

1 **Olympic and Paralympic Coaches Living with Stress – is it Such a Problem? Potential**
2 **Implications for Future Coach Education in Sport.**

3 Sports coaches work in a complex and dynamic environment that can lead to high levels of pressure
4 and stress (Bowes & Jones, 2006; Fletcher & Scott, 2010; Lyle, 1999). An important aspect of this
5 complexity is the way stress is recognized and dealt with (Olusoga et al., 2009). Whilst the impact of
6 stress on athletes' performance has received significant attention (Gustafsson et al., 2017; Schinke et
7 al., 2018), substantially less focus has been given to coaches, particularly those performing at the elite
8 level (Dixon & Turner, 2018; Potts et al., 2021). This is perhaps down to the perception that coaches
9 are often seen as the source of solutions as opposed to requiring help themselves (Frey, 2007).
10 However, Thelwell et al. (2008) suggested that coaches must also be considered as performers in their
11 own right and need the same level of help, support and research as the athletes in their charge.
12 Therefore, further examination of the stressors they experience would be an important step.
13 Consequently, there is a growing body of research looking at coaching in stressful conditions
14 (Bentzen et al., 2017; Bentzen et al., 2015; Frey, 2007; Olusoga & Kenttä, 2017; Schaffran et al.,
15 2016), alongside numerous high profile examples of stress and its negative impact on mental health
16 and coaching performance (e.g., a football coach undergoing electric shock treatment to "cure" his
17 panic attacks and suicidal thoughts; (Calvin, 2015). Given the environment within which elite coaches
18 operate, it has been highlighted that coaches are often unable or reluctant to ask for support when
19 experiencing stress through fear of appearing vulnerable or weak (Olusoga & Kenttä, 2017).

20 Stress has been defined as the "quality of experience, produced through a person's
21 environmental transaction, through either over or under arousal, resulting in psychological or
22 physiological distress" (Aldwin, 2009, p. 23). Thelwell et al. (2008) expanded on this, identifying that
23 stress is caused by the on-going interaction of an individual with the environment they find
24 themselves in and the decisions they make to cope with issues that may arise. Furthermore, Fletcher
25 and Scott (2010) draw a distinction between stressors and strain. They view stressors as
26 "environmental demands (i.e., stimuli) encountered by an individual" and strain as "an individual's
27 negative psychological, physical and behavioural responses to stressors" (Fletcher & Scott, 2010, p.

28 128). Acknowledging that stress is a complex, dynamically changing phenomenon ‘stress’ in the
29 current study is represented as an interactive process incorporating stressors, strain, appraisals and
30 coping responses that could result in both positive and negative responses (Fletcher & Scott, 2010).

31 Considering the additional responsibility and stress that is exerted upon Olympic and Paralympic
32 coaches (Collins & Cruickshank, 2012) it is therefore worth looking at stress from a coach’s
33 perspective, particularly as the studies discussed in this paper present a reasonably coherent narrative
34 around the organizational (interaction with the coach and their environment; Woodman & Hardy,
35 2001) and situational (lived in the moment experiences; Albrecht, 2010) causes of stress. These
36 include factors such as coaching responsibilities to the athletes, conflicts, pressure and expectations,
37 managing the competition environments, athlete concerns, isolation, consequences of sport status,
38 competition preparations, organizational management, sacrificing personal time, and long, irregular
39 working hours together with extensive travel (Olusoga & Kenttä, 2017; Schaffran et al., 2016).
40 However, with each coaching context being so different, it is difficult to compare individual
41 experiences (Bentzen et al., 2015; Frey, 2007; Olusoga et al., 2010), which highlights the need for
42 continued research into how world class coaches interact with stress, in order to explore
43 commonalities and differences across contexts.

44 This interaction with stress was first conceptualized by Blascovich and Mendes (2000) who
45 stated that individuals appraise stressful situations through either perceptions of danger or uncertainty
46 and then assess their ability to deal with the situation through their knowledge and skill set, resulting
47 in either challenge or threat responses. The challenge response would be where an individual
48 experiences sufficient resources to meet situational demands, whereas the threat state would be
49 considered maladaptive occurring when an individual experiences insufficient resources to meet
50 situational demands (Dixon & Turner, 2018). Therefore, this study will investigate how individuals
51 experiencing similar demands can exhibit very different responses, depending on their cognitive
52 appraisals, as outlined by Dixon and Turner (2018). Indeed, Didymus (2016) noted that future
53 research should work towards a better understanding of the ways in which high-level coaches cope
54 with the competitive and potentially stressful environment in which they work. Furthermore, Potts et

55 al. (2021) in a meta-synthesis of qualitative research highlighted the lack of research on coaches'
56 appraisals of stress and the potential impact stress may have on their mental wellbeing. With these
57 points in mind it is also worth gauging how effective coaches' coping strategies are in managing the
58 negative outcomes of stressors. Conversely, research of this nature may also lead to important insights
59 into how elite coaches foster positive outcomes from the stressors they experience, thus providing
60 potentially useful information to inform the development of novel applied coach stress management
61 interventions. Such interventions could lead to enhanced wellbeing and a reduction in the large
62 number of coaches who stop coaching each year (Potts et al., 2021).

63 Accordingly, the aim of the current study was to investigate the perceptions of Olympic and
64 Paralympic coaches on 1) the stressors they experienced in the build up to the Tokyo Olympic and
65 Paralympic Games 2) how they appraised these stressors, and 3) the coping mechanisms they used to
66 mitigate stress.

67 **METHODOLOGY**

68 In view of the range and scope of stressors that Olympic and Paralympic coaches deal with, this study
69 adopted a qualitative methodology through an interpretive approach as stress is experienced
70 differently by different people and is influenced by a range of shared realities (Thorne, 2016). As such
71 this study collated rich, descriptive data that portrays complex human experiences in line with a
72 constructive epistemological approach (Fedyk & Xu, 2018). Qualitative research emphasizes the
73 exploration of multiple contexts, experiences and gains insight to the different interpretations of the
74 various sporting paradigms (Braun & Clarke, 2012). Semi-structured interviews (available on request
75 to the first author) were selected to explore the topic area via the experiences of those who have first-
76 hand coaching experience in elite sport. Using interviews encourages the selected participants to
77 provide more in-depth information that captures the subjective meaning in contextual situations as
78 well as providing the opportunity to delve deeper into personal lived experiences (Brinkmann &
79 Kvale, 2008). The semi-structured nature of the interviews allowed for the addition of more probing
80 follow up questions (Newcomer et al., 2015).

81 **Participants**

82 Thirteen coaches (mean age: 44.7 ± 6.3 years) working towards leading athletes and or teams at the
83 Tokyo Olympic and Paralympic Games in 2021 volunteered to participate. The criteria for selection
84 was the coach had to be working as head coach with athletes or teams that had either qualified or were
85 in the midst of qualifying for the Tokyo Olympic and Paralympic Games. Of the 13 coaches
86 interviewed 12 actually took part in the Tokyo Games (one coach changed roles prior to the Games
87 and did not attend, although the athlete qualified and competed). Coaches were selected to cover a
88 broad range of demographics, to reflect the diversity of coaching contexts within Olympic and
89 Paralympic sport. These included individual or team sport (seven individual and six team), gender
90 (nine male and four female), Olympic (ten coaches) or Paralympic Coach (three coaches), Great
91 Britain (GB) (eight Coaches) or International based (five coaches) coach and multiple Olympic or
92 Paralympic coach (ten coaches) versus first time Olympic or Paralympic coach (three coaches). These
93 coaches were deliberately targeted (Lincon & Guba, 1985) in order to adequately reflect the broad
94 range of experiences and contexts that Olympic and Paralympic level coaches are operating in. All
95 identities have been anonymized. Any identifying data has been removed with coaches presented as
96 coach 1-13.

