

Systematic review: Stress among sports coaches

Table 2. *Characterisation of the articles included in the systematic review*

Authors	Purpose	Sample characteristics	Measures	Main conclusions	Quality score
Kellmann & Kallus (1994)	To examine the interrelation between stress and coaches' behaviour during rest periods.	Elite and non-elite coaches (n=154)	Questionnaire: Rest Period Questionnaire; The Bibliographic Questionnaire	Analysis indicated that coaches who are highly stressed by the practice rate themselves as significantly less active and less authoritarian during rest periods than do their less stressed colleagues. In addition, coaches who are highly stressed by the competition rate themselves as significantly less warm-hearted than the low-stress group.	7
Kugler et al. (1996)	a) To investigate the effects of a real-life stress situation on salivary IgA and cortisol concentrations and b) to analyse the time kinetics of stress-induced changes in sIgA and cortisol levels.	Elite German soccer coaches (n=17)	Salivary Cortisol Imunoglobulin A	The coaches' stress levels were higher during soccer matches than before and after matches. The salivary cortisol and immunoglobulin levels were higher among coaches than in controls.	7
Kelley et al. (1999)	a) To compare the stress between male and female coaches and b) to investigate the relationship between stress and symptoms of burnout.	Non-elite American tennis coaches (n=249)	Questionnaires: MBI; PSS, Coaching Issues Survey Hardness Scale SCAT-Coach	The perceived level of stress was lower among male coaches than among female coaches. The coaches' stress levels exhibited a relationship with factors that tend to cause burnout in coaches.	9

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Hendrix et al. (2000)	To investigate hardiness, social support and training issues to predict the evaluation of stress and the ability to assess stress to predict burnout in college coaches	Non-elite American football coaches (n=118)	Questionnaire: Hardness Scale SSQ; PSS	The coaches with the lowest hardiness and social support levels and higher training-related levels tended to report higher perceived stress levels. Higher perceived stress levels were associated with emotional exhaustion, depersonalisation and lower levels of personal fulfilment.	8
Drake & Hebert (2002)	To describe the conflict and stressors experienced by coaches	Non-elite American coaches (n=2)	Semi-structured interview	The stressors mentioned by coaches were coaching more than one sport, interference by the athletes' families and conflict with other coaches.	7
Loupos et al. (2004)	To investigate the psychophysiological responses of swimming coaches experiencing 5 days of competitive stress and the relation of these responses to the perceived importance of competition.	Elite and non-elite Greek swimming coaches (n=8)	Questionnaire: Salivary cortisol	The coaches' salivary cortisol concentrations did not exhibit significant differences during the competition period. The importance of the competition was not associated with the stress variables.	10
Loupos et al. (2005)	To investigate the effects of competition stress in swimming coaches	Elite Greek swimming coaches (n=14)	Plasma Fibrogen t-PA antigen	The coaches' stress levels were higher during the competition than they were 30 minutes before and 10 minutes after the competition.	9
Frey (2007)	To understand coaches' experiences with stress, the perceived effects of stress on their coaching performance, and their coping strategies	Non-elite American baseball, basketball, diving, swimming, volleyball and tennis coaches (n=10)	Semi-structured interview	The coaches indicated the following as stressors: level of competition, years of experience, interference by the media, self-imposed expectations, and professional duties. Behavioural strategies and social support were the primary coping strategies used by the coaches.	7
Thelwell et al. (2008)	To assess the variation of	Elite British soccer, cricket, rugby, field	Semi-	The performance stressors mentioned by	7

