


**Please cite the Published Version**

Bailey, Ryan and Turner, Martin  (2023) The Effects of a Brief Online Rational-Emotive-Behavioral-Therapy Program on Coach Irrational Beliefs and Well-Being. The Sport Psychologist. ISSN 0888-4781

**DOI:** <https://doi.org/10.1123/tsp.2023-0009>

**Publisher:** Human Kinetics

**Version:** Accepted Version

**Downloaded from:** <https://e-space.mmu.ac.uk/632455/>

**Usage rights:**  In Copyright

**Additional Information:** Accepted author manuscript version reprinted, by permission, from The Sport Psychologist, 2023, <https://doi.org/10.1123/tsp.2023-0009>. © Human Kinetics, Inc.

**Enquiries:**

If you have questions about this document, contact [openresearch@mmu.ac.uk](mailto:openresearch@mmu.ac.uk). Please include the URL of the record in e-space. If you believe that your, or a third party's rights have been compromised through this document please see our Take Down policy (available from <https://www.mmu.ac.uk/library/using-the-library/policies-and-guidelines>)

**The Effects of a Brief Online Rational Emotive Behavioural Therapy (REBT) on Coach  
Wellbeing and Coaching Behaviour**

Ryan G. Bailey and Martin J. Turner

Manchester Metropolitan University, Manchester, UK

## Abstract

Research into the psychology of coaching has been somewhat neglected in comparison to research on the psychological development of athletes. The purpose of the present study was to examine the effects of a brief online Rational Emotive Behavioural Therapy (REBT) programme on coach irrational beliefs and well-being. Coaching staff from an elite international canoeing team ( $n = 4$ ) took part in a three 30–40-minute session REBT programme. Participants completed measures of irrational beliefs and mental wellbeing at pre-intervention, post-intervention, and follow-up (one month) time points. Visual analyses and social validation revealed that the intervention reduced irrational beliefs and enhanced mental well-being in two participants. However, REBT was more effective for some coaches than others, and follow-up data indicated a return to base levels in some coaches. Limitations and recommendations for future research are discussed, alongside practitioner reflections.

Keywords: virtual intervention, CBT, rational beliefs, education, social validation

## The Effects of a Brief Online Rational Emotive Behavioural Therapy (REBT) Programme on Coach Irrational Beliefs and Wellbeing

A coach plays various roles in their professional capacity (e.g., teacher, mentor, authority figure) and face many challenges (e.g., organisational issues, the fragility of the role, work-life balance; Thelwell et al., 2008), therefore, they are worthy of study as performers, alongside the athletes they support. Research into the stressors coaches encounter suggests they fall within the realms of organisation, performance, contextual, interpersonal, and intrapersonal stressors (Norris et al., 2017). Olusoga et al. (2009) identified 130 stressors unique to coaching (e.g., conflict, pressure and expectation, managing the competitive environment, organisational management, sacrificing personal time). Further research identified similar stressors for coaches, such as performance expectations, conflicting tasks, and managing relationships (Dixon & Turner, 2018), also indicating that the stress experienced by coaches is, in part, due to their perceptions of environmental demands and personal resources. In sum, and by many accounts, coaching is stressful.

Aside from being of academic interest, the stressors coaches experience in their roles could influence the mental well-being of those who are experiencing them. For example, Carson et al. (2019) found that stressors, such as managing workload, affected coach wellbeing, and younger coaches were more likely to suffer poorer mental well-being than their more senior colleagues. Mental well-being can be defined as “when individuals have the psychological, social and physical resources they need to meet a particular psychological, social and/or physical challenge” (Dodge et al., 2012, p. 230). The notion that mental well-being is in part determined by a resource-challenge discrepancy is in line with a contemporary understanding of how emotional and behavioural consequences of stressors may be cognitively mediated through cognitive appraisal. For example, in the revised theory of challenge and threat states in athletes (TCTSA-R; Meijen et al., 2019) it is the extent to

75 which the individual appraises sufficient personal resources to meet situational demands that  
76 determine whether they evinced an adaptive or maladaptive stress response. Greater  
77 resources confer greater adaptation to the stressor (challenge, rather than threat). Irrational  
78 beliefs (Ellis, 1994) are thought to play a mediating role between environmental stimuli and  
79 one's emotional, and behavioural responses. The concept of irrational beliefs emanates from  
80 a cognitive-behavioural psychotherapy (CBT) developed in the 1950s by Albert Ellis called  
81 rational emotive behaviour therapy (REBT). In line with other transactional theories of stress  
82 and emotion (e.g., Lazarus, 1999), in REBT it is held that the stressor alone does not directly  
83 influence the psychological health of the individual, rather, it is one's beliefs about the  
84 stressor that underpins psychological health. Specifically, irrational beliefs underpin poorer  
85 psychological health (Visla et al., 2016), and as such, REBT in sport is focused upon helping  
86 those within the performance environment to weaken their irrational beliefs in favour of  
87 rational beliefs (Maxwell Keys et al., 2022). Whilst the research regarding REBT in sport has  
88 developed over the past decade (Jordana et al., 2020), there has been little study of sport  
89 coaches in this particular field.