97 **Procedure**

98 Ethical approval was obtained through the University ethics committee and suitable coaches were
99 contacted via email, informing them of the purpose of the study and inviting them to participate.
100 Signed informed consent was provided prior to data collection with a reminder that the coaches could
101 withdraw from the study at any time. As we were discussing stress and potentially emotive
102 experiences the participants were also advised that they were under no obligation to answer any
103 questions that were potentially distressing. The semi-structured interviews were conducted via
104 Microsoft Teams due to restrictions imposed by the COVID-19 pandemic. Interviews ranged from 56
105 to 136 minutes in duration (mean time: 82.0 ± 20.5 mins).

106 **Interview Guide**

107 The semi-structured interview guide was developed by following the recommendations from
108 qualitative research (Kallio et al., 2016; Schubring et al., 2019) to gauge perceptions on the stressors
109 coaches experience during the build up to an Olympic and Paralympic Games. These templates
110 included questions, probing questions and stimuli to generate a depth of response. There was
111 consultation with the research team to ensure that the interview questions were suitable for the nature
112 of the research. This template was then used in a pilot study, conducted with five international
113 coaches, to ensure the interviews provided rich data sets. This process helped to ensure reliability
114 (Kallio et al., 2016), provided positive feedback from the participants and consensus within the
115 research team that the interview structure and flow was coherent. A key alteration was to drop the use
116 of mind maps as an aid in developing stronger reflective keys (Collins & MacNamara, 2012) as the
117 interviews were conducted online and the process clearly interrupted the flow of the interviews.

118 **Data Analysis**

119 Interviews were recorded and transcribed verbatim before conducting a deliberate “reflexive” analysis
120 of the data (Braun et al., 2019) using qualitative analysis software (QSR NVIVO 12) to help
121 extrapolate the various overarching, sub and data themes. A “reflexive” approach (Braun & Clarke,
122 2018) of using both inductive (observation of new insights arising from the data, like self-doubt, as
123 described by the coaches) and deductive (personal experiences based upon 15 years of professional
124 coaching by the lead researcher alongside a thorough awareness of the literature base) analysis
125 approaches was used to allowed for depth and quality of analysis and address the propensity to get
126 tied to either ontological or epistemological approaches (Tracy, 2010). The researcher went through
127 the process of familiarization with the data by reading and re-reading and adopted a thematic analysis
128 approach. Then followed the assignment of codes based upon statements that contextualized each
129 coaches’ experiences with stress, before identifying a range of pertinent lower order themes, which
130 were then grouped into higher order themes. These higher order themes were then built up to three
131 overarching reflective themes (Braun & Clarke, 2018): 1) stressors, 2) appraisals and 3) coping
132 strategies. To improve the trustworthiness of the data analysis three peer debriefing sessions took
133 place with two other researchers. This process helped clarify the context and meaning behind some of

134 the codes created as well focus the scope of the data collected by reducing the number of sub-themes
135 from 16 to nine (Smith & McGannon, 2018).

136 **Results**

137 The results gleaned from the data analysis reflect the thoughts of all 13 participants with a total of 892
138 raw data units being identified. These raw data units were then categorized from 46 lower order
139 themes and then built up into nine sub themes and then into three general overarching themes that
140 emerged from the data: stressors, appraisals of stress and coping mechanisms (Tables 1-3,
141 respectively). The number (*n*) of responses for each data theme is highlighted within each table. It is
142 important to note that the frequency of responses does not imply relative importance but portrays the
143 commonality of feeling amongst coaches. Contributions by female coaches will be highlighted by F
144 and male coaches by M.

145 **Stressors**

146 Table 1 illustrates the main stressors experienced by the Olympic and Paralympic coaches in the build
147 up to the Tokyo Olympic Games and includes: coach athlete relationship, role responsibilities and
148 lack of support in fulfilling their role.

149 **Insert Table 1 near here**

150 *Coach Athlete Relationship*

151 Data highlighted the levels of investment and the potential sources of stress experienced by the
152 coaches in relation to the coach-athlete relationship. The data themes identified were the selection
153 process, team/athlete management, prioritization of the athlete, behaviour management and
154 communication. The examples below outline how coaches *prioritized athletes* so that they could
155 perform at the highest level: “This is not a job, this is a lifestyle and we are choosing it because we
156 love the sport so it is pretty much 24/7 because the athletes can need you at any time and I am there
157 for them”. (Coach 10F)

158 Recognizing the burden that these coaches are taking on, there are examples that highlight
159 some of the negative implications for this desire to support the athletes. For example, Coach 13M
160 revealed, “We can be absolutely at capacity and they do not see you almost like a human. It is just you
161 should be able to do this”. The fact that coaches perceive themselves to be working at capacity and
162 being fully invested in the process can lead to issues where it is felt that the investment is not
163 reciprocated. This was highlighted by Coach 6M who admitted, “Where I feel as though I lose energy
164 is if I feel that I am putting more into this team relationship than they are. So this is often
165 accompanied with bouts of frustration”.

166 *Athlete management* was frequently raised as a source of stress as highlighted by Coach 9F:

167 She (the athlete) has the ability to treat those around her very badly and for me that has a
168 massive increase in stress level. Yeah she can definitely make me feel utterly worthless like I
169 have never felt before in my life.

170 Coach 10F highlighted their concerns around managing a team member during competition:

171 We had an athlete with us who wasn’t on the programme as such and has a bit of a vendetta
172 against me so I had a bit of anxiety about how that relationship was going to be while we
173 were out there.

174 While Coach 3M pointed out the fact that managing the group is more difficult when you have
175 athletes who are striving for Olympic qualification or *selection*, “One big thing during the
176 qualification period is that the other athletes can feel neglected. You still have to make sure that they
177 feel valued and that takes up a lot of time and energy as well”. Furthermore, Coach 3M’s point raised
178 the issue of *athlete management and selection* and the potential for stress that exists within this
179 domain and was supported by Coach 2M: “I deselected a player who had played everything for the
180 last 4 years and had been to an Olympic Games and also it was a player that I coached at my club as
181 well and it was very stressful”.

