

Coach burnout: A scoping review

OLUSOGA, Peter <<http://orcid.org/0000-0001-8431-3853>>, BENTZEN, Marte and KENTTÄ, Göran

Available from Sheffield Hallam University Research Archive (SHURA) at:

<http://shura.shu.ac.uk/23372/>

This document is the author deposited version. You are advised to consult the publisher's version if you wish to cite from it.

Published version

OLUSOGA, Peter, BENTZEN, Marte and KENTTÄ, Göran (2019). Coach burnout: A scoping review. *International sport coaching journal*, 6 (1), 42-62.

Copyright and re-use policy

See <http://shura.shu.ac.uk/information.html>

1 **Coach Burnout: A Scoping Review**

2

3 Peter Olusoga¹, Marte Bentzen², & Göran Kenttä³

4

5 ¹ Peter Olusoga, PhD

6 Academy of Sport & Physical Activity

7 Sheffield Hallam University

8 S10 2BP

9 United Kingdom

10 Email: p.ulusoga@shu.ac.uk

11 Phone number +44 114 225 5752

12

13 ²Marte Bentzen, PhD

14 Department of Physical Education

15 The Norwegian School of Sport Sciences

16 PB 4014 Ullevål Stadion, 0806

17 Oslo, Norway

18 Email: marte.bentzen@nih.no

19 Phone number: +47 990 20 101

20

21 ³Göran Kenttä, PhD

22 Department of Performance and Training

23 The Swedish School of Sport & Health Sciences

24 Box 5626, S-114 86

25 Stockholm, Sweden

26 Email: goran.kentta@gih.se

27 Phone number: +46 812053732

28

29 Correspondence concerning this article should be addressed to:

30 Dr Peter Olusoga

31

32

33

34 **Coach Burnout: A Scoping Review**

35 **Abstract**

36 Coaches' experiences of burnout and stress have been popular topics for research within sport
37 psychology, particularly over the last decade. The purpose of this scoping review was to provide
38 an up-to-date and critical review of the coaching burnout literature, consolidate research
39 findings, assess current methodological and conceptual trends, and identify avenues for research
40 in this area. Five electronic databases were used to conduct the literature search up to September
41 30th, 2017 (PsycINFO, Web of Science, PubMed, SPORTDiscus, ORIA, Google Scholar).

42 Initially, 65 papers, reviews, and books chapter were identified, but through an iterative process
43 (Arksey & O'Malley, 2005), 45 peer-reviewed, published articles satisfied the inclusion criteria,
44 and the data from these studies was charted. Findings indicated that coach burnout literature is
45 explored from a number of different theoretical perspectives, and shortcomings were identified
46 regarding constructs and concepts used, and research quality. Based on consolidated findings,
47 key challenges are identified, and recommendations for future research are suggested.

48 Recommendations include the use of designs that fully capture the enduring nature of the
49 burnout experience, further consideration being given to the measurement of coach burnout, and
50 further research exploring the clinical treatment and prevention of burnout in coaching contexts.

51

52 **Keywords: Coaches, Burnout, Literature Review, Stress, Measurement,**

Coach Burnout: A Scoping Review

Introduction

Burnout is most often described as "an enduring experiential syndrome" (Maslach & Jackson, 1986) with three central characteristics: emotional exhaustion (a feeling of being overwhelmed and emotionally depleted by work), depersonalisation (a cynical attitude towards, or withdrawal from, personal relationships at work), and reduced personal accomplishment (perceived lack of competence, low self-esteem and inadequacy). Although originally documented in human care settings (Freudenberger, 1974; Maslach, 1976), Freudenberger (1975) suggested that burnout might also be observed in other environments, while Schutte, Toppinen, Kalimo, and Schaufeli (2000) argued that burnout was more likely to develop in professionals whose job roles are based around interpersonal relationships. These human relationships are an integral part of sports coaching (Vealey, Udry, Zimmerman, & Soliday, 1992), which itself has been described as a potentially 'consuming, demanding, and frustrating experience' (Raedeke, 2004). As such, and given that burnout symptoms might contribute to the alarming number of coaches leaving the profession in certain sports each year (Raedeke, 2004), coaches' experiences of burnout and stress have been popular topics for research within sport psychology (e.g., Bentzen, Lemyre, & Kenttä, 2014, 2016b; Hudson, Davison, & Robinson, 2013; Kellmann, Altfeld, & Mallett, 2015; Knight, Reade, Selzler, & Rodgers, 2013; Olusoga Butt, Hays, & Maynard, 2010; Olusoga & Kenttä, 2017).

Early research into coaching burnout was based largely on Smith's (1986) Cognitive-Affective Stress Model, which suggested that burnout was a result of prolonged exposure to stress (e.g., Caccese & Mayerberg, 1984; Capel, Sisley & Desertrain, 1987; Kelley; 1994; Kelley & Gill; 1993; Vealey et al., 1992). Vealey et al. (1992) explored predictors of burnout from a stress perspective and suggested that trait anxiety and a host of cognitive perceptions of the

25 coaching role (e.g., perceived rewards, perceived value of the role, perceived overload and
26 perceived control) were predictive of burnout in male and female collegiate coaches.
27 Furthermore, Kelley (1994) and Kelley and Gill (1993) found that in collegiate coaching, stress
28 appraisals (e.g., perceived stress, role conflict and 'coaching issues') were significantly related to
29 all three dimensions of burnout. However, as Raedeke (1997) suggested, not everyone who
30 experiences stress burns out. Consequently, a number of other perspectives have also been
31 suggested to explain the burnout phenomenon.

32 From a sociological perspective, Coakley (1992) argued that the culture of sport
33 organisations can lead to the development of a singular and sport-related identity. When
34 experienced in tandem with a limited sense of control, burnout (conceptualised by Coakley as
35 premature withdrawal from sport) can be the result. While Coakley's assertions were based on
36 interviews with a small set of adolescent athletes, it is not unrealistic that organisational culture
37 might play a role in coach burnout. Raedeke, Granzky, and Warren (2000) explored the notion
38 that stress on its own is not sufficient to cause burnout, and that highly committed coaches are
39 more likely to experience the syndrome. Raedeke et al. (2000) suggested that coaches could
40 display one of three commitment profiles (attraction, entrapment, or low commitment) based on
41 the theoretical determinants of commitment (i.e., costs and benefits, satisfaction and attractive
42 alternatives, investments, and social constraints). In their study with 295 age-group swimming
43 coaches, Raedeke et al. found that coaches displaying characteristics of entrapment (i.e., coaches
44 who perceive that there are high costs and low benefits associated with the role, a lack of
45 attractive alternatives to coaching, that they have invested a significant amount, and that others
46 wish them to continue), scored higher on the burnout dimension of emotional exhaustion than
47 coaches displaying low commitment or attraction profiles. Also exploring burnout from a

48 motivational perspective, Donahue, Forest, Vallerand, Lemyre, Crevier-Braud, and Bergeron
49 (2012) found that professional coaches' obsessive passion was associated with their use of
50 ruminative thoughts, which, in turn, was predictive of emotional exhaustion. Moreover,
51 harmonious passion was thought to prevent rumination and, thus, indirectly protect coaches from
52 experiencing emotional exhaustion. Several recent studies have used the motivational framework
53 of Self-Determination Theory (Ryan & Deci, 2017) to study the process of burnout among
54 coaches. Findings indicated that lower levels of need satisfaction and autonomous motivation
55 seem to explain why some coaches are more prone to experience higher levels of burnout than
56 others (Bentzen et al., 2014, 2016b; Bentzen, Lemyre, & Kenttä, 2016a; Stebbings, Taylor,
57 Spray, & Ntoumanis, 2012). Finally, Lundkvist, Gustafsson, Hjälmm, and Hassmén's (2012)
58 interviews with elite Swedish soccer coaches suggested that burnout stemmed from issues related
59 to home and work. More recent explanations have therefore focused on work-home interference
60 and lack of recovery as major determinants of burnout (e.g., Bentzen et al., 2016b; Kellman et al.
61 2015; Lundkvist et al., 2012; Lundkvist, Gustafsson, Davis, & Hassmén, 2016).

62 In 2007, Goodger, Gorely, Lavallee, and Harwood, published a systematic review of the
63 literature on burnout in sport. Earlier reviews had been carried out almost 20 years previously
64 (Dale & Weinberg 1990; Fender, 1989). In each case, the focus of the review was on burnout in
65 sport as a whole so studies reporting on athlete burnout were included. Specifically, in Goodger
66 et al.'s (2007) review, fewer than half of the studies reviewed focused on coaches, and as the
67 authors themselves conceded, there was a 'notable absence of elite coaches' in the sample
68 (p.132). Goodger et al. highlighted a number of avenues that future researchers should consider,
69 such as the relationship between burnout, mood, stress, and recovery, and the treatment and
70 prevention of burnout. However, following their review, research seemed to focus more on the

71 stress experiences of coaches than on burnout (e.g., Fletcher & Scott, 2010; Olusoga et al., 2009,
72 2010, Thelwell, Weston, Greenlees, & Hutchings, 2008). Moreover, burnout research continued
73 to focus more on athletes (e.g., Appleton, Hall, & Hill, 2009; Hill, Hall, & Appleton, 2010;
74 Lemyre, Hall, & Roberts, 2008; Gustafsson, Hassmén, Kenttä, & Johansson, 2008), than on
75 coaches or other 'performers' (e.g., managers, support staff) in sports organisations.

76 More recently, however, coach burnout research has gained momentum and is beginning
77 to answer some of the coach burnout questions that remain (e.g., Bentzen et al., 2014, 2016a,
78 2016b; Kellman et al., 2015; Lundkvist et al., 2012; Olusoga & Kenttä, 2017). Nevertheless,
79 coaching burnout research is hampered by a lack of useful consensus on appropriate measures
80 and, indeed, on the application of such methods, for capturing the burnout experience. Moreover,
81 a variety of theoretical perspectives have been adopted in exploring coach burnout. As such, the
82 purpose of this paper is to provide an up-to-date and critical review of the coaching burnout
83 literature, consolidate research findings, assess current methodological and conceptual trends,
84 and identify avenues for research in this area, all of which might help to drive research in this
85 field forwards.

86 **Method**

87 A scoping review has been described as a process of mapping the existing literature in a
88 certain area (Arksey & O'Malley, 2005), and has been suggested to fit well when the aim of a
89 study is broad (Armstrong, Hall, Doyle, & Waters, 2011). Importantly, the body of literature
90 within the field of coach burnout is still relatively modest, yet is considerably varied when it
91 comes to theoretical framework, study design, and measurement. Scoping reviews are argued to
92 be suitable in these situations, as they allow greater flexibility to include a wider range of types
93 of publications, compared to a systematic review (Armstrong et al., 2011; Clark, Camiré, Wade,

94 & Cairney, 2015). In addition, scoping reviews are preferable when the research aims to identify
95 parameters and gaps in the body of literature (Armstrong et al., 2011). Within the current study,
96 the methodological framework of a scoping review as described by Arksey and O'Malley (2005)
97 was used. However, to advance this methodology, Levac, Colquhoun, and O'Brian (2010)
98 suggested some refinements to the process, which will also be taken into consideration in this
99 study. Broadly, this method consists of five main steps: 1) Identifying the research question (see
100 introduction), 2) Identifying relevant studies, 3) Study selection, 4) Charting the data, and 5)
101 Collating, summarising, and reporting the results (Arksey & O'Malley, 2005; Levac et al., 2010).

