (+47) 21 02 94 01
Org.nr. 821 596 572

skiforbundet.no – post@skiforbundet.no

Oslo, 6. september 2011

Anbefaling av forskningsprosjektet:

”Trenere i idrett – balanse mellom ressurser og krav?”

NORGES SKIFORBUND/Langrenn gir sin anbefaling til forskningsprosjektet
”Trenere i idrett – balanse mellom ressurser og krav?”.

NORGES SKIFORBUND synes det er viktig at det settes søkelys på trenere som yrkesgruppe, hvor formålet i denne studien er å se på hva som karakteriserer et velfungerende arbeidsmiljø, hvor personlige faktorer hos treneren i samspill med faktorer i arbeidsmiljøet settes i fokus.

Vi anbefaler alle trenere i vårt forbund om å delta i studien.

Med vennlig hilsen
Norges Skiforbund

Per Nymoen
utviklingssjef

Appendix III:

Information letter to participants

Consent form from the Norwegian Social Science Data Services (NSD)

Consent form from the Regional Ethical Review Board in Sweden (EPN)

Information about research project:

"Coaches in sports - balance between resources and demands?"

The purpose of this study is to shed light on the work situation and well-being of coaches in Norwegian and Swedish elite-sport, by investigating how exhaustion in coaches can be prevented, and how work satisfaction, commitment and perseverance can be promoted. Both personal and workplace factors will be investigated.

Coaches from 10 different sports will be included in this study covering a whole season. Questionnaires will be sent to you on three occasions during the year, corresponding to the beginning, the halfway, and the end of the 20xx season. 25 minutes will be necessary to fill out the questionnaire.

Shortly, you will receive an email leading you to your own personal webpage to answer the questionnaire. Questback will be used as an online tool to store your answers with high degree of security and confidentiality.

Participation in the study is voluntary. You can withdraw your consent to participate in the study at any time and without stating any particular reason. Only the members of the project staff have access to the study data. All data will be treated strictly confidential and securely stored. The results will be made anonymous and thus unrecognizable.

What does coaches and clubs gain out of participation in this project?

The research aims to provide practical suggestions based on the findings of this study; how well-being can be promoted in the work of elite sport coaches. All participating coaches and clubs will be offered a presentation of study findings by project completion. As a symbolic thank you for using your time to answer the questions, we will send you a gift-certificate on two cinema tickets if you answer at all three time points.

The *National Sport Association* (changed according to what sport invited) has given their written recommendation to the study, and encourages all elite coaches to participate. The project has been approved by the Norwegian Social Science Data Services (NSD) / the Regional Ethical Review Board in Sweden (EPN)

If you have any questions regarding this request, please contact us.

Sincerely,

Nicolas Lemyre
Associate Professor
The Norwegian School of
Sport Sciences

Göran Kenttä
Associate Professor
The Swedish School of
Sport and Health Sciences

Marte Bentzen
PhD-candidate
The Norwegian School of
Sport Sciences



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Norway
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www.nsd.uib.no
Org.nr. 985 321 884

Marte Bentzen
Seksjon for coaching og psykologi
Norges idrettshøgskole
Postboks 4014 Ullevål Stadion
0806 OSLO

Vår dato: 14.03.2011

Vår ref: 26524 / 3 / MSS

Deres dato:

Deres ref:

TILRÅDING AV BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 01.03.2011. All nødvendig informasjon om prosjektet forelå i sin helhet 14.03.2011. Meldingen gjelder prosjektet:

26524

Behandlingsansvarlig

Daglig ansvarlig

Trenere i idrett – balanse mellom ressurser og krav?

Norges idrettshøgskole, ved institusjonens øverste leder

Marte Bentzen

Personvernombudet har vurdert prosjektet, og finner at behandlingen av personopplysninger vil være regulert av § 7-27 i personopplysningsforskriften. Personvernombudet tilrår at prosjektet gjennomføres.

Personvernombudets tilråding forutsetter at prosjektet gjennomføres i tråd med opplysningene gitt i meldeskjemaet, korrespondanse med ombudet, eventuelle kommentarer samt personopplysningsloven/-helseregisterloven med forskrifter. Behandlingen av personopplysninger kan settes i gang.

Det gjøres oppmerksom på at det skal gis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget skjema, http://www.nsd.uib.no/personvern/forsk_stud/skjema.html. Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet.

Personvernombudet har lagt ut opplysninger om prosjektet i en offentlig database, <http://www.nsd.uib.no/personvern/prosjektoversikt.jsp>.

Personvernombudet vil ved prosjektets avslutning, 31.12.2013, rette en henvendelse angående status for behandlingen av personopplysninger.

Vennlig hilsen

Bjørn Henrichsen

Marie Strand Schildmann

Kontaktperson: Marie Strand Schildmann tlf: 55 58 31 52

Vedlegg: Prosjektvurdering



Formålet med prosjektet er å undersøke hvilke risikofaktorer som ligger til grunn for at enkelte elitetrenerer blir utsatt for utbrenthetssymptomer i løpet av sin karriere, og hvilke miljøfaktorer, psykologiske egenskaper og ferdigheter som kan forebygge utbrenthet i trenervirksomhet ved å se på menneskets og miljøets ressurser.