182 In addition, the coaches highlighted the role of communication. Coach 10F highlighted that discussing
183 their stress triggers with athletes was a good way of developing trust and support in the relationship,

184 “I am much better now at recognizing some of those things where I try to not show that to my athletes
185 as they can pick up on things now”. Whilst Coach 2M offered, “We want to spend a lot of time on
186 individual meetings improving communication channels,” and Coach 4F recognized that
187 *communication*, trust and respect was a two way street, “You have to have a give and take relationship
188 with the players. You have to respect their voice as much as you want them to respect your voice”.
189 Other coaches discussed how their *behaviors* could impact the performance of their athletes. Coach
190 1M revealed, “You can have a big impact on the athletes with the way that you conduct yourself”,
191 with Coach 5M reflecting, “Of course I did not do things to make the players smaller it was just
192 because my angeriness, my passion was so high, but it was really only bringing a negative effect”. This
193 point was echoed by Coach 10F who was acutely aware of how their behaviours influenced their
194 athletes,

195 If I am spending all my time reading their body language and picking up on their emotion
196 then they are doing the same back to me and if I am stressed and they are going to be
197 wondering why I am stressed should they be stressed?

198 ***Role Responsibility***

199 For this section, self-presentation, performance expectations, programme management, multiple roles,
200 processes and Covid-19 were identified as data themes around role responsibilities. Despite the
201 obvious importance of the coach-athlete relationship and the inherent stress that has been
202 demonstrated by the examples above, the interviewed coaches were clear about their *expectations of*
203 *performance*: “I have got the responsibility of trying to achieve the Olympic place and a result at the
204 Olympic Games” (Coach 9F). While preparing their team or athlete for the Olympic Games a number
205 of the coaches interviewed were also holding other positions of responsibility. These ranged from
206 taking on a mentoring role (Coach 9F) to managing business interests (Coach 7M) or from coaching a
207 club (Coach 5M) to working as a coach educator (Coach 4F). Linked to the *multiple roles* that
208 coaches need to fulfil is the *programme management* which was a source of stress to some, “It can be
209 overwhelming; it starts at home, through the planning, bookings, picking the flights, picking the

210 hotels, making sure the entries are in” (Coach 10F). Coach 12M had to manage their program on a
211 tight budget whilst still targeting a medal:

212 It’s not a secret but Olympic (sport) for the home federations is not a top priority, not in the
213 women’s side, it is not a top priority they are looking at essentially how cheap can we do this
214 and still win a medal.

215 Furthermore, Coach 3M felt that while having to balance the multiple responsibilities of the role, a
216 coach also must *present themselves* in a certain way to show they are in control: “You are just second
217 guessing everything all the time and worrying about other results that you can’t really affect. So all
218 the things that you tell the players not to worry about you are worrying about.”

219 Coach 12M questioned why coaches have to present themselves in a certain manner: “I guess it’s the
220 hierarchical point at the moment where people don’t want to show their vulnerability, I would
221 imagine if a coach showed it, would that undermine them in the eyes of their athletes?”

222 In aiding the qualification process there is some calculated planning in order to, “Manipulate
223 the qualifying system to your advantage.” (Coach 3M) but it is not without its stresses:

224 You have got a lot of pressure in trying to pick the right tournaments and when you start
225 going to tournaments that you thought before were quite reasonable and then they turn out to
226 be extremely hard tournaments, that puts a lot of pressure on your own judgement calls and
227 also whether the players are still believing in you. (Coach 3M)

228 The *Covid -19 pandemic* of 2020 meant that long term plans and preparations were thrown
229 into doubt, “We were getting ready to start our competition season, I think a week, two weeks before
230 the sort of the lockdown kicked in for our guys” (Coach 1M) and Coach 13M highlighted the impact
231 on their planning:

232 We live in a sport where everything is planned meticulously, and we pride ourselves on that.
233 Suddenly all of the goal posts and all of the planning is up in the air, you know, that creates a
234 lot of anxiety and I am not immune to that.

235 Participants were also quick to point out the *various processes* within the role that were sources of
236 stress. One of the factors of coaching is the sheer volume of time that is involved in preparing an
237 athlete for the Olympic stage. Coach 9F said “On average I will spend 200 days a year out of the
238 country coaching or training with my athlete”. Coach 10F has to deal with this gruelling schedule:

239 In the 11 days of competition for a Paralympic Games we are competing on ten of them and
240 for an athlete that might only be a half-day at the competition and training venue, but for the
241 staff that is a 16-hour day for ten days plus two weeks in advance training and moving and
242 with being a Para coach it is about lifting and shifting.

243 With training camps and the Games being stressful in terms of time demands, qualification for the
244 Olympic Games is fraught with tension and pressure as Coach 7M describes; “I think most of the
245 people that are involved in the Olympics will tell you that the Olympic qualifying process is the most
246 stressful part of the process.” Coach 3M highlighted the importance of four years of work, “For me I
247 think the qualifying process is more stressful because that is why you are working for four years.”

248 Coach 2M considered the implications of not qualifying:

249 If we do not qualify for the Olympics it is kind of over in terms of the team, the players
250 preparing for the Olympics won’t keep playing for the National Team, I would probably not
251 continue as Head Coach of the National Team. So, the consequences of not winning the
252 double header was present in my mind.

253 ***Lack of Support***

254 Several coaches highlighted the perceived lack of support as a source of stress and the main data
255 themes identified were conflict, issues around travel and competition, the role of the National
256 Governing Body (NGB) and resourcing. NGBs appear to be a source of stress for these coaches as
257 political and financial constraints seem to be at odds with what is important to the coaches and their
258 priorities:

259 For me it's a constant source of stress. I think I would probably position myself as middle
260 management so there are people above me who are really responsible decision makers with
261 different agendas as I see it and to try and influence them enough to get my agenda onto their
262 desk so that we get decisions that I think would help our sport is really difficult. I would
263 probably say that is the biggest source of stress for me. (Coach 6M)

264 Coach 9F agreed, identifying: "One frustration with the team is that all of my discussions with the
265 Olympic Manager seem to be about money and not about medals".

266 Coach 3M provided the following unpleasant experience based upon political interference with the
267 qualifying process:

268 We qualified two players but our own International Olympic Committee (IOC) had different
269 qualifying criteria, they had stricter qualifying criteria, so both the players never got to
270 Beijing even though they had qualified through the World Federation criteria.

271 These examples highlight the potential for *conflict* which is compounded when you work with Team
272 GB and the Home Nations (England, Ireland, Scotland and Wales) don't have a vested interest in the
273 success of the program:

274 The journey has been a fraught one for the programme because if I am being candid and
275 honest about this one it's very difficult now for any of the Home Nations. None of the Home
276 Nations gets any funding from UK Sport because they are not GB Programs. (Coach 11M)

277 Pertinently, some coaches do not feel that they receive the same level of *resource* as the athletes: "All
278 the provision (mental health) is around athlete and there is a whole athlete support team and we are
279 almost, not catered for within that" (Coach 10F). Coach 10F then raised the question of how and when
280 do coaches know how to call upon this support: "The difference is when the coach is suffering, a) Are
281 they going to go and ask for help? b) Where to go to ask for help? And c) Do they actually realize that
282 there is a need for help?"

283 The reality of being in a *competitive situation* and facing stressful situations without the
284 proper support mechanisms was highlighted by two coaches: Coach 12M revealed; “You plan for
285 everything down to the minute but you need to be ready for those plans just to get blown up and
286 something to go wrong and you deal with it”. In addition, Coach 10F acknowledged:

287 I did not cope well in Holland, that’s why I came home. I think one of the reasons that I didn’t
288 cope very well is that I thought that I felt that I didn’t have access to my normal coping
289 mechanism.