102 *Literature search strategy (identifying relevant studies)*

103 Five electronic databases were used to conduct the literature search up to September 30th,
104 2017: PsycINFO, Web of Science, PubMed, SPORTDiscus, ORIA, and Google Scholar. These
105 databases were chosen as, combined, they represented a wider perspective of sport (e.g.,
106 psychological, sociological, medical, organisational and pedagogical perspectives), which could
107 be of interest for the scope of this review. Keywords used in the search were: 'burnout',
108 'exhaustion', 'coach', 'coaches', and 'sport'. These keywords were used in different combinations
109 in the searches (e.g., 'coach, burnout, sport'; 'coaches, burnout, sport'; 'sport, coach, exhaustion').
110 Only articles written in English were included. Studies involving dual-role teacher-coaches were
111 included in the review as they contribute significantly to the coaching burnout literature;
112 however, studies involving PE-teachers instead of coaches, and stress instead of burnout were
113 excluded.

114 For every search conducted in each of the databases, the accuracy and relevance of the
115 studies found were evaluated as unsuitable for the scope of this review after approximately 40
116 results. Consequently, only the first 100 results of each search were screened by reviewing and

117 assessing the abstracts and keywords to determine whether the studies were appropriate for the
118 scope of the review, guided by the inclusion and exclusion criteria. The second author conducted
119 this part of the literature review, and consulted with the first and third authors when uncertain.
120 Additionally, the reference list of all papers found of interest at this stage of the literature search
121 was screened (Arksey & O'Malley, 2005). Initially, 65 papers, reviews, and books chapter were
122 found to be relevant for this review, and these were collated in a reference list and downloaded in
123 a shared file for all researchers.

124 *Charting the data*

125 All three authors cooperated in a more thorough assessment of the papers found, via
126 extensive discussion. To chart the data effectively, a spreadsheet was created on a shared google
127 document (meaning each member of the research team had access to and the ability to edit the
128 data). For the studies that met our inclusion criteria, we extracted data pertaining to the
129 participant demographics (i.e., number, gender, role, sport type, and level of performance), study
130 design (i.e., methodology, methods, data analysis techniques), measures (independent and
131 dependent variables, correlates and co-variables, measurement tools), and theoretical
132 perspective/underpinning (theoretical framework underpinning burnout / conceptualisation of
133 burnout). The extraction of data was an iterative process, with further key data being deemed
134 more/less important as the data charting exercise was completed. For example, the fields in the
135 spreadsheet were expanded to include further categories of performance level, while for sport
136 type, the classification of team or individual sport was considered sufficient. Moreover, during
137 this process, a further 20 publications were excluded from the review: Four book chapters, three
138 previous burnout reviews, one professional practice article, nine studies with limited or no actual
139 burnout data, and two conference/dissertation abstracts. One additional paper was found to

140 pertain to teachers of physical education rather than coaches. However, in order to provide a
141 broader description of relevant literature in the area, a reference list of these publications is
142 included in Appendix A. Finally, the remaining 45 peer-reviewed, published articles satisfied our
143 inclusion criteria (See Table 1).

144 **Results**

145 The purpose of this review was to map the existing coaching burnout literature. In
146 carrying out the literature search, we identified 65 publications of various types related to
147 coaching burnout, published between 1984 and September, 2017. Of these, over one third was
148 published after 2010, indicating a welcome resurgence in the popularity of exploring burnout in
149 coaching populations. However, only the 45 peer-reviewed, published research articles that
150 satisfied our inclusion criteria will be analysed in the results section.

151 *Coach characteristics*

152 A detailed breakdown of the sample demographics can be found in Table 2. Exploring
153 the characteristics of the samples used in the 45 peer-reviewed, published research studies
154 allowed us to gain a valuable insight into where coaching burnout research has been focused,
155 and, perhaps, to identify neglected coaching populations who might benefit from further
156 investigation. Over half (53.3%) of burnout research studies were conducted with North
157 American coaches, while Scandinavian and European coaches were sampled in 41% of the
158 included studies. The majority of studies (75.6%) were conducted using mixed samples of male
159 and female coaches. Seven studies (15.5%) focused exclusively on male coaches, whereas one
160 study (2.2%) was conducted with a sample of female coaches. In three studies (6.7%) the gender
161 breakdown of the sample was not specified.

162 Given that various work-life interference issues can contribute to burnout, coaches'
163 employment status is an important consideration in burnout research, however, employment

164 status was not adequately specified in sixteen (35.6%) of the studies included. A full breakdown
165 of the coach characteristics, including sport type and performance standard, can be found in
166 Table 2.

167 *Study design*

168 A summary of the design characteristics of the reviewed studies can be found in Table 3.
169 The vast majority of published research (84.45%) was quantitative. Taken together with the two
170 mixed-methods studies, most designs (80%) were cross-sectional, and we found variation in the
171 tools used to measure burnout. More specifically, in the sample of 40 quantitative or mixed-
172 methods research studies, descriptions of measurement tools were not always comprehensive.
173 However, we attempted to capture the burnout measure used, as it was specifically described by
174 the authors in each study. The vast majority of authors used some form of the Maslach Burnout
175 Inventory (MBI-Human Services Survey - MBI-HSS; Maslach & Jackson, 1981; MBI-General
176 Survey - MBI-GS; Schaufeli, Leiter, Maslach, & Jackson, 1996; MBI-Educators Survey - MBI-
177 ES; Maslach & Jackson, 1986). The MBI is comprised of three scales: emotional exhaustion,
178 depersonalization, and personal accomplishment, yet the specific version of the survey used in
179 the studies under review varied considerably (see Table 3). In four studies (10%) the version of
180 the MBI used was not stated at all, and while authors of nine studies reported using some form of
181 the MBI modified for use with coaches, in only five such studies was the 'MBI-C' specifically
182 referred to. The CBQ (an adapted version of the Athlete Burnout Questionnaire; Raedeke &
183 Smith, 2001) was used in five studies (12.5%), and the authors in one study chose to use the Job
184 Burnout Scale (Yin & Xue, 2009) comprising subscales of depersonalization, low-potency
185 feeling, and knowledge drain.

186 Of the 40 mixed methods/quantitative studies, only the frequency of burnout was
187 measured in thirty-five (87.5%), while in five studies (12.5%) the intensity and frequency of
188 burnout was measured. The emotional exhaustion scale was used to measure burnout in seven
189 studies (17.5%). Finally, although in eight of the 40 studies it was proposed that higher burnout
190 levels were identified by taking a composite measure of all three subscales (i.e., high burnout
191 characterised by higher emotional exhaustion, higher depersonalisation, and reduced personal
192 accomplishment), a composite measure of burnout was used in the analysis of data for one study;
193 separate analyses were performed on each subscale in the rest.

194 *Burnout perspective*

195 Of further interest was the theoretical perspective/conceptualisation of burnout adopted
196 by coach burnout researchers. In our final sample of 45 research studies, we found that the
197 approach adopted varied considerably from study to study. In twenty-seven of the 45 studies
198 (60%) a stress perspective was adopted to explain coaching burnout. In three of those 27 stress-
199 based burnout studies, authors also included workload and work-home interference to explain
200 burnout. Recovery in addition to stress was also discussed in three studies, burnout in relation to
201 perfectionism was explored in one, and in one study, authors included leadership as an
202 underpinning theory.

203 Burnout was explored in relation to a combination of Self Determination Theory (SDT)
204 and Workload in six studies (13.3%), while in another two studies (4.4%) a commitment-based
205 explanation of burnout was adopted. In one study burnout was related to Work-Home
206 Interference, while one set of authors used Golembiewski's (Golembiewski, Munzenrider, &
207 Carter, 1983) Phase Model of Burnout to underpin their research. Role Theory, Coach Efficacy,

208 Emotions, Emotional Labour, Passion, Leadership, and Conservation of Resources (COR) were
209 also cited once each as frameworks underpinning studies into coaching burnout.

210 **Discussion**

211 The purpose of undertaking this scoping review was to provide an up-to-date and critical
212 review of the coach burnout literature, with the aim of consolidating research findings, assessing
213 current methodological and conceptual trends, and identifying promising avenues for future
214 research in this area. We identified 45 published, peer-reviewed journal articles that met our
215 inclusion criteria; these researchers studies explored coach burnout from a number of different
216 perspectives, with a broad variety of coaches, and using a range of methods and measures. The
217 overall strengths and limitations of the research are discussed.

218 ***Research quality***

219 Despite the ongoing experience of burnout, our review found that the vast majority of
220 authors exploring coach burnout did so using quantitative, cross-sectional designs. While these
221 studies are certainly useful in extending our understanding of coach burnout, they do little to
222 reflect the 'enduring' burnout experience. To echo Lundkvist, Gustafsson, and Davis (2015), it is
223 disappointing to see such a lack of longitudinal designs in this area as the temporal effects of
224 independent variables cannot be accurately examined by cross-sectional research only.
225 Furthermore, only five studies reported using qualitative methods. Again, without dismissing the
226 use and contribution that quantitative burnout research has made, a more balanced
227 methodological approach to research in this area might help to further advance our understanding
228 of the etiology and lived experience of coaches experiencing burnout.

229 Despite these limitations, the quality and quantity of coaching burnout research appears
230 to have grown in the last decade. With the development of more sophisticated methodological
231 approaches, recent research (e.g., Altfeld, Mallett, & Kellman, 2015) has moved beyond merely

232 making simple demographic comparisons. While methodologically challenging and, hence,
233 somewhat rare, a small number of longitudinal studies has explored the impact of wellbeing,
234 work-home interference, workload, recovery, and motivational profile on burnout dimensions
235 over the course of an entire competitive season (Bentzen et al. 2014, 2016a, 2016b; Bentzen,
236 Lemyre, & Kenttä, 2017). In particular, Bentzen et al. (2016a) highlighted the potential for
237 coaching burnout to develop or dissipate over time, and further research of this nature is needed
238 if we are to develop our understanding of the dynamic burnout process (Olusoga & Kenttä,
239 2017).

240 Finally, to improve the quality and interpretation of coaching burnout research, we
241 recommend that the reporting of samples, authors provide more detailed description and
242 contextual information in the future. Descriptions of the level of coach sampled were not
243 provided in three studies (6.7%), gender breakdown of the sample was not specified in three
244 studies (6.7%), and the nature of the coaching roles was not adequately specified in sixteen
245 studies (35.6%). Contextual information is vital in understanding the burnout process and
246 differences between coaches operating at descriptively similar levels can be stark. National
247 coaches of one sport might spend 200 days a year travelling with their team, whereas coaches of
248 a similar level from another sport might spend only a few days with their athletes. Similarly,
249 coaches with one or few athletes will have a qualitatively different experience than those with
250 several. Moreover, some coaches also need to orchestrate and manage large support teams in
251 addition to being responsible for all the athletes. Since it has been stated that coaching is a
252 blended profession that occurs in many different contexts (Duffy et al., 2011), it is vital that
253 future research distinguishes between, or at the very least acknowledges distinctions between the

254 multitude of coaching roles that exist, and provides detailed descriptions of the coaches being
255 studied and their contexts.