Prosjektet er lagt frem for REK, som i vedtak av 24.02.2011 fant at prosjektet ikke var fremleggelsespliktig.

Utvalget for studien er elitetrenerer og landslagstrenerer i Norge og Sverige innenfor idrettene fotball, handball, volleyball, basket, ishockey, langrenn, hopp, kombinert, alpint, skøyter, skiskyting, friidrett, svømming og orientering, totalt ca. 600 trenere. Utvalget rekrutteres gjennom ledelsen i hvert enkelt særforbund og klubb, som utleverer kontaktinformasjon (hovedsaklig e-postadresser) og utvalget kontaktes med forespørsel om deltakelse.

Personvernombudet finner informasjonsskriv av 14.03.2011 tilfredsstillende.

Datamaterialet innhentes gjennom personlig intervju og elektronisk spørreskjema som sendes ut til utvalget på tre forskjellige tidspunkt i løpet av sesongen. En foretar en strategisk utvelgelse av ca. 20 trenere til intervjuundersøkelsen på bakgrunn av besvart spørreundersøkelse.

Det innhentes direkte personidentifiserende opplysninger i form av navn og e-postadresser. I spørreundersøkelsen innhentes bl.a. opplysninger om den enkeltes opplevelse av balanse eller ubalanse med arbeidslivet i forhold til variablene arbeidsmengde, tilbakemelding og verdier, tilfredsstillelse av psykologiske behov, motivasjonell regulering på jobb, jobb-hjem-konflikt, utbrenthet, vitalitet, og restitusjon. De samme temaene vil bli belyst i forbindelse med intervjuundersøkelsen. En vil ta høyde for at det i intervjusituasjonen kan fremkomme sensitive personopplysninger om helseforhold jf. pol § 2, punkt 8 c.

Det vil ikke systematisk innhentes opplysninger om tredjeperson, men intervjuguiden åpner opp for at det kan fremkomme opplysninger om leder/kollegaer/ektefelle/samboer. Stipendiat bekrefter i telefonsamtale 14.03.2011 at intervjuobjektene orienteres om informasjonsplikten i forbindelse med behandlingen av opplysninger om tredjeperson, at det er ønskelig at beskrivelser av andre ikke er personidentifiserende, samt at samboer/ektefelle vil informeres om undersøkelsen.

QuestBack er databehandler i prosjektet. Ombudet forutsetter at det foreligger en databehandleravtale mellom Norges idrettshøgskole og QuestBack, jf. personopplysningsloven § 15.

Prosjektsslutt er 31.12.2013. Datamaterialet anonymiseres ved at verken direkte eller indirekte personidentifiserende opplysninger fremgår, verken hos forsker eller QuestBack. Med anonyme forstås opplysninger som ikke på noe vis kan identifisere enkeltpersoner i et datamateriale. Koblingsnøkkel, logger, adresser og lydfiler slettes. Indirekte personidentifiserende opplysninger som. feks. navn på klubb, særforbund og innenfor hvilken idrett den enkelte er trener, fjernes, omskrives eller grovkategoriseres.

Avdelning 5

Ordförande

Birgitta Widebäck

Ledamöter med vetenskaplig kompetens

Claes-Robert Julander (*företagsekonomi*), vetenskaplig sekreterare

Katrin Goldstein-Kyaga (*etnicitet*), deltar ej i ärende 2011/314-32

Sven Ove Hansson (*filosofi*)

Ilona Koupil (*ojämlikhet i hälsan*)

Staffan Marklund (*arbetsliv*), deltar ej i ärende 2011/148-31/5

Jerzy Sarnecki (*allmän kriminologi*), deltar ej i ärende 2011/314-32

Ann-Charlotte Smedler (*psykologi*)

Sten-Åke Stenberg (*sociologi*), deltar ej i ärendena 2011/314-32 och 2011/155-31/5

David Titelman (*psykologi*)

Ledamöter som företräder allmänna intressen

Maria Modig

Anders Rehn

Annika Sandström

Elisabeth Wennerholm

Anne Wompa

Övriga

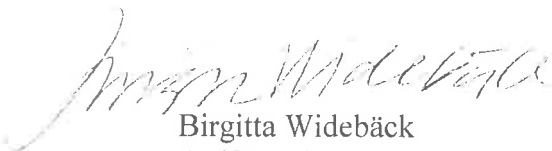
Ann-Christin Becker, administratör

§ 1 Ordföranden förklarar sammanträdet öppnat.

§ 2 Den administrativa sekreteraren anmäler att den vetenskaplige sekreteraren sedan föregående möte den 10 februari 2011 har fattat 2 beslut i ärende som avser ändring av ett godkännande.