290 **Appraisal of Stress**

291 Table 2 illustrates how Olympic and Paralympic coaches appraised stressors as either positive or
292 negative in the build up to the Tokyo Olympic and Paralympic Games.

293 **Insert Table 2 around here**

294 *Positive Stress*

295 When discussing responses to stress it was interesting to note that the coaches had highlighted
296 numerous examples of their positive experience with stress, which included the identification of
297 focus, decision making, enjoyment, motivation and acceptance as pertinent data themes. Firstly, there
298 were a number of examples of coaches citing stress as a catalyst for *improved focus*, as highlighted by
299 Coach 4F: “I believe that stress can make you make mistakes but in my case it just gives me much
300 more focus”. Coach 7M added more context around the focus required to compete at the top level:

301 My experiences at the international level and trying to find these real small margins because
302 everybody is so good. So what are the details of this? I am really hyper focused on this and I
303 spend all summer trying to beat Poland, Russia, France and Brazil, all these great teams.

304 On top of the focus others talked about the improved quality of their *decision making* under
305 stressful conditions. For example, Coach 6M said, “These decisions, this quickness of taking
306 decisions is not something that I decide before. I just believe it is the monomaniacal focus on the
307 moment”. Coach 2M added to this by suggesting, “The greater the stress the more concentrated I am

308 on the decisions I am taking. It helps me focus on the things that I do control". Apart from the focus
309 and improved decision making it was apparent that a number of coaches took a great deal of
310 enjoyment from stressful situations, "I love the test and the difficulty and the struggle, you know!"
311 (Coach 11M). Coach 12M went on to highlight the benefits of harnessing the motivational power of
312 stress, "You then start to realize that stress used in the right way can be a big advantage". Coaches 7M
313 and 12M offered the following analogies for using stress as a *motivational* tool: "You are only getting
314 stronger when you break stuff down you know?" and "to grow there has to be struggle." Significantly,
315 there were numerous examples where the coaches *accepted the presence of stress* within their job and
316 have embraced it. Coach 6M summarized this, "The stress is there so I do not feel like this is part of
317 the problem. I want the stress, you know? So I do not fight against it!"

318 This notion of making the best of things was pervasive across the coaches interviewed and COVID-19
319 provides good insight into how these coaches take the positives out of potentially stressful situations:
320 "This COVID thing is not affecting me, beside the workload, the stress of COVID no way man I am
321 dominating this" (Coach 7M). Another coach pointed out the fact that in what should have been an
322 extremely busy time for them is now much more relaxed and *enjoyable*:

323 With this Corona thing I have actually been more relaxed that I have been in 15 years at this
324 point of the year. So for me I would not say it is a holiday but it is a time to work without
325 pressure. (Coach 6M)

326 As well as the points raised around preparation a few coaches were eager to point out the positive
327 impact COVID-19 has had on their planning: "I have got a higher workload because of it yes, we need
328 to work on the strategy but I am definitely going to have plan ABC so I have got that possibility or
329 opportunity of moving, whatever direction" (Coach 13M).

330 *Negative Stress*

331 Despite the incidents of positive stress the impact of negative stress presented itself in a number of
332 ways and more frequently. Key data themes highlighted were physiological, anxiety, lack of control,
333 job security, conflict, work home interference (WHI) and self-doubt. Firstly, coaches discussed some

334 of the *physiological impacts* of stress with Coach 1M providing this honest assessment of their
335 experience: “It made me really poorly. I had a mini stroke and ended up seeing a councillor because I
336 was having lots of panic attacks due to stress”. Less serious examples included, Coach 7M identifying
337 a lack of sleep, “ I just would not sleep, I would have disrupted sleep and I would wake up in the
338 middle of the night and be wide awake”, and Coach 6M revealing “What I feel in my body when I’m
339 nervous before a game, the physical aspects of where I can feel it in my throat and in my stomach, it’s
340 been the same always.” Whilst Coach 2M said, “I do get migraines a bit which I think could be stress
341 related.” Along with the talk of nerves some coaches were affected by anxiety, “I was falling apart
342 because you were so anxious about it all”. (Coach 11M)

343 Furthermore, another component of negative stress was a *lack of control* in certain situations.
344 Coach 8F suggested, “When I have got too much on the plate and I am always just chasing my tail
345 and never really feel that I get things done.” This point was supported by Coach 13M, “I get stressed
346 out if I cannot move forward. I’m kind of action orientated so if I do not feel that we are moving
347 towards a goal that then starts to stress me”.

348 *Job security* was another source of negative stress identified. Coach 10F provided this insight
349 around a lack of clarity on performance expectations, “I think that is one of the challenges what is a
350 coach judged on? How am I rated? How am I assessed? If I have got good athletes and then they don’t
351 perform does that reflect on me?” Coach 2M provided a comparative analogy:

352 My daughter said to me when I was younger, we came last in a tournament, she said are you
353 going to be sacked? Because with a football manager that is what the TV or my father in law,
354 who is a Barca fan, say when the coach is no good he has to be sacked.

355 Coach 8F had this to offer, “There is a lot of uncertainty from that point of view, I need to have a plan
356 ABC just in case, let’s say from 1st of April I do not have a job.” Whilst Coach 10F commented on
357 the power that the athlete has in determining the coaches future:

358 It is hard because the athletes have a huge amount of say in the hiring and firing of coaches.
359 Rightly or wrongly being fired by an athlete can have massive. It's not just the end of that
360 relationship it can have huge knock on effects of where you can go and work in the future.

361 With the sort of dynamic being described it was not surprising to see examples of *conflict* being
362 mentioned by the coaches interviewed, as highlighted by Coach 7M, "I used to clash a lot with a
363 member of staff". However sometimes this led to a change of vision and leadership with negative
364 consequences: "Obviously, I had a big setback as well, we won the World Champs with this young
365 guy and the next thing you have got a new head coach and you know, they take away this athlete from
366 you." (Coach 9F)

367 Away from coaching the impact of *WHI* was a frequent source of negative stress, "It is not
368 perfect, we still go through times where it has been hard at training then we come home and it is not
369 happy families" (Coach 6M). This is exacerbated when the coach tries to compartmentalize their work
370 and their home life:

371 One criticism from my wife is I do not really talk about my work that much to her because
372 that is me very much just kind of boxing it off and putting it away. When I come home it is
373 like I do not talk about it because then if I start talking about it I will probably start getting a
374 bit stressed by it and anxious and annoyed and I do not want to. (Coach 12M)

375 One of the realities that faced a lot of the coaches interviewed was the amount of time that
376 they were expected to be away from home: "I say to my husband do not expect to see me much this
377 year" (Coach 10F). Whilst Coach 9F is away from home 200 days a year and Coach 11M over 120
378 days.

379 The final aspect pertaining to the responses to stress was the incidences of *self-doubt*. Coach 8F gave
380 this example:

381 Bad stress is when it builds up and it mounts and it ends up triggering a negative emotional
382 response and unhappiness. When it is bad it exhibits in lack of confidence and self-doubt and
383 that kind of thing, that's bad stress when those things start to happen.