90 REBT deals with cognitions and beliefs unique to the individual, along with  
91 encouraging existential freedom while taking into account one's biological nature (Ellis &  
92 Ellis, 2019). REBT uses a GABC(DE) model with G representing one's goals, A representing  
93 adversity or activating events, B representing the beliefs associated with the A, C  
94 representing the emotional consequences, D represents disputing the self-defeating beliefs,  
95 and finally, E is concerned with developing new rational beliefs. In response to adversity (A)  
96 that thwarts one's goals (G), irrational beliefs (B) undercuts wellbeing and goal attainment,  
97 and thus are disputed (D) and replaced with rational beliefs (E). REBT has been used in sport  
98 to improve performance and mental well-being amongst athletes (see Jordana et al., 2020 for  
99 a systematic review). As a result, REBT may be pertinent for coaches because a coach's

beliefs may influence their perceptions of, and responses to, the many stressors they face. That is, coaches face many As that impede their Gs, and as such, the irrational Bs they hold are an important component in determining their well-being and goal attainment. Indeed, in one previous study with soccer coaches, irrational beliefs were positively related to a maladaptive appraisal (threat) of coaching stressors (Dixon et al., 2017), indicating that there is some commonality between irrational beliefs and a maladaptive appraisal of contextual stressors.

Given that the use of REBT in sport has largely used athletes as participants, the present study will explain why this approach might be beneficial for coaches. Previous research into the effect of CBTs on reducing coaches' maladaptive responses to stressors and improving performance has begun to emerge (e.g., Longshore & Sachs, 2015). Most notably and relevant to the current study, Olusoga and colleagues (2014) developed a mental skills training (MST) programme to aid coaches in the management of stressors. The six-week workshop programme included relaxation, cognitive restructuring (which is highly germane to REBT), confidence-building exercises, and communication strategies. Coaches reported improvements in coping strategies, but it is difficult to ascribe the effects to any particular psychological skill due to the multi-modal nature of the intervention. However, this study does illustrate how CBT-derived components can be used successfully within coaching populations, a promising finding in the context of the current study.

REBT has been successfully applied with positive effects across non-clinical and clinical populations including psychiatric (e.g., DiGuiseppe & Ammendola, 2019), military (Grove et al., 2021), law enforcement (Jones et al., 2021), fire and rescue (Wood et al.), business (Turner & Barker, 2015), exercise (e.g., Knapp et al., 2023), education (e.g., teachers; Warren, 2010), and sporting populations, namely athletes (Jordana et al., 2020). Furthermore, there is a body of work that reports the use of REBT with people holding

leadership roles outside of a sporting context (e.g., Anderson, 2002). For example, Wild et al. (2015) used a cognitive-behavioural coaching (REBT) framework to help increase performance, employee motivation, and enable conflict resolution, indicating that REBT can aid leader capacity to address dysfunctional beliefs in their employees. Anderson (2002) identified several areas of leadership which can be improved by REBT, such as anger management, confrontation, relationship problems, and procrastination. Therefore, whilst coaches have yet to be the subject of REBT research literature, the ample and broad evidence for REBT would indicate that coaches should benefit from REBT in similar ways to other leadership populations. Finally, given the multitude of stressors faced by coaches and the focus of REBT on helping individuals adapt to adversity, REBT could be an ideal approach to use with coaches as it recognises that situations and events can be adverse, it furnishes individuals with the skills to affect their emotional and behavioural reactions to the adversity (Maxwell-Keys et al., 2022).

Applying concise methods of sport psychology provision is important due to a coach's busy schedule. REBT offers such a method as it can be applied in a brief manner (Bowman & Turner, 2022; Turner, 2016). Indeed, brief CBT has been used to help clients with various clinical disorders, such as anxiety, insomnia, and schizophrenia with interventions ranging from three fifty-minute sessions to ten days of intensive CBT (Pigeon et al., 2019; Turkington et al., 2002; Watt et al., 2006). However, some interventions have been used in as short a time as fifteen minutes at half-time of a football match (Zhu et al., 2020). For REBT specifically, a single 50-minute session has been applied with soccer athletes, which elicited short-term reductions in irrational beliefs (Turner et al., 2014a). Additionally, Turner et al. (2015) was able to elicit longer-term changes in irrational beliefs using a three 40-minute session REBT intervention, within a cohort of soccer athletes. Huggins (2017) explained that, with full engagement throughout, client belief change could

be achieved after three sessions, utilising additional sessions to further cement these new beliefs. To capitalise on REBT's potential benefits, between-session activities should be used to help cement participant understanding of concepts and encourage self-reflection and introspection (Turner et al., 2015). But the ability to apply REBT briefly and effectively makes it an appealing approach for use with coaches, whose time is limited.