256 *Research samples*

257 One of the strengths of the coach burnout literature to date is the variety of coaches
258 sampled (including those involved in youth-, high-school and collegiate-, amateur-, professional-
259 , and high performance sport), and across a variety of contexts (e.g., part- and full-time, as well
260 as dual-role teacher-coaches). This diversity is important for understanding the unique work-life
261 balance challenges that coaches operating in different environments might experience. It also
262 represents and reflects the blended coach profession. Of note, however, was the lack of research
263 with high-performance coaches, which comprised only 15.6% of the studies reviewed. Since job
264 insecurity, pressure, demands, and the importance of performance outcomes may peak at the
265 highest level, it is reasonable to argue that more contextual knowledge is needed. Moreover, the
266 dearth of research with female coaches and Paralympic/disability sport coaches is also a
267 limitation of the reviewed research and these coaches are worthy of further investigation. While
268 the workload and recovery that coaches experience appear to be central to the burnout
269 experience, it would still be of interest for research to explore the perhaps unique challenges that
270 present themselves to coaches in more diverse contexts, and the unique situational and contextual
271 factors that might contribute to their burnout experiences.

272 *Burnout measurement*

273 Although the overwhelming majority (85%) of the studies reviewed reported using some
274 version of MBI, there was still a considerable variation in the specific burnout measure
275 employed. Specifically, the MBI-GS (7.5%), MBI-HSS (30%), and MBI-ES (25%), developed
276 for use in educational settings, were all employed. Lundkvist, Stenling, Gustafsson, and

277 Hassmén (2014) highlighted concerns with using the MBI in coaching burnout research, namely
278 that 'neither the MBI-HSS nor the MBI-ES were developed for such a context' (p.211), and that
279 the differences between coaching and teaching/healthcare contexts (although all involve helper-
280 helpee relationships) are too great for a single burnout measure to capture. Given that the range
281 of organisational and performance stressors that sports coaches encounter might go beyond those
282 encountered in educational and health settings (i.e., stressors with direct links to sporting results
283 and, hence, job security), Lundkvist et al. argued that the MBI-GS was preferable for use in
284 coaching contexts to both the MBI-HSS and MBI-ES. However, they also suggested that the
285 CBQ should be the measure of choice for coach burnout researchers. Moreover, based on
286 Raedeke and Smith's (2004) adoption of a global burnout index, created by combining ABQ
287 subscales, Lundkvist et al. also suggested that combining the CBQ dimensions should provide a
288 theoretically sound global measure of burnout. However, only five studies (Kilo & Hassmén,
289 2016; Lundkvist et al., 2016; Malinauskas, Malinauskiene, & Dumciene, 2010; Short, Short, &
290 Haugen, 2015; Stebbings et al., 2012), actually measured burnout using the CBQ (or what the
291 authors described as an adapted version of the ABQ). Context, however, is again important here.
292 The roles of coaches in high performance sport and high-school settings are likely to be very
293 different and, as such, the appropriate scales for measuring burnout might also differ (see
294 Lundkvist et al., 2014, for detailed discussion on this topic). Moreover, the factor structure of the
295 CBQ has been questioned.

296 Comparison across research is further limited, since our findings also indicate variation in
297 the way that measurement tools have been used in the coach burnout literature. For example, the
298 intensity *and* frequency of burnout was measured in only five studies (12.5%) and in six studies
299 "burnout" was measured using only the emotional exhaustion scale of the MBI. It could well be

300 argued that using only one dimension is not a true measure of the burnout syndrome since a
301 syndrome by definition is a maladaptive condition characterised by a set of associated symptoms
302 occurring together. An important measurement issue that has not been discussed in great detail is
303 whether research is actually measuring a true burnout syndrome, or just symptoms of burnout.
304 There is no established cutoff level to validate whether researchers are studying clinical burnout.
305 In fact, burnout as a clinical diagnosis does not exist in either of the two international clinical
306 manuals for psychiatric disorders (cf., ICD-10 and DSM-V). Consequently, trying to establish
307 clinical criteria and cutoffs in measurement hold some major challenges beyond psychometric
308 issues. In addition, differentiating so-called clinical burnout from depression and normal
309 prolonged fatigue responses is essential when the emphasis is to study true burnout. Therefore,
310 we argue that the integration of more comprehensive psychiatric assessment might be useful in
311 coach burnout research. In doing so, it would also be possible to gain knowledge regarding a
312 possible overlap with other clinical and mental health issues such as sleep disorders, dependency
313 problems, and other clinical diagnoses such as depression (Bianchi, Schonfeld, & Laurent,
314 2015).

315 However, it can also be argued that measuring sub-clinical issues or just the incidence of
316 the three dimensions in high performance sport is a worthwhile endeavor, simply because a small
317 difference in coach behaviour (i.e., coach performance/efficacy) might have a practically
318 significant impact on athlete performance at times when they are sensitive to the coach-athlete
319 dynamic, not only in critical competitions, but also in the day-to-day experience of coach-athlete
320 interactions (e.g., Bentzen et al., 2014; Thelwell, Wagstaff, Rayner, Chapman, & Barker 2017).
321 For example, slightly elevated levels of exhaustion, cynicism, or a reduced sense of performance
322 accomplishment might well have a notable impact, not only on coach and athlete performance,

323 but also on the quality of the coach-athlete relationship (McNeil, 2016; Thelwell, Wagstaff,
324 Chapman, & Kenttä, G., 2017). In this matter, research should try to link reduced sense of
325 performance accomplishment to context-specific performance outcomes in competitive sports.

326 *Theoretical underpinning/conceptualisation.*

327 To date, coach burnout literature has adopted multiple burnout perspectives, from stress-based
328 explanations (Smith, 1986), to commitment perspectives (Raedeke, 2004), motivational
329 explanations (e.g., Bentzen et al., 2014, 2016a, 2016b, 2017; Donahue et al., 2012), and work-
330 home interference (Bentzen et al., 2016b; Lundkvist et al., 2012). It could be argued that this
331 inconsistency in theoretical underpinning or conceptualisation of burnout is a limitation of the
332 research. We would suggest, however, that while burnout should be explored in relation to the
333 most adequate theoretical framework/underpinning, it is a strength of the literature, which is only
334 just beginning to flourish, that various frameworks have been explored and proposed. It would be
335 remise to think that we are gaining a comprehensive understanding of the entire burnout
336 experience using only one perspective or theory. Rather than predominantly drawing from
337 athlete burnout and sport science research, we encourage future coach burnout researchers to
338 consider and integrate research findings from occupational, educational, and clinical settings. For
339 example, the model of effort-reward-imbalance at work (Siegrist, 1996; Siegrist et al., 2004) has
340 been used extensively in occupational settings and shares some aspects with Raedeke's
341 commitment perspective (1997; 2004). Moreover, clinical models developed by Barlow and
342 colleagues (2004) to explain common vulnerability factors in the genesis of emotional disorders
343 should be applicable to coach burnout.

344 *Practical implications and recommendations*

345 Based on this scoping review of the burnout literature, we recommend that future burnout
346 research captures the enduring and dynamic nature of the phenomenon by making greater use of
347 longitudinal research designs. Indeed, research that spans beyond a single competitive season
348 might shed light on coaches' experiences of the ever changing situational factors that contribute
349 to burnout. More qualitative research would redress the balance which is currently skewed
350 toward cross-sectional, quantitative designs, and would help to more fully illuminate the lived
351 experiences of coaches suffering with burnout.

352 More thought should be given to detailed reporting of participant samples, and subtle
353 differences in coaching roles should be acknowledged in order to advance contextual
354 understanding. Careful consideration should be given to the measurement of coaching burnout,
355 specifically to whether or not we are studying coaches who are truly burned out, or coaches who
356 are displaying some symptoms of one burnout dimension (i.e., by only measuring emotional
357 exhaustion). Moreover, research designs in future coach burnout literature should be afforded
358 careful attention. One obvious issue with much of the burnout literature is the use of self-report
359 measures to assess levels and incidence of burnout. Baumeister, Vohs, and Funder (2007)
360 suggested that 'self-reports of behaviour, emotion, intention, and thoughts are often illuminating,
361 may be the appropriate method for certain topics, and sometimes are all that is possible' (p. 399).
362 However, we should be cautious of 'over-interpreting' research findings and drawing too strong
363 conclusions about coach burnout based solely on self-report measures of internal experiences.
364 Self-report measures aside, thought should also be given to the methods of data analysis used.
365 For example, while longitudinal research is of clear benefit to the field, researchers should ensure
366 that analyses take into account within-person changes over time as potential predictor variables
367 (e.g., Stenling, Ivarsson, Hassmén, & Lindwall, 2017).

368 Future research should also begin to explore prevention and clinical treatment of burnout.
369 There is a growing evidence base supporting the efficacy of Mindfulness-Based Interventions. In
370 particular Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 1982) and Mindfulness-
371 Based Cognitive Therapy (MBCT; Segal, Williams, & Teasdale, 2018) have shown effectiveness
372 in improving a range of clinical and non-clinical psychological outcomes (cf., Gu, Strauss, Bond,
373 & Cavanagh, 2015). While there has been a notable rise in the use of Mindfulness-Based
374 Interventions for athlete mental health and stress management (Shinke, Stambulova, Si, &
375 Moore, 2017), performance enhancement (e.g. Röthlin, Birrer, Horvath, & Holtforth, 2016), and
376 indeed in other interpersonal professions such as nursing (e.g., Song & Lindquist, 2015), such
377 programmes might also be beneficial for coaches, particularly in terms of them developing
378 recovery and self-care strategies (Lundqvist, Ståhl, Kenttä, & Thulin, 2018).

379 Researchers also have an important role to play in terms of the language used in burnout
380 research. Related to the measurement of burnout described above, the ways in which burnout is
381 theoretically explained to athletes, coaches, National Governing Bodies (NGBs), and other key
382 stakeholders is important. Coaching is a demanding profession and it is essential that a
383 distinction is made (even if at the individual level) between the functional normative fatigue
384 response expected to be associated with the role, and the maladaptive emotional/physical
385 exhaustion associated with burnout. Coaches at the elite level have reported a culture in which
386 showing vulnerability and seeking help are regarded as a weakness, while suppressing the
387 symptoms of burnout and avoiding help-seeking is the norm (Olusoga & Kenttä, 2017).
388 Increasing coaches' awareness of when their responses are 'normal' and when they might be
389 symptoms of early burnout might a) normalise stress and burnout in coaching, and b) encourage
390 coaches to seek help when they recognise changes in their responses to stress. Perpetuating

391 stereotypes of the coaching profession should be avoided, and terminology is therefore
392 important. Researchers and professional service providers should feel a responsibility to
393 consistently promote a clear message of burnout in practice. This is also a responsibility for
394 stakeholders within professional practice. However, so far, coaches need for wellbeing has
395 commonly been neglected within the high performance community. It is therefore promising and
396 important to note that the United States Olympic Committee, in partnership with its National
397 Governing Bodies and academia, recently created and published a *Quality Coaching Framework*
398 (2017), including a chapter written explicitly about coach wellbeing, specifically noting the
399 importance of designing self-care strategies (monitoring of energy, sleep, physical activity and
400 regular wellness checkups) that can hopefully contribute to a positive change in professional
401 practice.