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	performance and organizational stressors experienced by coaches dealing with high-level athletes	hockey, golf, gymnastics, athletics, and sailing coaches (n=11)	structured interview	the coaches were concerns with the athletes' and their own performance. The organisational stressors mentioned were concerns with the team's organisation and the leadership role.	
Knight & Harwood (2009)	a) To explore the stressors that tennis coaches associate with parents and b) to examine how such stressors may differ depending on a player's developmental stage of participation.	Non-elite British tennis coaches (n=70)	Semi-structured interview	The coaches observed that lack of knowledge, inadequate behaviour and interference by the athletes' parents in training and competitions were the sources of several stressors related to training and competition. The coaches identified the parents' influence at different stages of the athletes' development as a stressor.	7
Levy et al. (2009)	a) To identify and determine the frequency of organisational stressors and coping strategies reported by an elite coach and b) to identify coping strategies used to manage organisational stressors.	Elite British coach (n=1)	Interview	The organisational stressors mentioned by the coach were management of the training and competition environments, excessive workload and travel, and leadership in the workplace. The coping strategies used by the coach were problem-focused, emotion-focused and avoidance.	8
Olusoga et al. (2009)	To Identify the stressors of coaches who deal with world-class athletes	Elite British diving, sailing, swimming, bowls, equestrian, field hockey and table tennis coaches (n=56)	Semi-structured interview	The coaches mentioned the following as stressors: conflict management, interference by the media and athletes' relatives, pressure and expectations of satisfactory results, preparation for competition and social isolation.	7
Dias et al. (2010)	To identify the main sources of stress and coping strategies that coaches used in stress situations	Elite Brazilian, Portuguese and Swedish volleyball, athletics, soccer, basketball and handball coaches (n=6)	Semi-structured interview	Concern for the athletes' performance was reported by the coaches as the main stressor. Emotional self-control and positive reassessment of the situation were the main strategies reported by the coaches to cope with stress.	7

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Malinauskas et al. (2010)	To investigate the associations between burnout and perceived stress	Non-elite Lithuanian coaches (n=203)	Questionnaire: CBQ; PSS	The majority of the assessed coaches showed high levels of perceived stress. The majority of the coaches with burnout symptoms exhibited high scores of perceived stress.	10
Olusoga et al. (2010)	a) To investigate the responses and effects of stress for world-class UK sports coaches and b) to explore the coping strategies used by these coaches in attempting to manage stress.	Elite diving, sailing, swimming, bowls, equestrian, field hockey, lacrosse and table tennis coaches (n=12).	Semi-structured interview	The coaches reported mistakes in cognitive answers, unpleasant emotions, reduced motivation, difficulties in interpersonal relationships and physical and physiological problems as stress responses. The coaches were aware that their responses to stress had direct and indirect effects on the athletes. Organisation and planning were the primary coping strategies used by the coaches.	7
Tashman et al. (2010)	To investigate the effect of perceived stress on the relation between perfectionism and burnout in coaches	Non-elite American basketball, baseball, softball, swimming, tennis, golf, volleyball and bowling coaches (n=177)	Questionnaire: MBI; PI; PSS	Maladaptive forms of perfectionism resulted in increased stress, potentially leading to the experience of burnout. In turn, adaptive forms of perfectionism did not appear to result in increased appraisals of stress or the risk of burnout.	9
Thelwell et al. (2010)	a) To identify the stressors experienced by coaches and b) to examine the coping strategies that elite-level coaches employ to overcome stressors.	Elite British soccer coaches (n=3)	Semi-structured interview	The main stressors mentioned by the coaches were actual performance poorer than expected, conflict management and inadequate training infrastructure. Emotion- and problem-focused strategies were the main coping strategies used.	7

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Costa et al. (2012)	To evaluate and compare the differences presented by futsal and football coaches regarding the constructs of stress and recovery evaluated by RESTQ-Coach	Elite and non-elite Brazilian soccer and futsal coaches (n=217)	Questionnaire RESTQ-Coach	The levels of global and specific stress were higher among futsal coaches than in soccer coaches.	9
Durand-Bush et al. (2012)	a) To provide insight into strategies that coaches utilize to meet the daily demands and expectations of their profession and remain effective in stressful environments and b) to identify the coping strategies used by coaches.	Elite Canadian curling, hockey and vignette coaches (n=3) Non-elite Canadian hockey, synchronised skating, paddling, rowing, and Alpine skiing coaches (n=5)	Semi-structured interview	The main stressors mentioned by the coaches were competition, organisation of training sessions and travel arrangements, parents' interference and meeting their own and other people's expectations. Self-regulation was the main coping strategy used.	7
Georgios & Nikolaos (2012)	To examine a theoretical model of personal/environmental factors, stress and burnout to explore the factors that can predict the occurrence of burnout in coaches of individual sports.	Elite and non-elite Greek athletics coaches (n=164)	Questionnaires: MBI; PSS; SSQ; Hardiness Scale	The coaches with higher stress levels exhibited a greater susceptibility to burnout than coaches with lower levels of stress.	7
Olusoga et al. (2012)	To identify the manners in which coaches have developed their ability to coach successfully in highly stressful situations, with the ultimate goal of helping coaches develop the strategies, skills, and attributes required for world-class performance under pressure	Elite British (n=8)	Semi-structured interview	Psychological attributes, preparation, and coping at the event were factors that coaches perceived to be important for successful Olympic coaching. In addition, coaches offered specific suggestions for training and development. Key themes included coach interaction and simulating Olympic pressure.	9