Between early 2020 and late 2021, the sports industry was significantly influenced by the COVID-19 pandemic. For coaches working in sport, not only did they have to manage their home life in a way that was more complex than before, but they also had to continue to help their athletes to work towards their goals, and their clubs/organisations to remain competitive. Amidst large-scale impacts upon competition, coaches were kept away from their usual working (and social) environments, which may have negatively impacted their mental well-being (Santi et al., 2021). It is within this context that the current study takes place. Given the previous evidence that REBT can enhance mental well-being (Davis & Turner, 2020), one of the main aims of the current study was to explore the effects of REBT on coach mental well-being.

The COVID-19 pandemic also influenced how the REBT intervention was conducted in the present study. During the successive lockdowns in the UK due to COVID-19, online sessions became more common as a necessity rather than a choice. Previously, online sessions have been used due to the potential socio-economic or clinical characteristics (e.g., social anxiety) of the client (Batterham et al., 2020). But due to COVID-19, sport psychology practitioners were tasked with supplying sport psychology support remotely to their clients using online communication technologies (Price et al., 2021). As such, the REBT applied in the current study was done so remotely via the online video conferencing app, Zoom. REBT has been delivered successfully in this way in past research, namely by Cunningham and Turner (2016) who delivered a one-to-one REBT programme to mixed martial arts (MMA)



athletes. The online delivery enabled the researchers to overcome issues such as geographical challenges between the client and the psychologist and also benefitted from more flexibility if the session time needed to be changed (Cunningham & Turner, 2016).

The purpose of the present study was to examine the effects of a brief online REBT programme on the irrational beliefs and mental well-being of canoeing coaches. We aimed to extend the literature concerning the use of CBT-based interventions, and study REBT for the first time, with coaches. In the present study, we also aimed to extend the limited research reporting on the use of online REBT (Cunningham & Turner, 2016). It was hypothesised that a brief online REBT programme would lead to decreases in irrational beliefs and enhanced mental well-being of Canoeing coaches.

## **Method**

### **Participants**

Following university ethical approval, participants were recruited from an elite international canoeing organisation. All coaches were contacted via email with a copy of the participant information sheet and were asked to contact the lead researcher if they were interested in taking part. Four participants, three males (participant 1 aged 41, participant 2 aged 36, and participant 3 aged 47) and one female (participant 4 aged 27) responded and consented to take part in the research. Coaches had between 5 and 14 years of coaching experience of coaching canoeing. Athletes coached by the participants were regularly competing at national and international competitions. Two coaches were part of canoe slalom (white water; participants 1 & 2) staff and two were part of canoe sprint (flat water; participants 3 & 4) staff.

### **Design**

We adopted an A-B single-case experimental design (SCED) with follow-up (see Barker et al., 2011) to examine the effects of a brief online REBT programme. Similar to

Turner et al. (2014b), we focused on the delivery of REBT in an applied context and endeavoured to adhere to a field-based scientific design as practically possible (Pain & Harwood, 2009). The advantages of using a SCED are that it allows evaluation of an intervention in a context that is synonymous with sport psychological practice, rather than in a controlled environment which is a controlled-group design (Barker et. al., 2011). Also, the design allows for the collection of quantitative (e.g., self-report questionnaires) and qualitative (e.g., social validation) data across multiple time points. SCEDs are also advantageous because they permit the investigation of, and report the data for, each participant as part of an intervention group, with just a few subjects telling a story (Normand, 2016). The reporting of each participant's data, as opposed to group data, aids scrutiny, and allows for each individual's responses to the intervention to be recorded and evaluated.

## **Measures**

**Irrational Beliefs.** The irrational Performance Beliefs Inventory (iPBI) is a 28-item questionnaire representing the four core irrational beliefs of REBT theory (primary irrational beliefs, low frustration tolerance, awfulizing, and depreciation). Responses are made on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) to a series of performance belief statements (Turner et al., 2016). Higher scores indicate greater endorsement of irrational beliefs. Reliability and validity testing showed the iPBI conforms to the requirements to be considered valid ( $\alpha = .90$ ; Turner et al., 2018). A total score is calculated, and higher scores indicate greater irrational beliefs.

**Psychological Wellbeing.** The Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS; Tennant et al., 2007) is a 14-item questionnaire related to mental well-being over the past two weeks. The WEMWBS is scored using a 5-point Likert scale, rating from 'none of the time' to 'all of the time' with a higher score equating to poorer wellbeing. With an alpha of .89, the WEMWBS shows strong reliability and internal consistency (Tennant et

al., 2007). The WEMWBS has previously been used to evaluate the mental well-being of coaches in Australia (Carson et al., 2019).