384 Other coaches weighed in with the following examples of self-doubt: “It sounds ridiculous, but I
385 compare myself, am I coaching as good as the other coaches are coaching? Are my athletes getting
386 the right level of support?” (Coach 12M). Whilst Coach 11 said, “I have had far too much self-doubt
387 and not backed myself!” and Coach 4F echoed these thoughts with, “I worry about not being good
388 enough to be able to take them to where they need to be”.

389 **Coping Mechanisms**

390 Table 3 identifies the coping mechanisms utilized by the Olympic and Paralympic coaches to help
391 mitigate the impact of stress including: self-determination, education around stress, community of
392 practice and recovery strategies.

393 **Insert table 3 near here**

394 *Self-Determination*

395 The main themes around self-determination were the learning process, resilience, philosophy
396 development, education, reflective practice and rituals or superstitions. Having ownership of the
397 *learning process* and the desire to continually develop through *formal and informal educational*
398 pathways, even if it meant being out of their comfort zone was seen as being important:

399 I found myself in a Continuous Professional Development (CPD) group really, where you
400 were forced to coach your peers, and at that point I perceived my peers as being way above
401 me and I felt so uncomfortable. But I just got really comfortable with being uncomfortable
402 and just kind of, almost, like diving in and going right! But the learning I got from that was
403 absolutely massive and as uncomfortable as it felt that was really important. (Coach 13M)

404 Dealing with setbacks was apparent from speaking to some coaches. This is linked to the earlier
405 points around *resilience* and acceptance that stress is part of the job. Coach 6M provided an example
406 of how they use setbacks to motivate and develop themselves:

407 I do not know if there has been a coach that hasn't experienced failure, so I would say
408 probably reflect on your failures because I think they fuel the fire and are the best times that
409 you can really find your blind spots.

410 Coach 13M built upon Coach 6M's comment by highlighting how reflection and a clear *philosophy*
411 can aid development:

412 Which again links into your coaching philosophy around individualised development, not just
413 technically but as a holistic person. But then also understanding me better within all of that as
414 well, has definitely helped strength and weaknesses and all the rest of it.

415 In terms of coping strategies there were a few coaches that described some *superstitions or rituals*
416 they have before competition, in order to reduce the feeling of stress:

417 Each one of us have our rituals, for example, before big, big matches, I am very silent, I like
418 to do some physical activity, I like to wake up early, I like to try and rest between lunch and
419 the match as much as I can. I like to stay alone, even when I enter the gym. I hate the chatting
420 before a big match because it brings nothing always. It is just increasing the fear. So I try and
421 be pretty fixed in my rituals before every match, that is the most important. (Coach 5M)

422 A major factor in the coping strategies of these coaches is their *reflective practice*: "The big
423 loss gives the biggest lesson you know? So the mistakes that I did before, maybe because I have
424 overreacted with a player because of over stress" (Coach 7M). Coach 6M talked more about the
425 processes involved:

426 I would not say a drain on energy, but it is really energy consuming. What I found myself
427 doing is going home and really trying to replay and analyse what happened. What I did? How
428 they responded? What I could have done differently? What could I do? Where are we? How
429 can we move us back on track etc.?

430 The unpredictability and uncontrollable nature of sport means that the coaches have to be
431 *resilient* and able to deal with setbacks. The examples below demonstrate the various ways in which
432 the coaches are able to rationalize setbacks and focus on the process rather than the outcome:

433 To be honest it does not matter where we finished, I was always determined to come back
434 stronger next year so that is my mantra going forward. It does not matter how good the results
435 are, next year is going to be better. (Coach 8F)

436 I definitely think that knowing you have prepared the best you can gives you more confidence
437 that the outcome will be as good as it can be and if you don't get the outcome the first thing
438 you do is you look back and was the preparation right. I guess getting the preparation and
439 working hard on the preparation will reduce the anxieties. (Coach 11M)

440 ***Education around Stress***

441 The discussions with the coaches in this study highlighted a lack of information around stress,
442 ideas for development, suitability of educational programmes and experience as key data themes. The
443 *lack of information* around the impact of stress on performance was highlighted by Coach 4F:

444 It is a really important element of coaching. When I think about the content of coaching
445 courses there is very little that talks about managing stress. We are not talking about coach
446 burnout here; we are not talking about when you get past the point of managing it. But are
447 you actually aware of what you are going to do for you to make sure that you are at your best?

448 This was echoed by Coach 7M who when asked about the need for more information and support to
449 deal with stress, offered the following:

450 I was talking with another coach and we were talking about some of these topics and he said,
451 "you know at some point here somebody is going to have to wise up and realize that these
452 resources need to be available to the coach and the stresses that we are under".

453 Coach 5M acknowledged how coach education seems to focus on the technical and tactical elements:
454 "In every coaches clinic we talk too much about technique, we talk too much about tactics that are the

455 easiest things. But being motivated in the tough moments this is what we should be taught more.” The
456 perceived *lack of suitability* for purpose was raised by other coaches including Coach 6M:

457 I think this is really required all the way through coaching. If you are coaching a junior league
458 team and you’re passionate about it, that is going to take up a lot of energy and I think it is
459 going to potentially be a stressful thing for you and the people around you. So a discussion
460 around stress, burnout, coping is essential.

461 In the UK coaches were able to access a range of *development programmes* including “Para Coach to
462 Rio” and “the Energy Project” (Coach 10F), the UK Sport “Elite programme” (Coach 11M & 13M),
463 the “Aspire” programme (Coach 8F) and “the athlete to coach course” (Coach 10F). Whereas the
464 picture for coaches internationally relied more on *experience*, “A lot of my best coaching advice has
465 been unofficial rather than official” (Coach 3M), with Coach 7M offering, “It is probably not really
466 something I have tapped into to be honest”. Coach 6M offered a potential reason for this, “I have not
467 been involved in coach CPD for a long time. But I think an overhaul of it to really address this sort of
468 the theory, practice disjoint”. Coach 13M elucidated upon the impact the CPD opportunities had on
469 their relationship with stress:

470 Being able to see the world from other people’s perceptions... the more that you can do that
471 to put things into perspective, to get that shared understanding that other people have the
472 same challenges, see you have the same stresses. It is normal.

473 ***Community of Practice***

474 The coaches in this study appeared to place how importance on the community of practice that
475 surrounds them, with 11M of the 13M coaches citing the involvement from *professional practitioners*
476 like psychologists and coach developers in their support network. Coach 10F summarizes this
477 dynamic, “We have got a really good relationship and I trust him and I can open up to him so the
478 relationship is already there I think”. The role of family and friends was also viewed as very
479 important, “I can see how valuable my friends and family are that you are keeping those people
480 central” (Coach 1M).

481 The role of *mentors*, both informal and formal, were also core to the coaches development as
482 well as a confidant in times of stress. Coach 13M highlighted that “The use of mentors through your
483 life as a coach to help you sense make, conceptualize and then to put that into your context is key”.
484 This is exemplified by Coach 10F: “The mentor, through the UK Sport programme, he is pretty much
485 great, he opened my eyes and I started to be more aware of things which at the time of going through
486 it I wasn’t aware”.