402 To our knowledge, only two studies (Price & Weiss, 2000; Vealey, Armstrong, Comar, &
403 Greenleaf, 1998) explore athletes' responses to coach burnout symptoms. Following recent
404 research investigating athletes' responses to coach stress (Thelwell et al., 2017), future burnout
405 research should further consider the interplay between coaches and athletes. Moreover, given the
406 cost of burnout at individual, organizational, and community sport levels, future research should
407 explore the wider impact of coach burnout, within and beyond the work environment.

408 **Summary**

409 This scoping review provides an up-to-date, critical review of the coach burnout
410 literature. The quality and quantity of coaching burnout research has certainly advanced in the
411 last decade. However, we suggest that future research should use methods that reflect and
412 attempt to capture the enduring, dynamic nature of the burnout experience. In addition, since
413 coaching is a blended profession that takes place across a multitude of professional and non-

414 professional contexts in sport and physical activity (Duffy et al., 2011), it is vital that future
415 researchers take care to provide detailed descriptions of the coaches being studied.

416 While careful consideration should be given to the tools used to measure burnout,
417 differentiating so-called clinical burnout from depression and chronic fatigue responses is
418 essential. Therefore, we argue that the integration of more comprehensive psychiatric assessment
419 might be useful in coach burnout research. Finally, future research should explore prevention and
420 clinical treatment of burnout.

421 The culture of elite sport in particular has been described as one in which vulnerability
422 and support-seeking are often perceived as weaknesses, often leading to coaches masking stress
423 and burnout (Olusoga & Kenttä, 2017). Those responsible for coach education/development,
424 NGBs, and coaches themselves have a responsibility to help shift this culture to one in which
425 coaches are actively encouraged to seek help when they recognise changes in their responses to
426 the stressors inherent in coaching.

427 **References**

- 428 Altfeld, S., & Kellmann, M. (2015). Are German coaches highly exhausted? A study of
429 differences in personal and environmental factors. *International Journal of Sports
430 Science & Coaching, 10*(4), 637-654.
- 431 Altfeld, S., Mallett, C. J., & Kellmann, M. (2015). Coaches' burnout, stress, and recovery over a
432 season: A longitudinal study. *International Sport Coaching Journal, 2*(2), 137-151.
- 433 Appleton, P. R., Hall, H. K., & Hill, A. P. (2009). Relations between multidimensional
434 perfectionism and burnout in junior-elite male athletes. *Psychology of Sport and Exercise,
435 10*, 457-465.
- 436 Arksey, H., & O'Malley, L. (2005). Scoping studies: Towards a methodological
437 framework. *International Journal of Social Research Methodology, 8*(1), 19-32.
- 438 Armstrong, R., Hall, B. J., Doyle, J., & Waters, E. (2011). 'Scoping the scope' of a cochrane
439 review. *Journal of Public Health, 33*(1), 147-150.
- 440 Barlow, D. H., Allen, L. B., Choate, M. L. (2004). Toward a unified treatment for emotional
441 disorders. *Behavioural Therapy, 35*, 205-230.
- 442 Baumeister, R. F., Vohs, K. D., & Funder, D. (2007). Psychology as the science of self-reports
443 and finger movements: Whatever happened to actual behaviour? *Perspectives on
444 Psychological Science, 2*(4), 396-403.
- 445 Bentzen, M., Lemyre, P. N., & Kenttä, G. (2014). The process of burnout among professional
446 sport coaches explored through the lens of Self-determination theory: A qualitative
447 approach. *Sports Coaching Review, 3*(2), 110-116.
- 448 Bentzen, M., Lemyre, P. N., & Kenttä, G. (2016a). Changes in motivation and burnout indices in
449 high-performance coaches over the course of a competitive season. *Journal of Applied
450 Sport Psychology, 28*(1), 28-48.

- 451 Bentzen, M., Lemyre, P. N., & Kenttä, G. (2016b). Development of exhaustion for high
452 performance coaches in association with workload and motivation: A person-centered
453 approach. *Psychology of Sport and Exercise*, 22, 10-19.
- 454 Bentzen, M., Lemyre, N., & Kenttä, G. (2017). A comparison of high-performance football
455 coaches experiencing high-versus low-burnout symptoms across a season of play: Quality
456 of motivation and recovery matters. *International Sport Coaching Journal*, 4(2), 133-146.
- 457 Bianchi, R., Schonfeld, I. S., & Laurent, E. (2015). Burnout-depression overlap: A review.
458 *Clinical Psychology Review*, 36, 28-41.
- 459 Caccese, T. M., & Mayerberg, C. K. (1984). Gender differences in perceived burnout of college
460 coaches. *Journal of Sport Psychology*, 6(3), 279-288.
- 461 Capel, S. A., Sisley, B. L., & Desertrain, G. S. (1987). The relationship of role conflict and role
462 ambiguity to burnout in high school basketball coaches. *Journal of Sport Psychology*,
463 9(2), 106-117.
- 464 Clark, H. J., Camiré, M., Wade, T. J., & Cairney, J. (2015). Sport participation and its
465 association with social and psychological factors known to predict substance use and
466 abuse among youth: A scoping review of the literature. *International Review of Sport and*
467 *Exercise Psychology*, 8(1), 224-250.
- 468 Coakley, J. (1992). Burnout among adolescent athletes: A personal failure or social problem?,
469 *Sociology of Sport Journal*, 9(3), 271-285.
- 470 Dale, J., & Weinberg, R.S. (1989). The relationship between coaches' leadership style and
471 burnout. *The Sport Psychologist*, 3(1), 1-13.
- 472 Dale, J., & Weinberg, R. (1990). Burnout in sport: A review and critique. *Applied Sport*
473 *Psychology*, 2(1), 67-83.

- 474 Donahue, E. G., Forest, J., Vallerand, R. J., Lemyre, P. N., Crevier-Braud, L., & Bergeron, E.
475 (2012). Passion for work and emotional exhaustion: The mediating role of rumination and
476 recovery. *Applied Psychology-Health and Well Being*, 4(3), 341-368.
- 477 Drake, D. & Herbert, E. P. (2002). Perceptions of occupational stress and strategies for avoiding
478 burnout: case studies of two female teacher/coaches. *Physical Educator*, 59(4), 170-184.
- 479 Duffy, P., Hartley, H., Bales, J., Crespo, M., Dick, F., Vardhan, D., ... & Curado, J. (2011). Sport
480 coaching as a 'profession': Challenges and future directions. *International Journal of*
481 *Coaching Science*, 5(2), 93-123.
- 482 Fender, L. K. (1989). Athlete burnout: Potential for research and intervention strategies. *The*
483 *Sport Psychologist*, 3(1), 63-71.
- 484 Fletcher, D. & Scott, M. (2010). Psychological stress in sports coaches: A review of concepts,
485 research, and practice. *Journal of Sports Sciences*, 28(2), 127-137.
- 486 Freudenberger, H. J. (1974). Staff burn-out. *Journal of Social Issues*, 30(1), 159-165.
- 487 Freudenberger, H. J. (1975). The staff burn-out syndrome in alternative institutions.
488 *Psychotherapy: Theory, Research & Practice*, 12(1), 73.
- 489 Gencay, S. & Gencay, O. A. (2011). Burnout among Judo coaches in Turkey. *Journal of*
490 *Occupational Health*, 53(5), 365-370.
- 491 Golembiewski, R. T., Munzenrider, R., & Carter, D. (1983). Phases of progressive burnout and
492 their work site covariants: Critical issues in OD research and praxis. *The Journal of*
493 *Applied Behavioral Science*, 19(4), 461-481.
- 494 Goodger, K., Gorely, T., Lavalley, D., & Harwood, C. (2007). Burnout in sport: A systematic
495 review. *The Sport Psychologist*, 21(2), 127-151.

- 496 Gu, J., Strauss, C., Bond, R., & Cavanagh, K. (2015). How do mindfulness-based cognitive
497 therapy and mindfulness-based stress reduction improve mental health and wellbeing? A
498 systematic review and meta-analysis of mediation studies. *Clinical Psychology Review*,
499 37, 1-12.
- 500 Gustafsson, H., Hassmén, P., Kenttä, G., & Johansson, M. (2008). A qualitative analysis of
501 burnout in elite Swedish athletes. *Psychology of Sport and Exercise*, 9(6), 800-816.
- 502 Hardin, R., Zakrajsek, R., & Gaston, B. (2015). The relationship between job satisfaction and
503 burnout in fast-pitch softball coaches. *Journal of Contemporary Athletics*, 9(1), 1-14.
- 504 Hill, A. P., Hall, H. K., & Appleton, P. R. (2010). Perfectionism and burnout in canoe polo and
505 kayak slalom athletes: The mediating influence of validation and growth seeking. *The*
506 *Sport Psychologist*, 24(1), 16-34.
- 507 Hjälml, S., Kenttä, G., Hassmén, P. & Gustafsson, H. (2007). Burnout among elite soccer
508 coaches. *Journal of Sport Behavior*, 30(4), 415- 427.
- 509 Hudson, J., Davison, G., & Robinson, P. (2013). Psychophysiological and stress responses to
510 competition in team sport coaches: An exploratory study. *Scandinavian Journal of*
511 *Medicine & Science in Sports*, 23(5), e279-e285
- 512 Hunt, K. R., & Miller, S. R. (1994). Comparison of levels of perceived stress and burnout among
513 college basketball and tennis coaches. *Applied Research in Coaching and Athletics*
514 *Annual*, 9, 198-222.
- 515 Kabat-Zinn, J. (1982). An outpatient program in behavioral medicine for chronic pain patients
516 based on the practice of mindfulness meditation: Theoretical considerations and
517 preliminary results. *General Hospital Psychiatry*, 4(1), 33-47.

- 518 Karabatsos, G., Malousaris, G., & Apostolidis, N. (2006). Evaluation and comparison of burnout
519 levels in basketball, volleyball and track and field coaches. *Studies in Physical Culture
520 and Tourism, 13*(1), 79-83.
- 521 Kelley, B. C. (1994). A model of stress and burnout in collegiate coaches - Effects of gender and
522 time of season. *Research Quarterly for Exercise and Sport, 65*(1), 48-58.
- 523 Kelley, B. C., Eklund, R. C., & Ritter-Taylor, M. (1999). Stress and burnout among collegiate
524 tennis coaches. *Journal of Sport & Exercise Psychology, 21*(2), 113-130.
- 525 Kelley, B. C., & Gill, D. L. (1993). An examination of personal situational variables, stress
526 appraisal, and burnout in collegiate teacher coaches. *Research Quarterly for Exercise and
527 Sport, 64*(1), 94-102.
- 528 Kellmann, M., Altfeld, S., & Mallett, C. J. (2015). Recovery–stress imbalance in Australian
529 Football League coaches: A pilot longitudinal study. *International Journal of Sport and
530 Exercise Psychology, 14*(3), 1-10.
- 531 Kilo, R. A., & Hassmén, P. (2016). Burnout and turnover intentions in Australian coaches as
532 related to organisational support and perceived control. *International Journal of Sports
533 Science & Coaching, 11*(2), 151-161.
- 534 Knight, C. J., Reade, I. L., Selzler, A. M., & Rodgers, W. M. (2013). Personal and situational
535 factors influencing coaches' perceptions of stress. *Journal of Sports Sciences, 31*(10),
536 1054-1063.
- 537 Koustelios, A. (2010). Burnout among football coaches in Greece. *Biology of exercise, 6*(1), 5-
538 12.
- 539 Koustelios, A. D., Kellis, S., & Bagiatis, K. (1997). The role of family variables ion football
540 coaches' burnout. *Coaching and Sport Sciences Journal, 2*(3), 41-45.