§ 3 Ansökningar om etisk granskning av forskningsprojekt, se **Bilaga**.

§ 4 Ordföranden förklarar mötet avslutat och meddelar att nästa sammanträde i avdelning 5 äger rum torsdagen den 7 april 2011.



Birgitta Widebäck
Ordförande



Claes-Robert Julander
Protokollförare, vetenskaplig sekreterare

Utdrag ur protokoll från sammanträde den 10 mars 2011 i avdelningen 5.

Nya ärenden

Dnr 2011/210-31/5
Föredragande
David Titelman

Sökande: Gymnastik och Idrottshögskolan
Behörig företrädare: Karin Henriksson Larsén
Projekt: Elitränare i idrott – balans mellan resurser och krav?
Forskare som genomför projektet: Göran Kenttä

BESLUT

Nämnden godkänner forskningen under förutsättning att korrekt benämning på etikprövningsnämnden anges i informationsbrevet: "Regionala etikprövningsnämnden i Stockholm".

Hur man överklagar, se övrig information

Beslut expedierat till behörig företrädare.
Kopia för kännedom till ansvarig forskare.
Att utdraget överensstämmer med originalet intygar:



Ann-Christin Becker, administratör/expedierat. 2011-03-17

Appendix IV:

Interview guide paper I
Interview guide paper IV

Interview guide Paper I:

“Prevention of exhaustion in professional coaches”

This interview concerns your experiences of being exhausted as a sport coach.

I have some questions outlined to ensure that we get to talk about topics that are of interest for the research question, but this is not a structure that we will follow from point to point. If you want to add something along the way, this is just fine. This list of questions is mostly as reminder for me on what topics I would like to talk about with you.

None of your answers will be considered as either right or wrong. What is important is that you get to tell your story as you experienced it.

I might make some notes during the interview in addition to recording our conversation. This is just to help myself remember what we have discussed and topics that I would like to ask more about later during the interview.

I would underline that your participation in this interview is volunteer, and that it is your choice whether you want to answer the questions and how much you want to share. You can also stop the interview at any time if you feel like it, and you do not have to give me a reason why.

Part One – Introduction and demography

1. To start with, could you please tell me shortly about your career as a coach? Draw a timeline.
2. Why did you want to become a coach?
3. Can you tell me briefly about the job you had when you experienced higher levels of exhaustion?
4. How was the work load? (Total workload, travel)

Part Two– Exhaustion process

5. Can you tell me how and when you started to become exhausted?
6. Moreover, how did it develop?
7. How did a typical workweek look like during this period?
8. Do you think it was something special that triggered this process?
9. Can you explain what symptoms you experienced?
10. Did the symptoms have any consequences for your everyday life?
11. Have you previously experienced symptoms like this during your coaching career?

Part three – Your relationship to work and significant others during the exhaustion process

12. How was your motivation to do your job during this period?
13. How did you manage your job during this period?
14. How was your relationship and cooperation with your colleagues?
15. How was your relationship and cooperation with your superiors?
16. How was the relationship and cooperation with your athletes?
17. How was the relationship with your family during this period?
18. To what extent did your surroundings support you during this period?
19. (In what way did your surroundings support you / not support you)?
20. How was the performance of your athletes in this period?

Part four – Dealing with symptoms in relation to exhaustion process

21. How did you try to cope / deal with the symptoms when they arrived?
22. What worked (potentially)?
23. What did not work (potentially)?
24. Can you tell me about the process going from being exhausted to becoming better?

Part five – Motivation to stay in the profession, and about the future?

25. What do you do today?
26. Did you learn anything from the process?
27. Do you / how do you picture your future as a coach?

Elaboration probes: When you say XX, can you explain this in greater depth?

Clarification Probes: I am not sure I understood what you meant about XX. Can you try to explain/describe it again? Can you explain/describe it with other words?

Thank you very much! I think that is everything I would like to ask you. But before we finish, is there anything you would like to ask, or add that you feel we have not covered?

Interview guide Paper IV:

“Differences in Burnout in High-Performance Soccer Coaches”

This interview concerns your experiences of the competitive season 20xx- xx.

You are selected based on the responses you gave on the questionnaires at season start and end, which was the first part of this study. However, even if I have this information, I now want a conversation with you on similar topic and focus on your own experiences.

I have some questions outlined to ensure that we get to talk about topics that are of interest for the research question, but this is not a structure that we will follow from point to point. If you want to add something along the way, it is just fine. This list of questions is mostly as a reminder of what topics that I would like to talk about with you.

None of your answers will be considered as either right or wrong. What is important is that you get to tell your story as you experienced it.

I might make some notes during the interview in addition to recording our conversation. This is just to help myself remember what we have discussed and topics that I would like to ask more about later during the interview.

I would underline that your participation in this interview is volunteer, and that it is your choice whether you want to answer to the questions and how much you want to share. You can also stop the interview at any time if you feel like it, and you do not have to give me a reason why.