487 The nuances of the *support network* were varied and very context specific as Coach 13M
488 demonstrates, “Because I have got two hats, I have got my leadership hat and I have got my coach hat
489 so I am working with two different people. So I am working with a different person on my coaching
490 and different person with my leadership.” Coach 6M spoke about the importance of having someone
491 objectively monitoring your behaviours and stress levels:

492 You need to find a way to monitor stress. Maybe have someone around you that will tell you
493 if they think you are stressed or short of energy or run down. You need to learn what your
494 reactions to stress are and be mindful of them.

495 As a final point Coach 1M provides a good example of how the support of *friends and family*
496 are crucial to personal and role fulfilment, “I guess I can see how valuable my friends and family are
497 in helping me pursue my own goals, whilst at the same time giving me the break away from the
498 pressure of my work and keeping me grounded.”

499 ***Recovery***

500 Recognizing the stress of their role many of the coaches in this study offered insight into their
501 recovery strategies, as highlighted by the data themes of exercise, social activities, family time,
502 medical professionals or adopting tools to aid mental health. Primarily amongst these was the use of
503 *exercise*, which ranged from, “I like walking in the Scottish hills” (Coach 8F) to “I go cycling a lot.
504 That is my main de-stressor actually” (Coach 10F). Similarly, Coach 13M gave some insight as to
505 how they use exercise to process their thoughts:

506 I have always used exercise. So it was a mixture of gym and cardio type stuff. Where I just go
507 for a run and for the first 30-40 minutes I would be making sense, verbalizing, self-talking,
508 conceptualizing, working through the issue and by 30-40 minutes I would almost resolved it
509 in my head and was like ah right I am in a good place.

510 In terms of recovery the coaches provided a broad range of activities including Yoga, home
511 renovations, music and reading. However, some coaches made time for *social time* to aid their
512 recovery ranging from going to the pub (Coaches 1M, 3M & 9F), going to the cinema (Coach 1M &
513 2M) and going to watch football matches (Coaches 3M & 4F). Many of the coaches highlighted the
514 importance of *family time* as the main source of grounding or taking their mind off the job, “I always,
515 when I am here, spend a lot of time with them because I understand that there are periods of time
516 when I am away from home” (Coach 12M). Coach 6M offered the following: “I have got a son, he
517 makes it quite easy to turn off because a two year old does not understand I have just got to send this
518 email without him wanting to do stuff”.

519 In addressing the more serious implications of stress a couple of coaches turned to *medical*
520 *professionals* and psychologists to aid their recovery, “ I had to have some time off and lots of help
521 from my GP and that sort of thing. That sort of then helped me get on top of that because I had clearly
522 been doing too much” (Coach 1M). Coach 10F provided another example of the use of medical
523 support: “I suffered from post-natal depression and when that kind of depression and anxiety
524 resurfaced so then I had to go back to the GP, medication and Cognitive Behavioural Therapy (CBT)
525 to manage any irrational thoughts”.

526 Along with the likes of CBT the coaches interviewed have developed a number of *tools that they use*
527 *to mitigate the impact of stress* in their role. Coach 1 highlighted the importance of a good work life
528 balance, “Work life balance is out and out number one!” This outlook was supported by Coach 12M
529 who offered this strategy, “I have started turning my phone off after 6 so that I am not constantly
530 checking WhatsApp or emails.” Whilst Coach 13M offered, “when I am home I make sure that we
531 plan activities with the kids to make up for the times I am not around.” Another tool discussed by

532 several coaches was developing a clear philosophy and sense of perspective, as highlighted by Coach
533 6M:

534 Being really clear on what your purpose is and what you want to achieve out of it because that
535 then kind of gives you that's what I am heading towards so that is where my energy goes and
536 you are not getting pulled in different directions.

537 **Discussion**

538 The aim of this study was to explore how Olympic and Paralympic coaches appraise stress as they
539 prepared their teams or athletes for the 2020 Olympic and Paralympic Games in Tokyo. Importantly,
540 our findings highlight that coaches are required to deal with a broad range of psychological, physical
541 and emotional challenges (Mallett, 2011). Often these challenges seem to exist in potentially
542 contradictory paradigms, for example, the athletes' being the primary source of stress but at the same
543 time stating that the athletes needs are more important than the needs of the coach (Coaches
544 1M,8F,9F). However, our findings provide novel insights in four key areas by 1) identifying how
545 coaches appraise stress, 2) examining how the appraisals of stress are fuelled by factors like self-
546 doubt, perfectionism and imposter syndrome, 3) identifying coping strategies to negate the impact of
547 stress and 4) the role coach education plays in preparing coaches to deal with the stress of the role.

548 A number of the coaches interviewed in the current study framed stress as a positive influence in
549 terms of focusing attention and speeding up the decision-making process (Coach 3M,5M,7M,13M).
550 Consequently, the acknowledgement that stress is part of the job and embracing the somatic and
551 psychological effects (Coach 5M), reframes the idea that stress is largely viewed as negative in
552 coaching (Norris et al., 2017). This could be construed as a 'coping' mechanism highlighting that
553 incidences of stress having a positive impact on performance (Didymus, 2016). This positive view of
554 stress may go a long way to explaining why the elite coaches in the current study exhibited high levels
555 of motivation, self-determination and low levels of burnout (Bentzen et al., 2017). Despite most of the
556 coaches interviewed in the current study raising a number of negative stressors associated with their

557 job (e.g., time away from home, job security, anxiety and self-doubt), they remained highly motivated
558 and were looking forward to the opportunity to be part of the Olympics and Paralympics.

559 With this in mind, a potential mechanism explaining the high levels of motivation of elite Olympic
560 and Paralympic coaches in the current study was the coach-athlete relationship. Many coaches
561 prioritized the athlete over their own needs (e.g. making themselves available 24/7, Coaches
562 1M,8F,10F,13M). Despite this, 76 different raw data units pertaining to largely negative examples of
563 the coach-athlete relationship were identified. These being perceived lack of control, poor
564 communication, self-presentation, vulnerability, loyalty and entrapment which aligns with previous
565 work by Olusoga and Kenttä (2017).

566 Lara-Bercial and Mallett (2016) highlight that elite coaches seem to be predisposed to living on the
567 'knife-edge' of belief in their own ability whilst simultaneously doubting if they are good enough to
568 ever win again. Indeed, several of the coaches interviewed for this study seemed to present symptoms
569 of self-doubt (Coaches 1M,3M,6M,9F,10F), insecurity (Coaches 1M,8F,9F,10F) and imposter
570 syndrome (IS) (Coaches 3M,4F,9F,12M). Symptoms of IS can manifest as anxiety, self-deprecation,
571 or an irrational fear of failure in light of previous success and perfectionism (Bernard et al., 2002).
572 This will see coaches adopt a lone fighter strategy (Olusoga & Kenttä, 2017) which can lead to
573 impatience, inability to delegate, inability to recognize performance constraints and identifying
574 success or failure with winning or losing competitive situations (Altfeld et al., 2018). Similarly,
575 perfectionism is moderated by various factors such as anxiety, goal orientation, fear of failure, self-
576 esteem, performance success, self-presentational concerns, and coping strategies (Flett & Hewitt,
577 2005; Schaffran et al., 2016). In a profession like coaching, where there are high consequences for
578 winning and losing, or a risk of losing one's job, it is not surprising that coaches exhibit some of these
579 traits. Interestingly, this study suggests these coaches have developed a number of strategies (e.g.
580 awareness of how they communicate verbally and non-verbally to athletes (Coaches 5M and 10F). Or
581 depth of planning to maintain control of their situation (Coaches 12M and 13M) linked to self-
582 presentation that hide these insecurities. This is aligned to Flett and Hewitt's (2005) work on
583 perfectionism and involves striving to create a public image of flawlessness, either by highlighting

584 one's success (i.e., perfectionistic self-promotion) or by minimizing one's mistakes (i.e., non-display
585 or nondisclosure of imperfections). These characteristics are often underpinned by setting exceedingly
586 high, perhaps unrealistic, standards for performance, accompanied by tendencies for overly critical
587 self-evaluations (Stoeber, 2015). Whilst causation does not mean correlation, in unearthing this
588 phenomenon in a number of coaches it would therefore be worth future investigation as to how stress
589 and perfectionism interact in terms of coaching performance.