### **Data Collection Procedures**

Data were collected at three-time points, baseline (A), post-intervention (B), and follow-up (one month following post-intervention; C) phases. Specifically, the questionnaires were administered one week before the REBT programme (baseline), immediately after the final REBT session (post-intervention), which was completed 3 weeks after baseline, and one month after the final REBT session (follow-up). Previously, REBT research has used a one-month follow-up to understand whether any changes continue to have a long-term influence once outside of the REBT programme (see Davis & Turner, 2019). The REBT programme lasted for three weeks (3 x ~40-minute sessions, 1 per week). This is a similar protocol which has been used previously within REBT research (e.g., Cunningham & Turner, 2016). At the follow-up time point, participants completed several social validation questions pertaining to their thoughts about the effectiveness of the intervention delivery and its applicability to coaching (see Page & Thelwell, 2013). The questions were sent out via Qualtrics and the answers were given in short or long sentence formats. Social validity is an extension of objective data, giving the researcher an understanding of what the cohort thinks of the programme (Dempsey & Matson, 2009). This information can then influence researchers in the future (Page & Thelwell, 2013). Quantitative and qualitative methods of data collection were gathered using Qualtrics. A link was sent to the participants where they were able to answer the questions anonymously, but the lead researcher was available via Zoom call to answer any questions that arose.

### **REBT Intervention**

The REBT programme was conducted as group sessions (all 4 participants engaged in the sessions at once) using the online video conferencing app, Zoom. Participants all had

their cameras switched on and microphones unmuted to allow for flowing conversation. All 4 participants were present throughout the introductory sessions and the 3 REBT sessions. A group-based approach was chosen in order to maximise the efficiency of the programme with coaches in a difficult, unknown stressor of COVID-19. The REBT programme followed guidance from the literature base concerning the application of REBT in sport (see Turner, 2019). The REBT programme was conducted in a group setting similar to previous research (e.g., Vertopolous & Turner, 2017) whereby REBT education was supported by group activities and discussion. The core elements of REBT were covered such as the GABCDE framework, irrational and rational beliefs, disputation, and healthy vs unhealthy emotions. More specifically, an initial meeting encompassed an introduction to the course and an exploration of the stressors specific to their role within canoeing encountered by the coaches within their work, and the first questionnaires were completed. The focus for the first REBT session focused on the ABC elements of the GABCDE model. More specifically, the concept that our beliefs or thoughts (B) about the activating event (A) cause the behavioural response (C). During session two we focused on the differences between healthy and unhealthy negative emotions, along with an introduction to different disputation (D) methods (e.g., realistic, logical, and pragmatic; see Ellis, & Joffe Ellis, 2019). The final session explored methods of developing new rational beliefs (E). This was proposed using the smarter thinking app or worksheet (see Turner, 2014), rational self-talk (see Turner et al., 2020), and continued practice by integrating disputation within daily routines.

Following each REBT session, participants were given worksheets to complete as homework in an attempt to further the learning and the long-term impact of the programme. The homework assignments were “I Must Win” and “Smarter Thinking” worksheets (Turner, 2014; available on request from the first author), which aim to identify and dispute irrational beliefs and then attempt to reframe these irrational beliefs into rational beliefs.

275

## 276 **Analytic Strategy**

277 To determine intervention effectiveness, data were visually inspected using tables (Table 1)  
278 for each participant and each dependent variable (Barker et al., 2011). The effectiveness of  
279 the REBT programme was determined using Hrycaiko and Martin's (1996) guidelines, which  
280 state that (a) the effect is present in every participant, (b) change appeared shortly after the  
281 intervention was initiated, and (c) the magnitude of percentage change from baseline to  
282 follow-up. We also calculated percentage change scores between data collection phases to  
283 determine the magnitude of change (e.g., Davis & Turner, 2020). For clarity and to adhere to  
284 the single-case nature of the study, the results are structured by participant rather than by  
285 variable (e.g., Thelwell & Greenlees, 2001).

286 In an attempt to understand whether the size of change was statistically reliable we  
287 calculated the Reliable Change Index (RCI; Jacobson & Truax, 1991) for irrationality and  
288 well-being. To calculate the RCI, we divided the standard error of the difference ( $SE_D$ ) by the  
289 pre- and post-test scores (Jacobson & Truax, 1991). A reliable change is considered to have  
290 occurred if the score is above 1.96. A score about 1.96 suggests that the probability this score  
291 is random is less than 0.5. Table 1 shows the RCI values for each participant for irrationality  
292 and well-being.

293 Similar to past REBT research conducted in sport (see, Knapp, et al., 2023), the  
294 qualitative data collected during social validation were analysed by the primary research,  
295 using a simple thematic analysis and followed Braun and Clarke's (2006) six-phase guide to  
296 thematic analysis. The phases consisted of becoming familiar with the data, generating initial  
297 codes, searching for themes, reviewing themes, defining themes, and writing the themes up.  
298 Social validation data available on request from the primary researcher.