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Penteado et al. (2012)	Assessing aspects related to stress, work and quality of life in technical and physical trainers of football	Elite Brazilian Soccer Coaches (n=13) Physical Trainers (n=13)	Semi-structured Interview; Questionnaire: JSS; QLV	Coaches and physical trainers obtained scores of stress at work within an acceptable limit, understood to be active work.	8
Chroni et al. (2013)	To distinguish between training-specific and competition-specific stressors based on answers to the question 'What stresses coaches in training and in competition'?	Elite and non-elite Greek basketball, soccer, volleyball, athletics, Alpine ski, and rhythmic gymnastics coaches (n=49)	Semi-structured interview	The main stressors associated with training mentioned by the coaches were athletes' injuries, concern with the athletes' performance, concern with their own performance, and interpersonal relationships with athletes and their parents. The main stressors in competitions were results of matches, concern for the athletes' performance, criticism, and concern with their own performance.	7
Hudson et al. (2013)	To conduct a multidisciplinary <i>in situ</i> examination of coaches' psychophysiological responses to competition stress that is underpinned by reversal theory	Non-elite British coaches (n=10)	Questionnaires: SMIA (Modificado) TESI Physiological: Alpha amylase	On competition day, the coaches exhibited higher levels of subjective stress, unpleasant emotions and alpha-amylase than on a non-competition day.	8
Knight et al. (2013)	a) To identify coaches' levels of perceived stress and b) to examine the personal and situational factors that may influence coaches' perceptions of stress.	Non-elite Canadian coaches (n=502)	Questionnaire: PSS	The perceived stress levels were higher among coaches than among healthy men. Salary and a lack of social support were mentioned by the coaches as stressors.	8

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Rhind et al. (2013)	To investigate the organizational stressors experienced by professional coaches from soccer	Elite British soccer coaches (n=10)	Semi-structured interview	The organisational stressors mentioned were job role (lack of time, low salary), players (injury, lack of discipline), managers (decision-making), support staff (lack of quality), training environment (poor facilities, poor equipment), away matches (travel and delays) and soccer culture (media pressure).	7
Richards et al. (2014)	To examine how role stressors, burnout, and resilience experienced by teacher/coaches differ from what is experienced by non-coaching teachers	Non-elite coaches (n=417)	Questionnaire: TRSS; MBI-ES; CD-RISC	Overall, the results suggest that there are more similarities than differences among teacher/coaches and non-coaching teachers. These findings suggest that it is not safe to assume that dual role teacher/coaches will always experience more role stress and burnout than non-coaching teachers.	9
Kellmann et al. (2015)	To examine the recovery–stress balance of professional coaches in one team for the duration of a competitive season	Elite Australian soccer coaches (n=6)	Questionnaire: RESTQ	The two-week vacation had a positive but short-lived influence on recovery for these coaches. There was a fluctuation in scores during the season. The study highlights the importance of recovery in managing recovery–stress balance in the challenging work environments of coaches.	7
Judge et al. (2015)	To investigate sources of occupational stress for NCAA Division I and Division III track and field coaches during the championship season	Elite and non-elite Coaches (n=67)	Questionnaire: ASI; PRQ	When the predictors and the interaction of years of experience were entered into the model, the social support and NCAA Division were significant predictors of task-based stress. As social support increased, task-based stress decreased.	8

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Knights & Ruddock-Hudson (2016)	To examine the experiences and perceptions of occupational stress and social support of AFL senior coaches	Elite Australian football coaches (n=12)	Semi- structured interview	Five themes emerged from the findings. These included (i) pressurized workplace environments, (ii) development and improvement of others and self, (iii) accountability and responsibilities to others, (iv) advice, support and comfort from others and (v) stress and adversity— the ramifications.	8
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Note. - RESTQ-Coach (Recovery Stress Questionnaire for Coaches); MBI (Maslach Burnout Inventory); PSS (Perceived Stress Scale); SSQ (Social Support Questionnaire); CBQ (Coach Burnout Questionnaire); SMIA (State of Mind Indicator for Athletes); TESI (Tension Effort Stress Inventory); PI (Perfectionism Inventory); JSS (Job Stress Scale); QLV (Quality of Life in Voice); TRSS (Teacher Role Stressors Survey); ASI (Administrative Stress Index); PRQ (Personal Resource Questionnaire)