590 The counterpoint to the negative appraisals of stress came from coaches who demonstrated high levels
591 of self-determination and behaviours aligned with Bentzen et al. (2017) who posited that coaches with
592 higher levels of motivation and self-determination were less likely to suffer from stress. Self-
593 determination within the workplace links to the job-demand-control-model developed by Theorell et
594 al. (1990), which describes working conditions where excessively high demands, in combination with
595 low control and weak support, create stress responses and tension that over time might lead to
596 psychological or physical health problems.

597 A key aim of this exploratory study was to gain insights into how well elite coaches have been able to
598 develop strategies utilized to mitigate the stress of their role. It is apparent from the data that many of
599 the coaches interviewed struggled to disengage from the coaching process. Some coaches also
600 highlighted the fact that even during family time they continued to think about coaching. Furthermore,
601 sleep patterns being disturbed was a frequent occurrence and in at least two examples coaches
602 developed more severe conditions directly linked to the stress of their job. Schaffran et al. (2016) go
603 on to suggest that intervention programmes which are utilized from workplace research do not exist
604 with regard to coaches, yet there are a number of examples that could transfer into the coaching realm.
605 For example, CBT, psychotherapy, counselling, adaptive skill training, communication skills training,
606 social support, relaxation exercises or recreational music making (Awa et al., 2010; Potts et al., 2021).

607 Whilst these potential mental recovery strategies appear to have positive effects, the coaches in this
608 study supplemented these approaches in a number of ways. The use of physical activity, a sense of
609 perspective and positive outlook and support networks were all prevalent in this study with physical
610 activity being the number one stress release mechanism cited by the coaches interviewed. With

611 consideration of the job-demand-control-model (Theorell et al., 1990), it would also be worth
612 considering a longer time frame of rest (e.g., rest days, off-season periods), or “switching off”. An
613 effective approach to this could incorporate a change of focus onto other domains (e.g., family, social
614 life) outside of their own sporting context (Loch et al., 2020). As this study was conducted in the
615 midst of the pandemic, coaches were forced into having a break from their preparations for the
616 Olympics and Paralympic, and, as a result addressed some of the potential work-life balance issues
617 that would exist in an Olympic and Paralympic year. The notion of changing domains is interesting as
618 WHI is a process in which conflict could arise as a result of roles that affect time based in one domain
619 (e.g., work) and that are incompatible with fulfilling roles in the other domain (e.g., family: Bakker et
620 al., 2004). Clearly, this definition transfers into the realm of coaching where coaches are often
621 expected to put in long hours or be on the road for extended periods of time. Furthermore, Lara-
622 Bercial and Mallett (2016) highlighted how much coaches paid attention to, or at least attempted to,
623 maintain a relative work-life balance and ensured that their physical and mental health, alongside their
624 personal relationships were maintained. This study highlighted the importance of a positive work life
625 balance particularly in the midst of the pandemic where the boundaries between domains were further
626 blurred due to lockdowns. So far, this section has focussed upon individual ownership and
627 responsibility of mitigating the impact of stress on performance and welfare. However, there has to be
628 some examination of the role that NGBs play in creating an environment where coaches often report
629 that perceived lack of control over things like resources, equipment, funding, how programmes are
630 run, time away from home and their future career prospects cause them considerable stress (Kilo &
631 Hassmén, 2016). When you then consider the “politicization of sport”, streamlining of funding policy
632 and the “playing to win” mentality that exists within sports policy (Grix & Carmichael, 2012), all of
633 which exist outside the realm of control of the coach, NGBs need to do much more to support coaches
634 by investing in coaches wellbeing (Fletcher & Scott, 2010). Historically it has been assumed that
635 coaches have all the answers and are therefore left without the same resources that athletes are
636 afforded (Rynne, 2017). This point becomes more important when you consider coaches appraisals of
637 organizational stressors are going to have implications on their well-being, coping strategies and
638 performance (Woodman & Hardy, 2001).

639 By drawing on some of the insights gained from the current study, it is worth discussing the
640 implications for coach education moving forward. The professional standard frameworks (ICCE &
641 CIMSPA) have subsequently raised important questions around the effectiveness of how coaches are
642 engaged and developed at all levels. Indeed, the demise of the UK Coaching Certificate (UKCC)
643 began when *The Coaching Plan for England...?* (2018) highlighted a number of recommendations
644 with regard to the UKCC, which is deemed to no longer reflect the core needs of coaching. One of the
645 significant gaps in coach education, not addressed by *The Coaching Plan for England...?* (2018), is
646 that of mental health and the impact of stress on the performance of coaches. This point is echoed by a
647 number of coaches in this study who stated they had received no support or information around stress
648 and mental health through formal educational or CPD channels.

649 Whilst the coaches in this study developed their own coping strategies based upon their context,
650 experiences and community of practice, where there is a shared interest, passion, commitment and
651 competency base (Stewart, 2012), many coaches may not have the skills to recognize stress and how
652 it affects their behavior. There is now a move to develop coaches with behaviors, values and attitudes,
653 the so called 'soft' coaching skills like empathy (Coaches 3M, 9F), inclusion (Coach 8F), mental
654 health and wellbeing (Coach 7M), within their own context, as a priority (Sport England, 2016). With
655 these points in mind, coupled with the lack of clarity in explaining how effective learning happens for
656 practitioners from a variety of contexts (North, 2010; Stodter & Cushion, 2016), a large proportion of
657 coaches gain their knowledge and practice skillsets, not through coach education, but from personal
658 interpretations of previous experiences (Cushion et al., 2003). A move to a context specific, values
659 based approach in coach education may help address the lack of clarity on how coach education and
660 CPD should be structured and supported (Griffiths et al., 2018). At the same time this approach could
661 help address the levels of stress that coaches experience in the elite arena (Didymus, 2016) by
662 affording them the necessary training and resources to deal with stress at an elite level.