299

## Results

### 300 Participant 1

301 Visual inspection of data (see table 1) revealed a reliable reduction ( $RCI = 3.68$ ) in  
302 irrational beliefs (IBs) from baseline to follow-up (-9.73%). There was a reliable reduction  
303 ( $RCI = 2.34$ ) in IBs from baseline to intervention (-6.19%). This effect was seen from  
304 intervention to follow-up (-3.77), but this was not reliable ( $RCI = 1.34$ ). This suggests that  
305 there was a positive effect following the REBT intervention with a small but unreliable  
306 reduction in irrational beliefs and continued to have an effect one month following  
307 intervention.

308 Mental Well-being for participant 1 revealed a reliable improvement ( $RCI = -6.37$ )  
309 from baseline to follow-up (79.31%). Wellbeing reliably increased ( $RCI = -2.77$ ) from  
310 baseline to intervention (34.48%), and intervention to follow-up ( $RCI = -3.6$ ; 33.33%),  
311 suggesting that the REBT intervention improved wellbeing and had a lasting effect one  
312 month following the intervention, though causation cannot be determined.

### 313 Participant 2

314 Visual inspection of data (see table 1) revealed an increase in IBs from baseline to  
315 follow-up (5.62%), though this was not reliable ( $RCI = -1.67$ ). There was a reliable increase  
316 ( $RCI = -2.34$ ) in IBs from baseline to intervention (7.87%). There was then a decrease in IBs  
317 from intervention to follow-up (-2.08%), but this too was not reliable ( $RCI = 0.67$ ). This  
318 suggests that the REBT intervention was unsuccessful in reducing irrational beliefs, although  
319 IBs decreased from intervention to follow-up, which may suggest there was minimal impact.

320 Mental well-being, for participant 2, decreased from baseline to follow-up (-8.89%),  
321 though this was not a reliable change ( $RCI = 1.11$ ). Wellbeing decreased from baseline to  
322 intervention (-13.33%) and increased from intervention to follow-up (5.13%), these too were

not reliable ( $RCI = 1.66$ ;  $RCI = -0.55$ , respectively). This suggests that the programme had little impact on participant 2's mental wellbeing.

### **Participant 3**

Visual inspection of data (see table 1) revealed a reliable reduction ( $RCI = 2.34$ ) in IBs from baseline to follow-up (-9.59%). There was also a reliable reduction ( $RCI = 3.34$ ) in IBs from baseline to intervention (-13.70%). There was then an increase in IBs from intervention to follow-up (4.55), though this was not reliable ( $RCI = 1.11$ ). This suggests that there was an effect following the REBT intervention with a reduction in irrational beliefs, though does not have longer-term effects.

Mental well-being for participant 3 reliably improved ( $RCI = -3.32$ ) from baseline to follow-up (24.49%). Well-being reliably increased ( $RCI = -2.22$ ) from baseline to intervention (16.33%), and intervention to follow-up (7.02%), though this was not reliable ( $RCI = -1.11$ ). This suggests that the REBT intervention improved wellbeing and had a lasting effect one month following the intervention.

### **Participant 4**

Visual inspection of data (see table 1) revealed an increase in IBs from baseline to follow-up (1.08%), though this was not reliable ( $RCI = -0.33$ ). There was a reduction in IBs from baseline to intervention (-2.15%), again this was not a reliable change ( $RCI = 0.67$ ). However, there was an increase in IBs from intervention to follow-up (3.30), though this too was not reliable ( $RCI = -1.00$ ). This suggests that there was an effect following the REBT intervention with a reduction in irrational beliefs though IBs seemed to return to baseline.

Mental well-being for participant 1 improved from baseline to follow-up (9.09%), although this was not a reliable change ( $RCI = -1.11$ ). Well-being reliably increased ( $RCI = -3.60$ ) from baseline to intervention (29.60%) and reliably reduced ( $RCI = 2.49$ ) from

intervention to follow-up (-15.79%), suggesting that the REBT intervention improved well-being initially and, again, then began to return to baseline.

Visual inspection of all four participants suggests an initial improvement in well-being and irrational beliefs with this beginning to return to baseline at follow-up.

### **Social Validation**

Participants were asked how useful they felt the REBT intervention was when able to apply it to their coaching. For example, “I have helped one of the paddlers to think about their situations with friends in school... We used REBT effectively to improve her focus and search for more realistic solutions” (Participant 3) and “... helping me rationalise why certain people have very different responses to pressurised environments” (Participant 4).

Furthermore, most found were able to translate REBT to their coaching. For example, participant 3 explained, “Yes, once you understand that experiences form the way I react then it’s easy to help others”. However, participant 1 explained “Not yet, it’s too early to say I’m only just returning to coaching”. This participant is reflecting on the issue of returning to face-to-face coaching as lockdown procedures are eased in the UK.