- 541 Lee, Y. H. & Chelladurai, P. (2016) Affectivity, Emotional Labor, Emotional Exhaustion, and
542 Emotional Intelligence in Coaching. *Journal of Applied Sport Psychology*, 28, 170-184.
- 543 Lemyre, P. N., Hall, H. K., & Roberts, G. C. (2008). A social cognitive approach to burnout in
544 elite athletes. *Scandinavian Journal of Medicine & Science in Sports*, 18(2), 221-234.
- 545 Levac, D., Colquhoun, H., & O'Brien, K. K. (2010). Scoping studies: advancing the
546 methodology. *Implementation Science*, 5(1), 69.
- 547 Li, L. (2012). The study on effects resulted from job burnout on performance appraisal of
548 professional coaches in China. *Advanced Materials Research*, 345, 405-410.
- 549 Lundkvist, E., Gustafsson, H., & Davis, P. A. (2015). What is missing and why is it missing
550 from coach burnout research? In P. A. Davis (Ed.), *The psychology of effective coaching
551 and management* (pp. 407-428). New York, NY: Nova Science Publishers, Inc.
- 552 Lundkvist, E. Gustafsson, H., Davis, P., & Hassmén. (2016). Workaholism, home-work/work-
553 home interference, and exhaustion among sports coaches. *Journal of Clinical Sport
554 Psychology*, 10(3), 222-236.
- 555 Lundkvist, E., Gustafsson, H., Hjälms, S., & Hassmén, P. (2012). An interpretative
556 phenomenological analysis of burnout and recovery in elite soccer coaches. *Qualitative
557 Research in Sport, Exercise and Health*, 4(3), 400-419.
- 558 Lundkvist, E., Stenling, A., Gustafsson, H., & Hassmén, P. (2014). How to measure coach
559 burnout: An evaluation of three burnout measures. *Measurement in Physical Education
560 and Exercise Science*, 18(3), 209-226.
- 561 Lundqvist, C., Ståhl, L., Kenttä, G., & Thulin, U. (2018). Evaluation of a Mindfulness
562 intervention for Paralympic leaders prior to the 2012 London Paralympic Games.
563 *International Journal of Sport Science & Coaching*, 13, 62-71.

- 564 Malinauskas, R., Malinauskiene, V., & Dumciene, A. (2010). Burnout and perceived stress
565 among university coaches in Lithuania. *Journal of Occupational Health, 52*(5), 302-307.
- 566 Maslach, C. (1976). Burned-out. *Human Behavior, 5*(9), 16–22.
- 567 Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of*
568 *Organizational Behavior, 2*(2), 99-113.
- 569 Maslach, C., & Jackson, S. E. (1986). *MBI: Maslach Burnout Inventory; Manual Research*
570 *Edition*. Palo Alto, CA: Consulting Psychologists Press.
- 571 McNeill, K., Durand-Bush, N., & Lemyre, P. N. (2016). Understanding coach burnout and
572 underlying emotions: a narrative approach. *Sports Coaching Review, 6*(2), 1-18.
- 573 Nikolaos, A. (2012). An examination of a burnout model in basketball coaches. *Journal of*
574 *Physical Education & Sport, 12*(2), 171-179.
- 575 Olusoga, P., Butt, J., Hays, K., & Maynard, I. W. (2009). Stress in elite sports coaching:
576 Identifying stressors. *Journal of Applied Sport Psychology, 21*(4), 442-459.
- 577 Olusoga, P., Butt, J., Maynard, I. W., & Hays, K. (2010). Stress and coping: A study of world
578 class coaches. *Journal of Applied Sport Psychology, 22*(3), 274-293.
- 579 Olusoga, P. & Kenttä, G. (2017). Desperate to quit: A narrative analysis of burnout and recovery
580 in sports coaching. *The Sport Psychologist, 31*(3), 237-248.
- 581 Omotoya, O. O. (1991). Frequency of burnout among selected soccer coaches in Nigeria. *Asian*
582 *Journal of Physical Education, 14*(1), 83-88.
- 583 Pastore, D. L., & Judd, M. R. (1993). Gender differences in burnout among coaches of women's
584 athletic teams of 2-year college. *Sociology of Sport Journal, 10*(2), 205-212
- 585 Pastore, D. L. & Kuga, D. J. (1993). High school coaches of women's teams: an evaluation of
586 burnout levels. *Physical Educator, 50*(3), 123-131.

- 587 Price, M. S., & Weiss, M. R. (2000). Relationships among coach burnout, coach behaviors, and
588 athletes' psychological responses. *The Sport Psychologist, 14*(4), 391-409
- 589 Quigley, T. A., Slack, T., & Smith, G. J. (1987). Burnout in secondary school teacher coaches.
590 *Alberta Journal of Educational Research, 34*, 260-274.
- 591 Raedeke, T. D. (1997) Is athlete burnout more than just stress? A sport commitment perspective.
592 *Journal of Sport and Exercise Psychology, 19*(4), 396-417.
- 593 Raedeke, T. D. (2004). Coach commitment and burnout: A one-year follow-up. *Journal of*
594 *Applied Sport Psychology, 16*(4), 333-349.
- 595 Raedeke, T. D., Granzky, T. L., & Warren, A. (2000). Why coaches experience burnout: A
596 commitment perspective. *Journal of Sport & Exercise psychology, 22*(1), 85-105.
- 597 Raedeke, T. D., & Smith, A. L. (2001). Development and preliminary validation of an athlete
598 burnout measure. *Journal of Sport & Exercise Psychology, 23*(4), 281-306.
- 599 Richards, K. A. R., Templin, T. J., Levesque-Bristol, C., & Blankenship, B. T. (2014).
600 Understanding differences in role stressors, resilience, and burnout in teacher/coaches and
601 non-coaching teachers. *Journal of Teaching in Physical Education, 33*(3), 383-402.
- 602 R othlin, P., Birrer, D., Horvath, S., & Holtforth, M. (2016). Psychological skills training and a
603 mindfulness-based intervention to enhance functional athletic performance: design of a
604 randomized controlled trial using ambulatory assessment. *BMC Psychology, 4*(1), 39.
- 605 Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in*
606 *motivation, development, and wellness*. New York, NY: Guilford Publications.
- 607 Schaufeli, W. B., Leiter, M. P., Maslach, C., & Jackson, S. E. (1996). The Maslach Burnout
608 Inventory: General Survey (MBI-GS). In C. Maslach, S. E. Jackson, & M. P. Leiter

- 609 (Eds.), *Maslach Burnout Inventory manual* (3rd ed., pp. 19–26). Palo Alto, CA:
610 Consulting Psychologist Press.
- 611 Schinke, R. J., Stambulova, N. B., Gangyan Si, G., Moore, Z. (2017). International society of
612 sport psychology position stand: Athletes' mental health, performance, and development.
613 *International Journal of Sport and Exercise Psychology*, 1-18.
- 614 Schutte, N., Toppinen, S., Kalimo, R., & Schaufeli, W. (2000). The factorial validity of the
615 Maslach Burnout Inventory-General Survey (MBI-GS) across occupational groups and
616 nations. *Journal of Occupational and Organizational Psychology*, 73(1), 53-66.
- 617 Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2018). *Mindfulness-based cognitive therapy*
618 *for depression* (2nd ed.). New York, NY: Guilford Publications.
- 619 Short, S. E., Short, M. W., & Haugen, C. R. (2015). The relationship between efficacy and
620 burnout in coaches. *International Journal of Coaching Science*, 9(1), 37-49.
- 621 Siegrist, J. (1996). Adverse health effects of high effort–low reward conditions at work. *Journal*
622 *of Occupational Health Psychology*, 1(1), 27–43.
- 623 Siegrist, J., Starke, D., Chandola, T., Godin, I., Marmot, M., Niedhammer, I., & Peter, R.,
624 (2004). The measurement of effort–reward imbalance at work: European comparisons.
625 *Social Science & Medicine*, 58(8), 1483-1499.
- 626 Sisley, B.L., Capel, S.A., & Desertrain, G.S. (1987). Preventing burnout in teachers and coaches.
627 *Journal of Physical Education, Recreation and Dance*, 58(8), 71-75.
- 628 Smith, R. (1986). Toward a cognitive-affective model of athletic burnout. *Journal of Sport*
629 *Psychology*, 8(1), 36-50.

- 630 Song, Y., & Lindquist, R. (2015). Effects of mindfulness-based stress reduction on depression,
631 anxiety, stress, and mindfulness in Korean nursing students. *Nurse Education Today*,
632 35(1), 86-90.
- 633 Stebbings, J., Taylor, I. M., Spray, C. M., & Ntoumanis, N. (2012). Antecedents of perceived
634 coach interpersonal behaviors: the coaching environment and coach psychological well-
635 and ill-being. *Journal of Sport & Exercise Psychology*, 34(4), 481-502.
- 636 Stenling, A., Ivarsson, A., Hassmén, P., & Lindwall, M. (2017). Longitudinal associations
637 between athletes' controlled motivation, ill-being, and perceptions of controlling coach
638 behaviors: A Bayesian latent growth curve approach. *Psychology of Sport and Exercise*,
639 30, 205-214.
- 640 Tashman, L. S., Tenenbaum, G., & Eklund, R. (2010). The effect of perceived stress on the
641 relationship between perfectionism and burnout in coaches. *Anxiety, Stress, & Coping*,
642 23(2),195-212.
- 643 Thelwell, R. C., Wagstaff, C. R. D., Chapman, M. T., & Kenttä, G. (2017). Examining coaches'
644 perceptions of how their stress influences the coach-athlete relationship. *Journal of*
645 *Sports Sciences*, 19, 1928-1939.
- 646 Thelwell, R.C., Wagstaff, C. R., Rayner, A., Chapman, M., & Barker, J. (2017). Exploring
647 athletes' perceptions of coach stress in elite sport environments, *Journal of Sports*
648 *Sciences*, 35(1), 44-55.
- 649 Thelwell, R. C., Weston, N. J. V., Greenlees, I. A., & Hutchings, N. V. (2008). Stressors in elite
650 sport: A coach perspective. *Journal of Sports Sciences*, 26(9), 905-918.
- 651 United States Olympic Committee. (2017). *USOC quality coaching framework*. Champaign, IL:
652 Human Kinetics.

- 653 Vealey, R. S., Armstrong, L., Comar, W., & Greenleaf, C. A. (1998). Influence of perceived
654 coaching behaviors on burnout and competitive anxiety in female college athletes.
655 *Journal of Applied Sport Psychology, 10*(2), 297-318.
- 656 Vealey, R. S., Udry, E. M., Zimmerman, K, & Soliday, J. (1992). Intrapersonal and situational
657 predictors of coaching burnout. *Journal of Sport & Exercise Psychology, 14*(1), 40-58.
- 658 Wilson, V. E., & Bird, E. I. (1988). Burning out in coaching – Part two: Results from survey of
659 national coaches. *Sport Science on Research and Technology in Sport, 8*(9).
- 660 Yin, X. C., & Xue, Z. M. (2009). Job burnout scale for competition sport coaches. *Acta*
661 *Psychologica Sinica, 6*, 010.