663 A potentially critical point raised by the coaches in this study was the impact of mentors and coach
664 developers in developing the community of practice and being a sounding board for dealing with the
665 various stressors encountered on a day to day basis. The relationship with a mentor, coupled with the

666 reliance on their coach developer as a support mechanism, as well as part of the coach community of
667 practice, has had a big influence on coaching behavior and performance (North et al., 2020). Many
668 performance programmes globally have utilized coach developers. They play an important supporting
669 role for the coaches by facilitating the appropriate mix between informal, non-formal and formal
670 learning as well as providing one-to-one support, mentoring and a ‘buffer’ against the isolation that
671 many coaches feel (North, 2010). Many coaches from North’s (2010) study experienced isolation and
672 have negative experiences of formal coach educational settings. This could be in terms of the
673 consistency and quality of delivery and a perceived lack of support from coach educators
674 (Stoszkowski & Collins, 2012) meaning that NGBs are not utilizing mentoring schemes which could
675 be a potentially positive tool in supporting their elite coaches. Dohme et al. (2019) highlight the
676 importance of the coach developer in engaging the coach with long term learning by being available,
677 approachable, and supportive, and creating a sense of belonging. Aligned to this, this study provided
678 some insight into the dynamic of mentoring and the use of communities of practice in mitigating the
679 impact of stress. The formal mentors or coach developers, accessed by the coaches in this study,
680 offered advice or guidance about the impact of stress on coaching welfare and performance. Whilst
681 there were also informal structures presented like “buddy systems” and “critical friends” who were
682 empowered/trusted to be candid about how stress was manifesting itself and impacting on coaching
683 behaviours. Based upon the discussions with the coaches in this study and the existing literature
684 around the role of the coach developer, it seems to be a trend that coach developers, or indeed
685 communities of practice, are having to fill the gap between the lack of suitable, context specific, coach
686 education and the support network that exists for elite level coaches (Dohme et al., 2019; North et al.,
687 2020; Stodter & Cushion, 2019). These support mechanisms become all the more important when you
688 are considering the recognition of stress within the elite sphere and the ability to develop the skills to
689 mitigate the impact of stress in a context specific rather than generic manner.

690 Looking at the specific context of supporting and developing female elite coaches Norman (2012)
691 calls for more equity in order to elevate female coaches and leaders. This point becomes especially
692 important when you consider research by Kenttä et al. (2020), where they state women have to adopt

693 male stereotypes in order to survive in the performance field. Additionally, Kraft et al. (2020) have
694 proposed women-only training programs in order to tackle barriers for women coaches. These include
695 the lack of organizational support and access to training and development opportunities, and the lack
696 of female role models for networking and mentoring support. However, despite only providing a
697 small sample size, the female coaches interviewed in this study all reported good access to support via
698 coach developers and UK Sport funded CPD and development opportunities. It is also encouraging to
699 see coaches (e.g., Coach 9F in the current study), recognize the lack of female coaches and offer to
700 provide mentorship and act as a positive role model to female athletes and potential coaches in their
701 charge. This is aligned to Norman's (2012) assertion that a first step in the empowerment of women is
702 to enable them to become national coaches making it clear that coaching is a valued, worthwhile and
703 accessible profession for women thus increasing the visibility of existing high-performance female
704 coaches as role models. This sort of approach might go a long way to mitigating the increased
705 isolation that some female coaches (e.g., Coach 10F in the current study) feel, in spite of having
706 access to support mechanisms. This may be due to their predisposition to prioritize relationships,
707 increased sense of guilt around balancing career and homelife, emotional exhaustion and anxiety
708 (Potts et al., 2021). Certainly one of the female coaches that took part in this study demonstrated high
709 levels of guilt around leaving her family at home for extended periods of time. Others discussed
710 heightened anxiety around the potential negative interactions with their athletes. The task is then for
711 coach education (both formal and informal) to prepare coaches for this eventuality rather than trying
712 to deal with the fallout retrospectively.

713 **Limitations and future research**

714 In part, as a consequence of the limitations (i.e., context, time specificity leading to a delayed games)
715 there are two methodological limitations worth considering within this study. Firstly, the coaches
716 interviewed provided one-off, standalone accounts that could only provide a snap shot into their
717 world. This could lead to a lack of contextual considerations, such as socio-economic statuses of the
718 sports and the expectations on them to deliver medals to maintain funding (Bostock & Breese, 2021),
719 which could influence the outcome of our findings. Consequently, future research could consider

720 adopting a critical realist lens, that would allow for the consideration of social structures, biases (both
721 conscious and unconscious) and institutional norms (Byers et al., 2021). The use of critical realism
722 could lead to a better understanding of the role that NGBs play in creating a culture where coaches are
723 expected to operate and thrive in an environment which is unsustainable in terms of demands on time,
724 energy and resources. Another limitation is related to the female participants as the findings are based
725 upon a small cohort and do not address whether or not stress and lack of education and support have a
726 part to play in this dearth of female coaches at an elite level (Norman et al., 2018). Finally, in terms of
727 future research, the issues raised around IS were not explicit in the aims and objectives of this study
728 and such the link between perfectionism and stress within coaches needs further consideration.

729 **Conclusions**

730 In conclusion the current study provides novel and original insights into how stress manifests in
731 Olympic and Paralympic coaches and discusses the various coping mechanisms commonly used to
732 mitigate the impact of stress on their performance. Specifically, we have identified that while elite
733 coaches face a broad range of psychological, physical and emotional challenges their appraisals are
734 incredibly individualized and context specific. As such, the way elite coaches frame stress can be a
735 positive mechanism for improving focus, decision making and could have an impact on the way we
736 associate stress as a negative and something that needs to be reduced at all times. NGBs and coach
737 educators need to be cognisant of the context specific stress that elite coaches are under and provide
738 them with the same resources and support that is available to the athletes operating in this space.

739 The second novel finding was around the issue of IS, perfectionism and self-doubt all of which help
740 fuel negative appraisals of stress. As such it is vital that coaches develop, and are supported to
741 develop, higher levels of self-determinism in order to counteract the high demands of the role.
742 Ultimately this could also help address a significant source of strain which was the potential for the
743 breakdown of the coach-athlete relationship. There has been very limited research done in relation to
744 IS and stress appraisals and would therefore merit further investigation.

745 Thirdly, the coaches in this study demonstrated that a strong exercise regimen in conjunction with
746 high levels of self-determination, motivation and an ability to manage a good work-life balance were
747 all identified as important in terms of building strong coping mechanisms for the demands of coaching
748 at an Olympic and Paralympic level. It would therefore be recommended that a coherent educational
749 strategy is developed that not only reflects the needs and context of coaches at all levels, but also
750 engages funding agencies and NGBs, to understand stress better and appraise the impact of positive
751 and negative stress on performance and long term welfare.

752 Building upon effective coping strategies comes the importance of effective communities of practice
753 where mentors and coach developers help to support elite coaches. Within the realm of Olympic and
754 Paralympic coaching both coach developers and mentors appear to have a significant importance in
755 filling the gap from coach education. This point could be magnified when it comes to female coaches.
756 Whilst the female coaches in this study appeared to be well supported in terms of access to mentors,
757 CPD and coach developers; generally speaking the existing research suggests there is a gap between
758 formal coach education dealing with complex issues around mental health, dealing with stress and the
759 increased sense of responsibility and isolation that female coaches may experience (e.g., Coach 10F)
760 (Norman et al., 2018; Norris et al., 2020). As such, there is a need to explore how coach education can
761 be evolved to address these gaps in the knowledge base around stress by tackling it proactively rather
762 than retrospectively and including some of the tools identified in this paper.

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