All participants felt that the REBT intervention helped to deal with stress. For example, “It helped me to see the cause for the stress and look at what is in my power to control” (participant 1). Participant 4 concurred with this remark “It’s helped me look for the things that cause me stress...”. In addition to this, participants felt the intervention affected their beliefs. For example, “I think over time my beliefs will change as I have more positive experiences” (participant 3), with participant 4 having a similar view “It’s probably made me more confident in my positive beliefs and continue to [question] my negative beliefs”.

With regards to the effectiveness of the intervention itself, participant 2 explained the REBT sessions were “pretty good, informative and nice to expose... experiences and thoughts/feels on the learning topics”. In addition to this, participant 3 explained the sessions



“...helped to highlight useful ways to deal with the presentation and reaction of stressful situations in work and private life”. Finally, participant 1 explained that “it was good to learn and reflect upon my own beliefs, stress factors which may affect my coaching”.

Participants were also asked how long they had spent on the homework task, which ranged from 10 to 45 minutes (See table 1) This data can be used to understand adherence to the programme and the effort given by participants to change their behaviours.

## **Discussion**

In the present study, an A-B single-case experimental design (SCED) was employed to examine the effects of a brief (three-session) online REBT programme on the irrational beliefs and mental well-being of four canoeing coaches. The effectiveness of the programme was evaluated immediately after the three sessions, as well as at a one-month follow-up phase. It was hypothesised that the intervention would reduce irrational beliefs and subsequently improve levels of mental well-being of the participants.

Mental well-being and being able to deal with stressors within the role of coaching is a well-researched area (Olusoga et al., 2014). REBT has been used in previous research to improve mental well-being among athletes (see Chrysidis et al., 2020) though, to the researcher’s knowledge, research has not identified whether an REBT programme positively impacts a coach’s well-being. In the present study, it was revealed that an REBT programme had a positive impact on well-being. On visual inspection of the data, three of the four participants reported an increase in mental well-being from baseline to follow-up. Within the realms of improving mental well-being, the present study concurs with previous studies of the use of REBT with athletes (Davis & Turner, 2020). Davis and Turner (2020) identified that, within a cohort of four athletes, three participants’ mental well-being improved across the REBT intervention from baseline to follow-up.

Previously, research has suggested that coaches attempt to deal with stressors in a problem-focused manner (Norris, et al., 2017), suggesting coaches tend to follow A-C thinking. REBT concurs with the notion that one tends to think the situation, adversity, or activating event (A) is the cause of a behavioural consequence (C; Ellis & Ellis, 2019). However, it is one's thoughts or beliefs (B) about the A which impact the C (B-C thinking; Ellis, & Joffe Ellis, 2019) and if one's beliefs are irrational then this can impact the behavioural responses to challenging situations. Therefore, if one can use less irrational and more rational thoughts, they are, theoretically, more likely to exhibit behaviours more conducive to performance and mental well-being. Visual inspection of the percentage changes of irrational beliefs suggested that the intervention reduced irrational beliefs in two participants (participants 1, 3) from baseline to follow-up. Participants' 2 and 4 showed an increase in total irrational beliefs from baseline to intervention. Turner and colleagues (2014a) identified similar results when they used a group intervention with athletes. Although Turner et al. (2014a) used a single session, the findings suggested that, at follow-up, the irrational beliefs returned to, or close to, baseline. Therefore, this suggest that an extended number of sessions, tailored to the individual, with homework tasks, may help to embed information and aid retention and recall, and therefore, increasing the likelihood of long-term change to rational recall.

Based on the results of the present study, one could suggest that when irrational beliefs decrease, mental well-being increases. Whereas, when irrational beliefs increase, mental well-being decreases. This is true for all participants except one (participant 4), who showed a relatively small increase in irrational beliefs and an increase in mental well-being from baseline to intervention. As such, there does seem to be a link between irrational beliefs and mental well-being, such that a change in one may trigger a change in the other. There are potentially many reasons as to why participants 2 and 4 did not improve in mental well-being

and irrational beliefs scores. For example, previous research advised the use of homework tasks to use between sessions in an attempt to reinforce the use of autonomous disputation and prolong the impact of the REBT programme (Turner et al., 2014b; Wood et al., 2017). The current study used homework tasks in an attempt to drive longer-term effects of the intervention, though were unsuccessful in doing so. A possible reason for this is the time spent on intermediary activities. The average time participants spent on homework tasks was just over 20 minutes per week and ranged from 10-45 minutes. This is not a large amount of time to aid change within what can be some deep-rooted irrational beliefs and may explain why no long-term effects were identified. For example, the length of time spent within the sessions equates to approximately 0.45% of the participant's week (estimated based on approximately 35 minutes sessions, 16-hour days across each). Therefore, if participants are spending 10 minutes on intermediary tasks, they are spending approximately 0.17% of their week attempting to create change in beliefs. This may not be enough to weaken and remove beliefs that may have been in place for a long time and that may have been reinforced by the coach's environment (King et al., 2022). Participants' 2 and 4 spent less time on homework tasks than participants 1 and 3. This could give a possible understanding as to why their irrational beliefs scores increased from baseline to follow-up, as they spent a short amount of time reflecting and reinforcing the content of the programme.