A – Introduction and demography

1. To start with, could you please tell me shortly about your career as a coach?
2. Can you briefly describe the job you have today?
3. How would you describe your typical work week?
4. Can you tell me how the competitive season 20xx-xx has been for you as a coach?

B – Motivation at work

5. Why are you a coach?
6. How is your relations/cooperation with your colleagues?
7. How is your relations/cooperation with your superiors?
8. How is your relations/cooperation with your athletes?
9. What gives you energy at work?
10. What makes you happy at work?
11. What is draining energy at work?
12. What makes you tired/irritated at work?

C – Relationship between work and home

13. How would you describe your relationship/cooperation in your private life / family life?
14. How do you combine work and private life / family life?

D – Recovery

15. What is recovery for a coach?
16. How do you recover as a coach?

E – Performance

17. To what extent were your goals for the season attained?
18. How does winning and losing affect you?

Elaboration probes: When you say XX, can you explain this in greater depth?

Clarification Probes: I am not sure I understood what you meant about XX. Can you try to explain/describe it again? Can you explain/describe it with other words?

Appendix V:

Questionnaire Time 1
Questionnaire Time 3

Questionnaire sent out at T1

Coaches in sport – balance between resources and demands?

Hi,

When you answer the questions in this survey, please respond to how you feel in regards to your job as a coach.

All data will be treated strictly confidential and securely stored. The results will be made anonymous and thus unrecognizable.

Thank you in advance for taking the time to answer this questionnaire.

Consent for participation in the study

1) I am willing to participate in the study

- Yes
- No

2) What is your age?

3) Gender

- Female
- Male

4) What is your professional title (as a coach)?

5) Specified in percentage, how large a share of your position is the job as coach?

6) Approximately, how many work related travel days do you have during a year as a coach?

7) On average, how many hours do you work per week as a coach?

8) On average, how many hours per week do you work in direct contact with the athletes?

9) For how many years have you worked as a coach?

10) Support from superior

The questions below contain items that are related to your experience with the superior who is your most immediate superior. Superiors (e.g. "boss) have different styles in dealing with employees, and we would like to know more about how you have felt about your encounters with your immediate superior.

We will remind you that your responses are confidential.

How do you agree with the statements below on a scale from 1 to 7, where 1 is "strongly disagree" and 7 is "strongly agree".

I feel that my boss provides me choices and options

I feel understood by my boss

My boss conveyed confidence in my ability to do well at my job

My boss encouraged me to ask questions

My boss listens to how I would like to do things

My boss tries to understand how I see things before suggesting a new way to do things

I feel a lot of trust in my boss

I feel that my boss cares about me as a person

11) Areas of work life

How do you agree with the statements below on a scale from 1 to 7, where 1 is "strongly disagree" and 7 is "strongly agree".

I do not have time to do the work that must be done

I work intensely for prolonged periods of time

After work I come home too tired to do the things I like to do

I have so much work to do on the job that it takes me away from my personal interests

I have enough time to do what's important in my job

I leave my work behind when I go home at the end of the workday

I receive recognition from others for my work

My work is appreciated

My efforts usually go unnoticed

I do not get recognized for all the things I contribute

My values and the organization's values are alike

The organization's goals influence my day to day work activities

My personal career goals are consistent with the organization's stated goals

This organization is committed to quality

Working here forces me to compromise my values

12)

The following questions concern your feelings about your job during the last year. (If you have been on this job for less than a year, this concerns the entire time you have been at this job.)

Please indicate how true each of the following statement is for you given your experiences on this job. Remember that your manager will never know how you responded to the questions.

How do you agree with the statements below on a scale from 1 to 7, where 1 is "strongly disagree" and 7 is "strongly agree".

When I Am At Work:

I feel like I can be myself at my job

At work, I often feel like I have to follow other people's commands

If I could choose, I would do things at work differently

The tasks I have to do at work are in line with what I really want to do

I feel free to do my job the way I think it could best be done

In my job, I feel forced to do things I do not want to do

I really master my tasks at my job

I feel competent at my job

I am good at the things I do in my job

I have the feeling that I can even accomplish the most difficult tasks at work

I don't really feel connected with other people at my job

At work, I feel part of a group

I don't really mix with other people at my job

At work, I can talk with people about things that really matter to me

I often feel alone when I am with my colleagues

Some people I work with are close friends of mine

13)

How do you agree with the statements below on a scale from 1 to 7,
where 1 is "strongly disagree" and 7 is "strongly agree".

I put effort in my work:

To get others' approval (e.g., supervisor, colleagues, family, athletes)

Because others will respect me more (e.g., supervisor, colleagues, family, athletes)

To avoid being criticized by others (e.g., supervisor, colleagues, family, athletes)

Because others will reward me financially only if I put enough effort in my job (e.g., employer, supervisor, ...)

Because others offer me greater job security if I put enough effort in my job (e.g., employer, supervisor...)