Table 1: Summary of studies included in the scoping review

	N	Sex	Level	Role	Sport Type	Country	Methodology	Study Design	BO Measure	Main Findings	Theoretical framework	
		M/F MIX	HP PRO AM COLL HS YS	PT/FT	Team Individual		QUANT QUAL MIXED	CS LONG RET	All three dimensions and frequency only, unless otherwise stated)			
1	Altfield, S., & Kellmann, M. (2015). Are German coaches highly exhausted? A study of differences in personal and environmental factors. <i>International Journal of Sports Science and Coaching</i> , 10(4), 637-654.	158	MIX F = 9% M = 91%	MIX HP = 46% PRO = 37% Other = 27	FT	MIX T = 46.8% I = 53.2%	Germany	QUANT Survey	CS	MBI-C (German) EE Only	Overall stress and overall recovery demonstrated significant effects on exhaustion. Sense of wellbeing and feeling of meaningfulness both significantly related to exhaustion.	Stress / Recovery
2	Altfield, S., Mallett, C. J., & Kellmann, M. (2015). Coaches' burnout, stress, and recovery over a season: A longitudinal study. <i>International Sport Coaching Journal</i> , 2(2), 137-151.	70	MIX F=18% M = 82%	MIX	MIX FT = 64.3% PT = 35.7%	MIX T = 82% I = 18%	Germany	QUANT Survey	LONG	MBI-C	Burnout levels did not significantly change over the course of a season. Full-time coaches whose values of perceived success decreased over the season showed increased emotional stress and decreased recovery values.	Stress / Recovery
3	Bentzen, M., Lemyre, P. N., & Kenttä, G. (2014). The process of burnout among professional sport coaches explored through the lens of Self-determination theory: A qualitative approach. <i>Sports Coaching Review</i> , 3(2) 101-116.	4	MIX F = 50% M = 50%	HP	FT	MIX	Norway	QUAL Interview	RET	N/A	Heavy workloads, lack of leader support, and work-related conflicts affected motivation. Psychological need thwarting and more controlled motivation explained increasing risk of burnout over time.	SDT Workload
4	Bentzen, M., Lemyre, P. N., & Kenttä, G. (2016a). Changes in motivation and burnout indices in high-performance coaches over the course of a competitive season. <i>Journal of Applied Sport Psychology</i> , 28(1), 28-48.	343	MIX F = 8.7% M = 91.3%	HP	N.S.	MIX T = 52.2% I = 47.8%	Norway & Sweden	QUANT Survey	LONG 1 season	MBI-GS	Coaches increased in burnout and decreased in wellbeing over the course of a season. SDT process model of change useful for explaining differences in burnout and wellbeing in professional work experiences.	SDT Workload
5	Bentzen, M., Lemyre, P. N., & Kenttä, G. (2016b). Development of exhaustion for high performance coaches in association with workload and motivation: A person-centered approach. <i>Psychology of Sport and Exercise</i> , 22, 10-19.	299	MIX F = 8.4% M = 91.6%	HP	N.S.	MIX T = 44.5% I = 55.5%	Norway & Sweden	QUANT Survey	LONG 1 season	MBI-GS: EE Only	Higher levels of workload and work-home interference were associated with higher exhaustion. Higher levels of recovery, intrinsic and identified regulations associated with lower levels of exhaustion.	SDT Workload
6	Bentzen, M., Lemyre, P. N., & Kenttä, G. (2017). A comparison of high-performance football coaches experiencing high-versus low-burnout symptoms across a season of play: Quality of motivation and recovery matters. <i>International Sport Coaching Journal</i> , 4(2), 133-146.	92	MIX F = 6.5% M = 93.5%	MIX HP PRO	FT	TEAM Soccer	Norway	MIXED Survey Interview	LONG 1 season	MBI-GS	Motivational profile, work-home interference, and ability to meet recovery demands were variables that contributed to explain differences in coaches' burnout symptoms.	SDT Workload
7	Caccese, T. & Mayerberg, C. (1984). Gender differences in coaches Perceived burnout of college coaches. <i>Journal of Sport Psychology</i> , 6(3), 279-280.	231	MIX F = 40.3% M =59.7%	COLL NCAA/AIW A Div. I	N.S.	N.S.	USA	QUANT Survey	CS	MBI-HSS Freq. & Int.	Female coaches reposted significantly higher levels of emotional exhaustion and significantly lower levels of personal accomplishment than male coaches.	Stress
8	Capel, S. A., Sisley, B. L., & Desertrain, G. S. (1987). The relationship of role conflict and role ambiguity to burnout in high school basketball coaches. <i>Journal of Sport Psychology</i> , 9, 106-117.	235	MIX No Info	HS Dual Role Teacher Coaches	PT	TEAM Basketball	USA	QUANT Survey	CS	MBI-HSS Freq. & Int.	Higher role conflict, higher role ambiguity, and lower student enrolment in the school contributed significantly to higher burnout frequency and intensity	Stress Workload

9	Dale, J., & Weinberg, R. S. (1989). The relationship between coaches' leadership style and burnout. <i>The Sport Psychologist</i> , 3, 1-13.	302	MIX F = 23% M = 77%	HS & COLL NCAA Div. I	FT	MIX	USA	QUANT Survey	CS	MBI-HSS Freq. & Int.	Coaches displaying consideration style of leadership scored higher on freq. and int. of emotional exhaustion and depersonalisation. Male coaches scored higher in freq. and int. of depersonalisation.	Stress Leadership
10	Donahue, E. G., Forest, J., Vallerand, R. J., Lemyre, P. N., Crevier-Braud, L., & Bergeron, E. (2012). Passion for work and emotional exhaustion: The mediating role of rumination and recovery. <i>Applied Psychology-Health and Well Being</i> , 4(3), 341-368.	117	MIX, F = 11.1% M = 88% (1 = N.S.)	Study1 MIX Study 2 conducted with Nurses	MIX FT = 81%	MIX	Norway	QUANT Survey	CS	MBI-HSS EE Only	Obsessive passion predicted ruminative thoughts which, in turn predicted emotional exhaustion. Harmonious passion prevented the use of rumination and indirectly protected coaches against emotional exhaustion.	Dualistic Model of Passion
11	Drake, D. & Herbert, E. P. (2002). Perceptions of occupational stress and strategies for avoiding burnout: case studies of two female teacher/coaches. <i>Physical Educator</i> , 59 (4), 170-184.	2	F	HS	PT Dual Role	TEAM Basketball Soccer Volleyball	USA	QUAL Case Study Interview	LONG 4 months	N/A	Stressors included intra-role conflicts, coaching multiple sports, and inter-role conflicts. Coaches described a cyclical pattern of stress over each academic year, and over a career.	Stress
12	Gencay, S. & Gencay, O. A. (2011). Burnout among Judo coaches in Turkey. <i>Journal of Occupational Health</i> , 53, 365-370.	65	MIX F = 15.4% M = 84.6%	HP	N.S.	IND Judo	Turkey	QUANT Survey	CS	MBI(N.S.) (Turkish)	Burnout levels of coaches ranged from low to moderate. More experienced Judo coaches (over 16 years) had higher levels of emotional exhaustion than less experienced Judo coaches. Coaches who did not feel satisfaction from their sport administrators had significantly higher levels of emotional exhaustion than those who did.	Stress
13	Hardin, R., Zakrajsek, R., & Gaston, B. (2015). The relationship between job satisfaction and burnout in fast-pitch softball coaches. <i>Journal of Contemporary Athletics</i> , 9(1), 1-14.	326	MIX F = 22% M = 78%	MIX COLL 40.8% (all divisions) HS = 42.6%	MIX FT = 47.5% PT = 31.6%	TEAM Fast-pitch softball	USA	QUANT Survey	CS	MBI-HSS	Softball coaches were moderately burned out. Operating conditions, nature of work, contingent rewards, and promotion influenced coaches' levels of burnout.	SDT
14	Hjältn, S., Kenttä, G., Hassménan, P. & Gustafsson, H. (2007). Burnout among elite soccer coaches. <i>Journal of Sport Behavior</i> , 30(4), 415- 427.	47	M	HP	MIX	TEAM Soccer	Sweden	QUANT Survey	CS	MBI-ES	71% of coaches in the Women's Premier League experienced moderate to high levels of emotional exhaustion, compared to 23% of coaches in the men's league. Increased leadership demands place coaches in the women's league at higher risk of burnout.	Stress
15	Hunt, K. R., & Miller, S. R. (1994). Comparison of levels of perceived stress and burnout among college basketball and tennis coaches. <i>Applied Research in Coaching and Athletics Annual</i> , 9, 198-222.	915 & 955	N.S.	COLL NCAA Div. I and III)	N.S.	MIX Tennis Basketball	USA	QUANT Survey	CS / LONG	MBI-HSS modified Freq. & Int.	Burnout rates were higher for basketball than tennis, and were higher at T2 (1990-91) than T1 (1982-83). For both coaching groups, self-imposed pressure to win was the greatest stressor	Stress
16	Karabatsos, G., Malousaris, G., & Apostolidis, N. (2006). Evaluation and comparison of burnout levels in basketball, volleyball and track and field coaches. <i>Studies in Physical Culture and Tourism</i> , 13(1), 79-83.	452	N.S	N.S	N.S.	MIX Basketball Volleyball Track & Field	Greece	QUANT Survey	CS	MBI-ES	Basketball coaches reported higher emotional exhaustion and depersonalisation than coaches from other sports, and displayed explicit tendencies for burnout. Team sports coaches experienced "considerable" levels of professional burnout.	Stress
17	Kelley, B. C. (1994). A model of stress and burnout in collegiate coaches - Effects of gender and time of season. <i>Research Quarterly for Exercise and Sport</i> , 65(1), 48-58.	249	MIX F = 47.4% M = 52.6%	COLL NCAA Div. III	PT Coach only = 17% Teach/Coach = 38%	TEAM Baseball Softball	USA	QUANT Survey	CS / LONG 1 season	MBI-ES modified	Male and female coaches higher in coaching issues and lower in hardiness were higher in perceived stress. Both male and female coaches' stress appraisal was predictive of all burnout components.	Stress
18	Kelley, B. C., Eklund, R. C., & Ritter-Taylor, M. (1999). Stress and burnout among collegiate tennis coaches. <i>Journal of Sport & Exercise Psychology</i> , 21(2), 113-130.	265	MIX F = 37.4% M = 62.6%	COLL NCAA Div. I (30.2%) Div. II, III, or NAIA (69.8%)	MIX PT = 71%	IND Tennis	USA	QUANT Survey	CS	MBI-ES modified	High levels of burnout among the sample A significant multivariate effect was found for gender but not competition level. Women had higher tendency to find coaching stressful than men Women higher on CIS	Stress