Working with coaches on a one-to-one basis may be more beneficial than group sessions. As previously mentioned, group interventions have shown an immediate improvement in irrational beliefs mental well-being, though do not show a long-term effect (Turner et al., 2014a). However, individual sessions have shown long-term effects of up to six months in some cases (Cunningham, & Turner, 2016). Therefore, utilising individual sessions may have a greater impact on the coach by being able to develop a stronger working alliance, which is important within REBT (Bowman & Turner, 2022). Working individually

also allows for a more tailored intervention with examples used specifically for the individual, rather than a group of participants (Turner et al., 2014b). Turner et al. (2014b) also explained that some irrational beliefs may require more intense, individual work to adequately deal with the irrational beliefs. Therefore, individual sessions may give a greater opportunity for long-term change (Jordana et al., 2020).

The coaches appeared to respond positively to the online REBT programme. The social validation data suggested the participants liked the discussion-based approach to the sessions. They explained that they felt it was good to help identify their irrational beliefs and potential causes of their stress. All participants explained that they thought the intervention had been successful, though there were some reservations about committing to this rhetoric as some of the coaches had only recently returned to coaching following the COVID-19 lockdown in the UK. Some coaches felt that they needed more time to see the impact on their coaching and if it had helped them, in terms of their effectiveness and dealing with adversity within their job role. This may be reflected in the data, in that a greater dose may have been required to generate longer-term change. However, participants reported that they were able to understand how they can employ REBT principles within their coaching practices.

The present study is not without limitations. COVID-19 restricted several areas of interest, and research design, within the present study. For example, the intervention being held online was a product of governmental restrictions due to the pandemic, which meant the intervention could not be delivered face-to-face. However, the findings within the present study showing similar results to previous REBT research within sport (e.g., Turner et al., 2014a), which were delivered face-to-face, are promising. This may suggest that online sessions may be as effective as face-to-face sessions. However, this requires more research to conclude this with confidence. Additionally, the results could include further information which comes with the use of more data collection time points and individualised REBT

471 sessions. For example, Davis and Turner (2019) were able to collect data at 5 time points due  
472 to the individualised REBT session used in the study. The individualised nature of REBT  
473 session research in sport also allows for effect sizes to be included within analyses (see  
474 Cunningham & Turner, 2016). By being able to include effect sizes, we would be able to  
475 show how large the changes were between time points giving a greater understanding of the  
476 effectiveness of the REBT programme.

477         Future research may like to use REBT on a more global level. For example, Horm  
478 (2008) identified that a coach's beliefs can impact their athletes' beliefs. However, this has  
479 not been researched within the context of REBT. Therefore, it is possible that the coach may  
480 facilitate an "irrational environment" based on their interactions with people within the  
481 sporting environment. To develop this further, trying to gain an understanding of the impact  
482 on the athletes would be beneficial to help understand the links between belief transference  
483 and the impact of athlete performance. It may also be interesting to understand if an REBT  
484 intervention on a performance environment would improve irrational beliefs, mental well-  
485 being, and performance.

486         Concerning the REBT intervention itself, it may be beneficial to develop coach-  
487 specific terminology to allow for greater application to the coaches. Within the present  
488 research, the initial session included some time to discuss stressors within the participants  
489 coaching, which was then the basis of the examples used throughout the further sessions.  
490 However, the development of an 'REBT coaching handbook' could develop an intervention  
491 specific for coaching and allow practitioners to direct their chosen intervention more  
492 specifically when working with coaches. Additionally, the psychometrics used within the  
493 present study was developed for use with athletes (iPBI) and may not necessarily apply to the  
494 coaching staff. Therefore, it may be necessary to modify these psychometric tests or develop  
495 new tools altogether.

The purpose of the current study was to examine the effectiveness of a brief online REBT programme among a cohort of coaches. Based on the findings it is evident that the programme helped some of the participants' general mental well-being and irrational beliefs. This is the first study to attempt to develop a brief online REBT programme for coaches, which comes with limitations and opportunities for development. The present study creates a foundation upon which further research can build. Research into how sport psychology can help coaching is somewhat scant when compared to the research into athlete development. However, with coaches being seen as performers in their own right (Thelwell, et al., 2008), it is imperative that coaches are treated with the same rigour as the athletes they coach. The present study could be the beginning of a new method of dealing with coaching stressors, effectiveness, and development.