Because I risk losing my job if I don't put enough effort in it

Because I have to prove to myself that I can

Because it makes me feel proud of myself

Because otherwise I will feel ashamed of myself

Because otherwise I will feel bad about myself

Because I personally consider it important to put efforts in this job

Because putting efforts in this job aligns with my personal values

Because putting efforts in this job has personal significance to me

Because it has become a well-established habit / routine to me

Because it has been incorporated as my particular goal at work

Because it has become a natural habit to me

Because it has become a natural part of my life

Because I have fun doing my job

Because what I do in my work is exciting

Because the work I do is interesting

14) Recovery

How do you agree with the statements below on your free time (when you are not at work)?

Use the scale from 1 to 7, where 1 is "strongly disagree" and 7 is "strongly agree".

I forget about work

I don't think about work at all

I distance myself from work

I get a break from the demands of work

I kick back and relax

I do relaxing things

I use the time to relax

I take time for leisure

15)

1 Never 2 Sometimes 3 Often 4 Always

Use the scale above and tick the number that best describes how often it happens that:

... you are irritable at home because your job is demanding?

... your duties at work makes it difficult for you to relax at home?

... your working hours conflict with your private life?

... when you get home from work you do not have the energy to do the things you enjoy doing?

... your job takes up time that you otherwise would have spent with your partner / family / friends?

16) Work load

Use the scale below and tick the number that best describes how often you have experienced any of these feelings in relation to your job. If you've never had this thought or feeling, check the "0" (zero) on the line for that statement.

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

I feel emotionally drained from my work

I feel used up at the end of the workday

I feel tired when I get up in the morning and have to face another day on the job

Working all day is really a strain for me

I can effectively solve the problems that arise in my work

I feel burned out from my work

I feel I am making an effective contribution to what this organization does

I have become less interested in my work since I started this job

I have become less enthusiastic about my work

In my opinion, I am good at my job

I feel exhilarated when I accomplish something at work

I have accomplished many worthwhile things in this job

I just want to do my job and not to be bothered

I have become more cynical about whether my work contributes anything

I doubt the significance of my work

At my work I feel confident that I am effective at getting things done

17) Vitality at work

Consider how the following scale is suitable for you in terms of how things have been generally at work for the past 4 weeks.

Use the scale from 1 to 7, where 1 is "strongly disagree" and 7 is "strongly agree".

I feel alive and vital

I have energy and spirit

I look forward to each new day

I nearly always feel alert and awake

Sometimes I feel so alive I just want to burst

I feel energized

18) Satisfaction with work

Consider how the following scale is suitable for you in terms of how things have been generally at work for the past 4 weeks.

Use the scale from 1 to 7, where 1 is "strongly disagree" and 7 is "strongly agree".

In most ways my work-life is close to my ideal

The conditions of my work-life are excellent

I am satisfied with my work-life

So far I have gotten the important things I want by being a coach

If I could change things about my work, I would change almost nothing

19) Finally

Have you ever felt completely exhausted as a coach?

- Yes
- No

Have you ever been on sick leave from work as a coach because of exhaustion/fatigue?

- Yes
- No

Do you know of other coaching colleagues who have "hit the wall"?

- Yes
- No

Thank you for your participation in this project!

Questionnaire sent out at T2 and T3

Coaches in sport – balance between resources and demands?

Hi,

When you answer the questions in this survey, please respond to how you feel in regards to your job as a coach.

All data will be treated strictly confidential and securely stored. The results will be made anonymous and thus unrecognizable.

Thank you in advance for taking the time to answer this questionnaire.

1) Support from superior

The questions below contain items that are related to your experience with the superior who is your most immediate superior. Superiors (e.g. "boss") have different styles in dealing with employees, and we would like to know more about how you have felt about your encounters with your immediate superior.

We will remind you that your responses are confidential.

How do you agree with the statements below on a scale from 1 to 7, where 1 is "strongly disagree" and 7 is "strongly agree".

I feel that my boss provides me choices and options

I feel understood by my boss

My boss conveyed confidence in my ability to do well at my job

My boss encouraged me to ask questions

My boss listens to how I would like to do things

My boss tries to understand how I see things before suggesting a new way to do things

I feel a lot of trust in my boss

I feel that my boss cares about me as a person

2) Areas of work life

How do you agree with the statements below on a scale from 1 to 7, where 1 is "strongly disagree" and 7 is "strongly agree".

I do not have time to do the work that must be done

I work intensely for prolonged periods of time

After work I come home too tired to do the things I like to do

I have so much work to do on the job that it takes me away from my personal interests

I have enough time to do what's important in my job

I leave my work behind when I go home at the end of the workday

I receive recognition from others for my work

My work is appreciated

My efforts usually go unnoticed

I do not get recognized for all the things I contribute

My values and the organization's values are alike

The organization's goals influence my day to day work activities

My personal career goals are consistent with the organization's stated goals

This organization is committed to quality

Working here forces me to compromise my values

3)

The following questions concern your feelings about your job during the last year. (If you have been on this job for less than a year, this concerns the entire time you have been at this job.)