19	Kelley, B. C., & Gill, D. L. (1993). An examination of personal situational variables, stress appraisal, and burnout in collegiate teacher coaches. <i>Research Quarterly for Exercise and Sport</i> , 64(1), 94-102.	214	MIX F = 53.7% M = 46.3%	COLL NCAA Div. III & NAIA	PT Dual Role	TEAM Basketball	USA	QUANT Survey	CS	MBI-ES modified	Greater satisfaction with social support, less experience, and gender (females higher), were related to stress appraisal. All stress appraisals were positively related to burnout.	Stress
20	Kilo, R. A., & Hassmén, P. (2016). Burnout and turnover intentions in Australian coaches as related to organisation support and perceived control. <i>International Journal of Sport Science & Coaching</i> , 11(2), 151-161.	406	MIX F = 28% M = 72%	MIX All levels	MIX FT = 19.2% PT = 80.8%	MIX Multiple	Australia	QUANT Survey	CS	CBQ	Higher perceived organisational support was associated with lower coach burnout scores. Internal locus of control and use of approach coping strategies predicted lower levels of burnout. All three burnout dimensions were strong predictors of coaches' turnover intentions.	Conservation of Resources (COR)
21	Koustelios, A. (2010). Burnout among football coaches in Greece. <i>Biology of Exercise</i> , 6(1), 5-12.	132	M	AM	PT (assumed)	TEAM Football	Greece	QUANT Survey	CS	MBI-HSS	Low overall levels of burnout. No significant differences between age groups and Emotional Exhaustion was highest among 30-39yr olds	Stress
22	Koustelios, A. D., Kellis, S., & Bagiatis, K. (1997). The role of family variables on football coaches' burnout. <i>Coaching and Sport Sciences Journal</i> , 2(3), 41-45.	203	M	N.S.	N.S.	TEAM Football	Greece	QUANT Survey	CS	MBI-HSS (Greek)	Single coaches experienced a statistically higher level of depersonalisation than married coaches. An interaction effect found single coaches with no children scored higher on depersonalisation than married coaches with children.	Stress
23	Lee, Y. H. & Chelladurai, P. (2016) Affectivity, Emotional Labor, Emotional Exhaustion, and Emotional Intelligence in Coaching. <i>Journal of Applied Sport Psychology</i> , 28, 170-184.	430	MIX F = 34.7% M = 65.3%	COLL NCAA Div. I	N.S.	MIX	USA	QUANT Survey	CS	MBI (N.S) EE Only (modified - 5 items only)	Positive affectivity predicted three forms of emotional labour. Coaches' surface acting and genuine expression significantly predicted their Emotional Exhaustion. Emotional intelligence moderated the relationship between surface acting and Emotional Exhaustion.	Emotional Labour
24	Li, L. (2012). The Study on Effects Resulted from Job Burnout on Performance Appraisal of Professional Coaches in China. <i>Advanced Materials Research</i> , 345, 405-410.	213	N.S	MIX	Managers or Coaches in professional sports teams	MIX	China	QUANT Survey	CS	Job Burnout Scale	Burnout is the Independent here. Low potency and knowledge drain elements of burnout predict task performance (KD being the primary factor).	Stress Workload
25	Lundkvist, E., Gustafsson, H., Hjälm, S., & Hassmén, P. (2012). An interpretative phenomenological analysis of burnout and recovery in elite soccer coaches. <i>Qualitative Research in Sport, Exercise and Health</i> , 4(3), 400-419.	8	M (from Hjälm et al., 2007)	HP	MIX FT = 1	TEAM Football	Sweden	QUAL Interview	RET	N/A	Findings describe coach burnout as stemming from a combination of issues related to home and work. Two profiles of burnout identified: - handling performance culture - overall situation including workload, family, and health	Stress / Recovery Workload
26	Lundkvist, E. Gustafsson, H., Davis, P., & Hassmén. (2016). Workaholism, home-work/work-home interference, and exhaustion among sports coaches. <i>Journal of Clinical Sport Psychology</i> , 10, 222-236.	261	MIX 261	MIX 17% PRO Rest HS	MIX FT=54% PT=44%	MIX Soccer Athletics	Sweden	QUANT Survey	CS	CBQ EE Only	Workaholism associated with Emotional Exhaustion for coaches high on EE. Negative work-home interference has a stronger association with EE than negative home-work interference. Coaches in the higher percentiles have a higher risk for burnout.	Work-Home Interference
27	Malinauskas, R., Malinauskiene, V., & Dumciene, A. (2010). Burnout and perceived stress among university coaches in Lithuania. <i>Journal of Occupational Health</i> , 52(5), 302-307.	203	MIX F = 33% M = 67%	COLL	N.S.	N.S.	Lithuania	QUANT Survey	CS	CBQ	Burnout was more common among university coaches with over 10 years' experience. Higher levels of perceived stress were associated with burnout.	Stress
28	McNeill, K., Durand-Bush, N., & Lemyre, P. N. (2016). Understanding coach burnout and underlying emotions: a narrative approach. <i>Sports Coaching Review</i> , 6(2), 1-18.	5	MIX, F = 2 M = 3	MIX	FT	IND'L Mixed sports	Canada	QUAL Interview	Narrative	MBI-ES	Coaches described a variety of emotions including anger, anxiety, apathy, and dejection, which have negative implications on their well-being and coaching practice. Emotions were linked to the three dimensions of burnout.	Emotions
29	Nikolaos, A. (2012). An examination of a burnout model in basketball coaches. <i>Journal of Physical Education & Sport</i> , 12(2), 171-179.	170	M	PRO At least 1 season with Nat. Division Club	N.S.	TEAM Basketball	Greece	QUANT Survey	CS	MBI-ES	26% variance in perceived stress was accounted for by coaching level, social support, and years in present position 23% of variance in burnout level was accounted for by combination of indirect and direct variables, with perceived stress being a major predictor.	Stress

30	Olusoga, P. & Kenttä, G. (2017). Desperate to quit: A narrative analysis of burnout and recovery in sports coaching. <i>The Sport Psychologist</i> , 31(3), 237-248.	2	M	HP	FT	TEAM	Sweden	QUAL Interview	RET	N/A	Findings highlighted the experiences of burnout including antecedents, experiences of coaching with burnout, withdrawal from sport, and recovery and personal growth. Role-clarity, work-life balance, counselling, and mentoring all important in facilitating recovery.	Stress Work Home Interference
31	Omotoya, O. O. (1991). Frequency of burnout among selected soccer coaches in Nigeria. <i>Asian Journal of Physical Education</i> , 14 (1), 83 – 88.	40	M	PRO	FT	TEAM Soccer	Nigeria	QUANT Survey	CS	MBI(N.S.) Freq. & Int.	No significant differences between successful and less successful coaches on emotional exhaustion and depersonalisation. Successful coaches (win-loss) scored significantly higher in personal accomplishment than less successful coaches.	Stress
32	Pastore, D. L., & Judd, M. R. (1993). Gender differences in burnout among coaches of women's athletic teams of 2-year college. <i>Sociology of Sport Journal</i> , 10, 205-212.	232	MIX F = 35% M = 65%	COLL	N.S	MIX Basketball Volleyball X-country Tennis	USA	QUANT Survey	CS	MBI-ES	A main effect for gender revealed females scored higher on emotional exhaustion than males. Female coaches were more burned out on all three burnout subscales than norms. Male coaches were less burned out than norms.	Not explicitly stated Reference to work life balance
33	Pastore, D. L. & Kuga, D. J. (1993). High school coaches of women's teams: an evaluation of burnout levels. <i>Physical Educator</i> , 50 (3), 123-131.	167	MIX F = 39% M = 61%	HS	N.S	MIX Softball Track	USA	QUANT Survey	CS	MBI-ES	Female coaches reported higher levels of emotional exhaustion, depersonalisation, and personal accomplishment than male coaches. The overall degree of burnout was average for males, and average to high for females.	Stress
34	Price, M. S., & Weiss, M. R. (2000). Relationships among coach burnout, coach behaviors, and athletes' psychological responses. <i>The Sport Psychologist</i> , 14, 391-409.	15 Coaches (15) + 193 F = 5 M = 10	MIX F = 5 M = 10	HS	PT Dual Role	TEAM Soccer	USA	QUANT Survey	CS	MBI-ES	Coaches higher in EE were perceived as providing less training and instruction and less social support and making fewer autocratic and democratic decisions. Athletes' perceptions of more training and instruction, social support, positive feedback, more democratic and less autocratic styles were related to more positive (perceived competence, enjoyment) and less negative (anxiety burnout) psychological consequences.	Leadership
35	Quigley, T. A., Slack, T., & Smith, G. J. (1987). Burnout in secondary school teacher coaches. <i>Alberta Journal of Educational Research</i> , 34, 260-274.	75 > 21	N.S.	HS	PT Dual Role	N.S	Canada	MIXED Survey Interview	CS/RET	MBI-C	Coaches had moderate levels of EE, lower personal accomplishment, and moderate depersonalisation compared to norms. More females in were in the upper phases of burnout than males and less experienced coaches appeared more prone to burnout. Size of School (smaller = greater burnout), Amount of Admin, Compensation, and recognition and reward all factors influencing burnout	Golembiewski's (1983) Phase Model of Burnout
36	Raedeke, T. D. (2004). Coach commitment and burnout: A one-year follow-up. <i>Journal of Applied Sport Psychology</i> , 16, 333-349.	141	MIX 141 F = 43.3% M = 56.7%	YS Age group swimmers	MIX PT = 61%	IND Swimming	USA	QUANT Survey	LONG 1 year	MBI-C EE Only (CBI)	Coaches with characteristics suggesting increased entrapment showed the largest increase in exhaustion. Those with decreased coaching interest had the lowest commitment.	Commitment
37	Raedeke, T. D., Granzky, T. L., & Warren, A. (2000). Why coaches experience burnout: A commitment perspective. <i>Journal of Sport & Exercise psychology</i> , 22, 85-105.	295	MIX F = 43% M = 57%	YS Age group swimmers	MIX FT = 35% PT = 65%	MIX Swimming	USA	QUANT Survey	CS	MBI-C EE Only (CBI)	Three clusters of coaches were identified (Commitment, Entrapment, Less Interested). Cluster differences explained 38% of variance in burnout and commitment scores. Entrapped coaches higher on burnout than other groups.	Commitment
38	Richards, K. A. R., Templin, T. J., Levesque-Bristol, C., & Blankenship, B. T. (2014). Understanding differences in role stressors, resilience, and burnout	413	MIX Teacher Coaches	MIX HS YS	MIX TC = 50.1% NTC = 49.9%	MIX Physical Education	USA	QUANT Survey	CS	MBI-ES	All participants reported low Role Ambiguity and depersonalisation, moderate levels of role conflict, emotional exhaustion, and high levels of role overload,	Role Theory