Please indicate how true each of the following statement is for you given your experiences on this job. Remember that your manager will never know how you responded to the questions.

How do you agree with the statements below on a scale from 1 to 7, where 1 is "strongly disagree" and 7 is "strongly agree".

When I Am At Work:

I feel like I can be myself at my job

At work, I often feel like I have to follow other people's commands

If I could choose, I would do things at work differently

The tasks I have to do at work are in line with what I really want to do

I feel free to do my job the way I think it could best be done

In my job, I feel forced to do things I do not want to do

I really master my tasks at my job

I feel competent at my job

I am good at the things I do in my job

I have the feeling that I can even accomplish the most difficult tasks at work

I don't really feel connected with other people at my job

At work, I feel part of a group

I don't really mix with other people at my job

At work, I can talk with people about things that really matter to me

I often feel alone when I am with my colleagues

Some people I work with are close friends of mine

4)

How do you agree with the statements below on a scale from 1 to 7,
where 1 is "strongly disagree" and 7 is "strongly agree".

I put effort in my work:

To get others' approval (e.g., supervisor, colleagues, family, athletes)

Because others will respect me more (e.g., supervisor, colleagues, family, athletes)

To avoid being criticized by others (e.g., supervisor, colleagues, family, athletes)

Because others will reward me financially only if I put enough effort in my job (e.g., employer, supervisor, ...)

Because others offer me greater job security if I put enough effort in my job (e.g., employer, supervisor...)

Because I risk losing my job if I don't put enough effort in it

Because I have to prove to myself that I can

Because it makes me feel proud of myself

Because otherwise I will feel ashamed of myself

Because otherwise I will feel bad about myself

Because I personally consider it important to put efforts in this job

Because putting efforts in this job aligns with my personal values

Because putting efforts in this job has personal significance to me

Because it has become a well-established habit / routine to me

Because it has been incorporated as my particular goal at work

Because it has become a natural habit to me

Because it has become a natural part of my life

Because I have fun doing my job

Because what I do in my work is exciting

Because the work I do is interesting

5) Recovery

How do you agree with the statements below on your free time (when you are not at work)?

Use the scale from 1 to 7, where 1 is "strongly disagree" and 7 is "strongly agree".

I forget about work

I don't think about work at all

I distance myself from work

I get a break from the demands of work

I kick back and relax

I do relaxing things

I use the time to relax

I take time for leisure

6)

1 Never 2 Sometimes 3 Often 4 Always

Use the scale above and tick the number that best describes how often it happens that:

... you are irritable at home because your job is demanding?

... your duties at work makes it difficult for you to relax at home?

... your working hours conflict with your private life?

... when you get home from work you do not have the energy to do the things you enjoy doing?

... your job takes up time that you otherwise would have spent with your partner / family / friends?

7) Work load

Use the scale below and tick the number that best describes how often you have experienced any of these feelings in relation to your job. If you've never had this thought or feeling, check the "0" (zero) on the line for that statement.

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

I feel emotionally drained from my work

I feel used up at the end of the workday

I feel tired when I get up in the morning and have to face another day on the job

Working all day is really a strain for me

I can effectively solve the problems that arise in my work

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I have become more cynical about whether my work contributes anything

I doubt the significance of my work

At my work I feel confident that I am effective at getting things done

8) Vitality at work

Consider how the following scale is suitable for you in terms of how things have been generally at work for the past 4 weeks.

Use the scale from 1 to 7, where 1 is "strongly disagree" and 7 is "strongly agree".

I feel alive and vital

I have energy and spirit

I look forward to each new day

I nearly always feel alert and awake

Sometimes I feel so alive I just want to burst

I feel energized

9) Satisfaction with work

Consider how the following scale is suitable for you in terms of how things have been generally at work for the past 4 weeks.

Use the scale from 1 to 7, where 1 is "strongly disagree" and 7 is "strongly agree".

In most ways my work-life is close to my ideal

The conditions of my work-life are excellent

I am satisfied with my work-life

So far I have gotten the important things I want by being a coach

If I could change things about my work, I would change almost nothing

11) Goals

If you look back at season start, what were your two most important goals for the current season?

Please write goal number 1 in the field below:

Please write goal number 2 in the field below:

Goal attainment

Use the scale from 1 to 7, where 1 is "not at all" and 7 is "to a large extent".

Based on the season so far:

To what extent do you perceive that goal number 1 has been reached?

To what extent do you perceive that goal number 2 has been reached?

Importance of goal

Use the scale from 1 to 7, where 1 is "not at all" and 7 is "to a large extent".

How important is it for you to reach goal number 1?

How important is it for you to reach goal number 2?

Probability of goal attainment

Use the scale from 1 to 7, where 1 is "not at all" and 7 is "to a large extent".

How likely is it that you will reach goal number 1 this season?

How likely is it that you will reach goal number 2 this season?

12) Satisfied with results?

Use the scale from 1 to 7, where 1 is "not satisfied at all" and 7 is "very satisfied".

How satisfied are you with the team's overall performance so far this season?

13) When does your current professional contract ends?

14) Job security next season

Use the scale from 1 to 7, where 1 is "not sure at all" and 7 is "very sure".

How sure are you that you will have the same position next season?

15) Want same position?

Use the scale from 1 to 7, where 1 is "not at all" and 7 is "to a great extent".

To what extent would you like to have the same position next season?

To what extent would you like to have the same position, but for a different employer next season?

Thank you for your participation in this project!

Appendix VI:

Consent form from the Regional Committees for Medical and Health Research Ethics (REC)
Written consent for participants Paper I (in Norwegian)



UNIVERSITETET I OSLO

DET MEDISINSKE FAKULTET

Doktorgradsstipendiat Marte Bentzen
Norges Idrettshøgskole
0806 Oslo

**Regional komité for medisinsk og helsefaglig
forskningsetikk sør-øst D (REK sør-øst D)**
Postboks 1130 Blindern
NO-0318 Oslo

Telefon: 22 85 05 93

Dato: 14.02.11

Deres ref.:

Vår ref.: 2010/3304-1

E-post: post@helseforskning.etikkom.no

Nettadresse: <http://helseforskning.etikkom.no>

2010/3304-1 Forebygging av utmattelse hos elitetrenere i norsk idrett

Vi viser til søknad av 14.12.10 for det ovenfor nevnte forskningsprosjekt. Søknaden ble behandlet i komiteens møte 20.01.11.

Prosjektleder er master Marte Bentzen.

Forskningsansvarlig er Norges idrettshøgskole ved øverste administrative ledelse.

Prosjekttema:

Studiens formål er å undersøke hvilke risikofaktorer som ligger til grunn for at enkelte elitetrenere utsettes for høy grad av utmattelsessymptomer / utbrenthet og hvilke miljøfaktorer, psykologiske egenskaper og ferdigheter som kan forebygge utmattelse / utbrenthet i trenervirksomhet. Man søker å få innsikt i hvordan en utmattelsesprosess har utviklet seg i en idrettskontekst og man skal intervjuer elitetrenere som har opplevd høy grad av emosjonell utmattelse. 10 personer skal inkluderes i denne kvalitative studien som er et doktorgradsprosjekt.

Vedtak:

Komiteen har vurdert søknaden og godkjenner prosjektet med hjemmel i helseforskningsloven § 10. Det knytter seg imidlertid vilkår til godkjenningen som må oppfylles før prosjektet settes i gang.

I tillegg til vilkår som fremgår av dette vedtaket er tillatelsen er gitt under forutsetning av at prosjektet gjennomføres slik det er beskrevet i søknaden, protokollen og de bestemmelser som følger av helseforskningsloven med forskrifter.

Vilkår vedrørende den forskningsetiske vurderingen av prosjektet:

Komiteen godtar ikke at det skal rekrutteres ved hjelp av den såkalte snøballmetoden. Det er et grunnleggende forskningsetisk prinsipp at deltakelse i forskning. Deltakelse i forskning innebærer imidlertid ikke bare selve forskningsprosjektet, men også rekrutteringen til prosjektet. For informantene i prosjektet kan det vær mange gode grunner til at de ikke ønsker å identifiseres ved hjelp av andre. Personers privatliv skal respekteres. Komiteen mener derfor at rekruttering kun kan gjøres ved at deltakerne selv melder sin interesse. Dette medfører at rekrutteringen må gjøres ved hjelp av annonsering, oppslag, gjennom trenerforeninger eller lignende.

Vilkår vedrørende informasjonsskrivet:

Informasjonsskrivet oppfyller ikke kravene som settes til slike skriv. Blant annet er selve samtykkeerklæringen for omfattende, da alt prosjektdeltakerne samtykker til skal inngå i selve informasjonsskrivet. Komiteen ber om at informasjonsskrivet revideres og at REKs mal for informasjonsskriv benyttes. Malen finnes på <http://helseforskning.etikkom.no/xnet/public>

Begrepet anonymt brukes misvisende i søknaden og informasjonsskrivet. Begrepet fullstendig anonymt kan ikke brukes. Korrekte termer er ”anonymt” og ”avidentifisert”. Med avidentifiserte data menes at opplysningene oppbevares uten direkte personidentifiserbare parametre, men at man kan finne tilbake til den personen opplysningen stammer fra ved hjelp av en nøkkel eller kode. Dette i motsetning til anonyme data hvor det er umulig, både direkte og indirekte, å spore opplysningene tilbake til den personen som opplysningene knytter seg til. Komiteen ber om at begrepene brukes korrekt i informasjonsskrivet.

Det gjøres oppmerksom på at REK ble et forvaltningsorgan i 2009. Komiteen tilrår derfor ikke forskningsprosjekter lenger, men godkjenner dem. Vi ber om at dette rettes opp i informasjonsskrivet.