in teacher/coaches and non-coaching teachers. <i>Journal of Teaching in Physical Education</i> , 33(3), 383-402.		M = 21.3% F = 28.8% Non-Teacher Coaches F = 42.1% M = 7.8%								and personal accomplishment A small interaction effect found - emotional exhaustion lower for teacher coaches in non-core subjects.
39 Short, S. E., Short, M. W., & Haugen, C. R. (2015). The Relationship Between Efficacy and Burnout in Coaches. <i>International Journal of Coaching Science</i> , 9(1), 37-49.	101	MIX T1 (101) F = 13.9% M = 86.1% T2 (68) F = 16.1% M = 83.9%	HS	MIX 97% employed outside coaching	TEAM Basketball	USA	QUANT Survey	LONG 1 season	CBQ	Coaches had lower coaching efficacy scores and higher burnout scores at post-season compared to pre-season. Efficacy Correlations between coaching efficacy and burnout were negative at both time points. Low efficacy coaches were more burned out as time passed compared to high efficacy coaches.
40 Sisley, B. L., Capel, S. A., & Desertrain, G. S. (1987). Preventing burnout in teachers and coaches. <i>Journal of Physical Education, Recreation and Dance</i> , 58, 71-75.	235	MIX F = 7% M = 93%	HS	N.S. (Head Coaches)	TEAM Basketball	USA	QUANT Survey	CS	MBI-HSS modified	None of the teacher coaches reported high levels of Stress burnout, emotional exhaustion, depersonalisation, or low personal accomplishment.
41 Stebbings, J., Taylor, I. M., Spray, C. M., & Ntoumanis, N. (2012). Antecedents of perceived coach interpersonal behaviors: the coaching environment and coach psychological well-and ill-being. <i>Journal of Sport & Exercise Psychology</i> , 34(4), 481-502.	418	MIX 418 M = 73.2% F = 26.8%	MIX All levels	MIX FT = 14.4%	MIX 32 different sports	UK	QUANT Survey	CS	CBQ E/PE Only	Higher work-life conflict and fewer opportunities for professional development were associated with a distinct maladaptive process of thwarted psychological needs, psychological ill-being, and perceived controlling interpersonal behaviour.
42 Tashman, L. S., Tenenbaum, G., & Eklund, R. (2010). The effect of perceived stress on the relationship between perfectionism and burnout in coaches. <i>Anxiety, Stress, & Coping</i> , 23(2), 195-212.	177	MIX F = 35.5% M = 66.4%	COLL All levels	N.S.	MIX 12 different sports	USA	QUANT Survey	CS	MBI Adapted for use with coaches	Results indicated an indirect effect of self-evaluative perfectionism on burnout through perceived stress, as well as a significant direct link to burnout, accounting for 56% of its variance. Conscientious perfectionism did not impact burnout either directly or indirectly.
43 Vealey, R. S., Armstrong, L., Comar, W., & Greenleaf, C. A. (1998). Influence of Perceived Coaching Behaviors on Burnout and Competitive Anxiety in female College Athletes. <i>Journal of Applied Sport Psychology</i> , 10, 297-318.	12 + 149	Coaches MIX F = 11 M = 1	COLL NCAA Div. I = 7 Div. II = 2 Div. III = 3	N.S.	TEAM Basketball Softball	USA	QUANT Survey	CS	MBI-HSS Adapted for use with coaches	Coach burnout significantly related to perceived coaching styles/behaviour. Coaches higher in emotional exhaustion and depersonalisation were perceived by their athletes to use dispraise and an autocratic coaching style.
44 Vealey, R. S., Udry, E. M., Zimmerman, K., & Soliday, J. (1992). Intrapersonal and situational predictors of coaching burnout. <i>Journal of Sport & Exercise Psychology</i> , 14, 40-58.	848	MIX 848 F = 23.7% M = 75.5% NS = 0.8%	MIX HS & COLL	N.S.	MIX 10 different sports	USA	QUANT Survey	CS	MBI-HSS Adapted for use with coaches	Trait anxiety emerged as the strongest predictor of Stress burnout. Several other cognitive perceptions of the coaching role (perceived overload of demands, control or autonomy, attainment of meaningful accomplishment, value, professional support, rewards, success, excitement) were also predictive of burnout
45 Wilson, V. E., & Bird, E. I. (1988). Burning out in coaching – Part two: Results from survey of national coaches. <i>Sport Science on Research and Technology in Sport</i> , 8(9).	144	MIX F = 13.2% M = 85.4%	N.S.	MIX FT = 65%	N.S.	Canada	QUANT Survey	CS	MBI-HSS	Coaching was reported to be stressful (although no indication of how this was measured is provided). Full-time coaches reported higher levels of burnout and 'stress related symptoms' than part-time coaches.

KEY:

LEVEL: HP = High Performance; PRO = Professional; AM = Amateur; COLL = Collegiate; HS = High-School; YS = Youth Sport.

STUDY DESIGN: CS = Cross Sectional; LONG = Longitudinal; RET = Retrospective

BO MEASURE*: MBI = Maslach Burnout Inventory; HSS = Human Services Survey; GS = General Survey; ES = Educators Survey; C = Adapted for use with coaches; EE = Emotional Exhaustion; CBQ = Coach Burnout Questionnaire

All categories: N.S. = Not Stated

*Some authors referred specifically to the MBI-C, while others referred to "adapted" or "modified" versions of other MBI questionnaires. We have attempted to capture the burnout measure used, as specifically described by the authors in each study.

Table 2: Summary of the sample characteristics of the studies included in this review

Demographic	n	% of sample
Country		
North America	24	53.3
<i>USA</i>	21	46.7
<i>Canada</i>	3	6.7
Scandinavia	9	20.0
<i>Sweden</i>	4	8.9
<i>Norway</i>	3	6.7
<i>Sweden & Norway</i>	2	4.4
Europe	9	20.0
<i>Greece</i>	4	8.9
<i>Germany</i>	2	4.4
<i>UK</i>	1	2.2
<i>Turkey</i>	1	2.2
<i>Lithuania</i>	1	2.2
Other	3	6.7
<i>China</i>	1	2.2
<i>Australia</i>	1	2.2
<i>Nigeria</i>	1	2.2
Gender of Coach		
Male	7	15.5
Female	1	2.2
Mixed male & female	34	75.6
Did not specify	3	6.7
Employment Status		
Full-time	8	17.8
Part-time (inc. dual role)	7	15.5
Mixed FT & PT	14	31.1
Did not specify	16	35.6
Sport Type		
Team	17	37.8
Individual	4	8.9
Mixed team and individual	20	44.4
Did not specify	4	8.9
Coaching Level		
"High Performance"	7	15.6
"Professional"	2	4.4
Collegiate	10	22.2
High-School	7	15.6
Collegiate and High School	3	6.7
Amateur	1	2.2
Youth Sport	2	4.4
Multiple performance levels	10	22.2
Did not Specify	3	6.7

Table 3: Study design characteristics of the 45 studies included in this review.

Study design characteristic	n	% of sample
Methodology		
Quantitative	38	84.45
Qualitative	5	11.1
Mixed methods	2	4.45
Design *		
Cross sectional	32	80
Longitudinal	8	20
Burnout Measure *		
MBI-HSS	12	30.0
MBI-GS	3	7.5
MBI-ES	10	25.0
MBI- C	5	12.5
MBI- version not stated	4	10.0
CBQ	5	12.5
Job Burnout Scale	1	2.5

***used in the 40 quantitative/mixed methods studies**

662 **Appendix A: Publications excluded from the review**

663 ***Book chapters***

664 Altfeld, S., & Kellmann, M. (2013). Burnout in coaches. In B. R. Doolittle (Ed.), *Psychology of*
665 *burnout: New research* (pp. 193-207). New York, NY: Nova Science Publishers.

666 Kallus, K. W. & Kellmann, M. (2000). Burnout in athletes and coaches. In Y. L. Hanin (Ed.),
667 *Emotions in sport* (pp. 209-230). Champaign, IL: Human Kinetics.

668 Odom, S. & Perin, T. (1985). Coach and athlete burnout. In L. Bunker, R. Rotella, & A. Reilly
669 (Eds.), *Sport psychology: Psychological considerations in maximising sport performance*
670 (pp. 213-222). Ann Arbor, MI: McDaught and Quinn inc.

671 Raedeke, T. D., & Kenttä, G. (2013). Coach burnout. In P. Potrac, W. Gilbert, & J. Denison
672 (Eds.), *Handbook of sports coaching* (pp. 424-435). New York, NY: Routledge

673 ***Reviews***

674 Dale, J., & Weinberg, R.S. (1990). Burnout in sport: A review and critique. *Applied Sport*
675 *Psychology*, 2(1), 67-83.

676 Dimitrios, B., Athanasios, K., Eleni, Z., Maria, K., Labros, S., & Ioanna, B. (2013). Job
677 satisfaction and job burnout of coaches – a review of the international literature.
678 *International Journal of Human Resource Management and Research*, 3(3), 27-38.

679 Goodger, K., Gorely, T., Lavalley, D., & Harwood, C. (2007). Burnout in sport: A systematic
680 review. *The Sport Psychologist*, 21(2), 127-151.

681 ***Professional practice***

682 Giges, B., Petitpas, A.J., & Vernacchia, R.A. (2004). Helping coaches meet their own needs:
683 Challenges for the sport psychology consultant. *The Sport Psychologist*, 18(4), 430-444.

684 ***Abstracts***

- 685 Hunt, K. (1983). The relationship between occupational stressors and burnout among coaches.
686 *Dissertation Abstracts International*, 44(8)
- 687 Pease, D. G., Zapalac, R. K. & Lee, R. (2003). Role of selected variables in the burnout of high
688 school basketball coaches. *Research Quarterly for exercise and Sport*, 74(1), Supple. A-
689 66.
- 690 ***Limited/no burnout data***
- 691 Altfeld, S., & Kellmann, M. (2014). Measurement of coaches burnout: reliability and validity of
692 three burnout questionnaires. *German Journal of Sports Medicine*, 65(2), 43-49.
- 693 Bradford, S. H. & Keshock, C. M. (2009). Female coaches and job stress: A review of the
694 literature. *College Student Journal*, 43(1), 196-200.
- 695 Dixon, M. A., & Bruening, J. E. (2007). Work-family conflict in coaching I: A top-down
696 perspective. *Journal of Sport Management*, 21(3), 377.
- 697 Kellmann, M., Altfeld, S., & Mallett, C. J. (2015). Recovery–stress imbalance in Australian
698 Football League coaches: A pilot longitudinal study. *International Journal of Sport and*
699 *Exercise Psychology*, 14(3), 1-10.
- 700 Lundkvist, E., Stenling, A., Gustafsson, H., & Hassmén, P. (2014). How to measure coach
701 burnout: An evaluation of three burnout measures. *Measurement in Physical Education*
702 *and Exercise Science*, 18(3), 209-226.
- 703 Felder, D., & Wishnietsky, D. (1990). Role conflict, coaching burnout and reduction in the
704 number of female interscholastic coaches. *The Physical Educator*, 47(2), 7-13.
- 705 Frey, M. (2007). College coaches' experiences with stress: Problem solvers have problems, too.
706 *The Sport Psychologist*, 21(1), 38-57.

- 707 Hudson, J., Davison, G., & Robinson, P. (2013). Psychophysiological and stress responses to
708 competition in team sport coaches: An exploratory study. *Scandinavian Journal of*
709 *Medicine & Science in Sports*, 23(5), e279-e285
- 710 Sisley, B. L., & Capel, S. A. (1986). High school coaching filled with gender differences. *Journal*
711 *of Physical Education, Recreation and Dance*, 57(3), 39-43
- 712 ***Teachers/Physical Education***
- 713 Saiiari, A., Moslehi, M., & Valizadeh, R. (2011). Relationship between emotional intelligence
714 and burnout syndrome in sport teachers of secondary schools. *Procedia-Social and*
715 *Behavioral Sciences*, 15, 1786-179.
- 716