Vilkår vedrørende informasjonssikkerhet:

I søknadens punkt 5a oppgis det at opplysningene som registreres i prosjektet skal oppbevares i direkte personidentifiserbar form. Komiteen godtar ikke dette og forutsetter at data oppbevares i avidentifisert form i en egen forskningsfil. Det vil si at opplysningene oppbevares uten direkte personidentifiserbare parametre, men hvor man kan finne tilbake til den personen opplysningen stammer fra ved hjelp av en nøkkel eller kode. Nøkkelen skal oppbevares adskilt fra forskningsfilen.

Forskningsprosjektets data skal oppbevares forsvarlig, se personopplysningsforskriften kapittel 2, og Helsedirektoratets veileder for «Personvern og informasjonssikkerhet i forskningsprosjekter innenfor helse- og omsorgssektoren», <http://www.norsk-helsenett.no/informasjonssikkerhet/bransjenormen/Personvern%20og%20informasjonssikkerhet%20i%20forskningsprosjekter%20v1.pdf>

Tillatelsen gjelder til 31.12.2012. Av dokumentasjonshensyn skal opplysningene bevares til 31.12.2014. Opplysningene skal lagres avidentifisert i en nøkkel- og en opplysningsfil. De skal deretter anonymiseres eller slettes.

Prosjektet skal sende sluttmelding til REK Sør-Øst D, se helseforskningsloven § 12, senest 31.06.2013.

Komiteens vedtak kan påklages til Den nasjonale forskningsetiske komité for medisin og helsefag, jf. forvaltningsloven 28 flg. En eventuell klage sendes til REK Sør-Øst D. Klagefristen er tre uker fra mottak av dette brevet.

Med vennlig hilsen

Stein A. Evensen (sign.)
professor dr.med.
leder

Ingrid Middelthon
seniorrådgiver

Kopi:
Norges idrettshøgskole

Forespørsel om deltakelse i forskningsprosjektet

”Forebygging av utmattelse hos elitetrenerne i norsk idrett”

Bakgrunn og hensikt

Dette er et spørsmål til deg om å delta i en forskningsstudie for å intervju elite-trenerne i Norge som i løpet av sin karriere har opplevd høy grad av utmattelsessymptomer eller utbrenthet.

Formålet med studien er å få bedre kunnskap om hvilke faktorer, både personlige og miljømessige, som har påvirket den enkelte trener i sin utmattelsesprosess.

Resultatene fra denne studien vil være viktige, da de er de første av sitt slag i Norge som søker innsikt i forhold til utviklingen og erfaringen med å være utmattet som elitetrener. Resultatene tar sikte på å kunne gi tilbakemelding til organisasjonene som norske trenere jobber i, samt tilbudet som gis i trenerutdanninger i Norge, om hvilke faktorer som ser ut til å være viktig for å forebygge utmattelse i jobben som trener.

Hva innebærer studien for deg?

Vi ber deg om et intervju som er estimert til å ta ca 60 minutter.

Hva skjer med informasjonen om deg?

Alle opplysningene om deg vil bli behandlet uten navn eller andre direkte og indirekte gjenkjennerende opplysninger. En kode knytter deg til dine opplysninger gjennom en navneliste. Det er kun doktorgradsstipendiat og prosjektleder som har tilgang på de enkelte svarene i personlig identifiserbar form. De er begge underlagt taushetsplikt, og alle data vil bli behandlet strengt konfidensielt og forsvarlig oppbevart.

Resultatene vil bli aidentifisert og presentert slik at den enkelte ikke kan gjenkjennes. Aidentifisert forskningsdata vil bli oppbevart ut år 2014 på grunn av dokumentasjonshensyn. Deretter slettes kodingsnøkkel, og anonymiserte data blir lagret i en periode på 10 år etter prosjektslutt for å ivareta kravet om etterprøvnbarhet og redelighet i forskning. Prosjektet er godkjent av Regional Etisk Komité, avd Sør Øst

Informasjonen som registreres om deg skal kun brukes slik som beskrevet i hensikten med studien.

Frivillig deltakelse

Det er frivillig å delta i studien. Du kan når som helst og uten å oppgi noen grunn trekke ditt samtykke til å delta i studien. Dersom du ønsker å delta, undertegner du samtykkeerklæringen på siste side. Dersom du senere ønsker å trekke deg eller har spørsmål til studien, kan du kontakte Marte Bentzen.

Med vennlig hilsen

Marte Bentzen
Doktorgradsstipendiat og prosjektleder

Nicolas Lemyre
1. amanuensis og seksjonsleder, SCP

Samtykkeerklæring for deltakelse i forskningsprosjektet:

”Forebygging av utmattelse hos elitetrenerne i norsk idrett”

Jeg har lest informasjonsskrivet om prosjektet: ”Forebygging av utmattelse hos elitetrenerne i norsk idrett”.

Jeg ønsker å delta i prosjektet.

(Sted) _____ (Dato) _____

(NAVN I BLOKKBOKSTAVER) _____

(Underskrift) _____