## References

- Anderson, J. P. (2002). Executive coaching and REBT: Some comments from the field. *Journal of rational-emotive and cognitive-behavior therapy*, 20(3), 223-233.
- Barker, J., McCarthy, P., Jones, M., & Moran, A. (2011). *Single case research methods in sport and exercise*. Routledge.
- Batterham, P. J., Han, J., Mackinnon, A. J., Werner-Seidler, A., Caele, A. L., Wong, Q., ... & Christensen, H. (2020). Factors associated with engagement in online self-help programs among people with suicidal thoughts. *Journal of affective disorders*, 265, 402-409.
- Bowman, A. W., & Turner, M. J. (2022). When time is of the essence: The use of rational emotive behavior therapy (REBT) informed single-session therapy (SST) to alleviate social and golf-specific anxiety, and improve wellbeing and performance, in amateur golfers. *Psychology of Sport and Exercise*, 60, 102167.

520 Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research*  
521 *in Psychology*, 3, 77-101.

522 Carson, F., Malakellis, M., Walsh, J., Main, L. C., & Kremer, P. (2019). Examining the  
523 mental well-being of Australian sport coaches. *International journal of environmental*  
524 *research and public health*, 16(23), 4601.

525 Chrysidis, S., Turner, M. J., & Wood, A. G. (2020). The effects of REBT on irrational  
526 beliefs, self-determined motivation, and self-efficacy in American Football. *Journal of*  
527 *Sports Sciences*, 38(19), 2215-2224.

528 Cunningham, R., & Turner, M. J. (2016). Using Rational Emotive Behavior Therapy (REBT)  
529 with Mixed Martial Arts (MMA) athletes to reduce irrational beliefs and increase  
530 unconditional self-acceptance. *Journal of Rational-Emotive & Cognitive-Behavior*  
531 *Therapy*, 34(4), 289-309.

532 Davis, H., & Turner, M. J. (2020). The use of rational emotive behavior therapy (REBT) to  
533 increase the self-determined motivation and psychological well-being of  
534 triathletes. *Sport, Exercise, and Performance Psychology*, 9(4), 489.

535 Dempsey, T., & Matson, J. L. (2009). General methods of treatment. In J.L. Matson (Ed.),  
536 Social behavior and skills in children (pp. 77–96). New York: Springer.

537 DiGiuseppe, R., & Ammendola, E. (2019). REBT and Personality Disorders. In *REBT with*  
538 *Diverse Client Problems and Populations* (pp. 191-215). Springer, Cham.

539 Dixon, M., Turner, M. J., & Gillman, J. (2017). Examining the relationships between  
540 challenge and threat cognitive appraisals and coaching behaviours in football  
541 coaches. *Journal of sports sciences*, 35(24), 2446-2452.

542 Dixon, M., & Turner, M. J. (2018). Stress appraisals of UK soccer academy coaches: an  
543 interpretative phenomenological analysis. *Qualitative Research in Sport, Exercise and*  
544 *Health*, 10(5), 620-634.

545 Dodge, R., Daly, A. P., Huyton, J., & Sanders, L. D. (2012). The challenge of defining  
546 wellbeing. *International journal of wellbeing*, 2(3).

547 Ellis A. (1994) *Reason and emotion in psychotherapy*. (2nd ed.) New York: Birch Lane  
548 Press.

549 Ellis, A., & Joffe Ellis, D. (2019). *Rational emotive behavior therapy*. American  
550 Psychological Association.

551 Grove, A. B., Kurtz, E. D., Wallace, R. E., Sheerin, C. M., & Scott, S. M. (2021).  
552 Effectiveness of a rational emotive behavior therapy (REBT)-informed group for post-  
553 9/11 Veterans with posttraumatic stress disorder (PTSD). *Military psychology*, 33(4),  
554 217-227.

555 Horn, T. S. (2008). *Coaching effectiveness in the sport domain*. In T. S. Horn (Ed.), *Advances*  
556 *in sport psychology* (pp. 239–267,455–459). Human Kinetics.

557 Hrycaiko, D., & Martin, G. L. (1996). Applied research studies with single-subject designs:  
558 Why so few?. *Journal of Applied Sport Psychology*, 8(2), 183-199.

559 Huggins, M. (2017). A short-term rational emotive behavior therapy (REBT) intervention for  
560 competition anxiety with a trampoline gymnast. In *Rational Emotive Behavior Therapy*  
561 *in Sport and Exercise* (pp. 20-37). Routledge.

562 Jacobson, N. S., & Truax, P. (1991). Clinical significance: A statistical approach to defining  
563 meaningful change in psychotherapy research. *Journal of Consulting and Clinical*  
564 *Psychology*, 59(1), 12–19.

565 Jones, J. K., Turner, M. J., & Barker, J. B. (2021). The effects of a cognitive-behavioural  
566 stress intervention on the motivation and wellbeing of senior UK police personnel.  
567 *International Journal of Stress Management*, 28(1), 46–60.



568 Jordana, A., Turner, M. J., Ramis, Y., & Torregrossa, M. (2020). A systematic mapping  
 569 review on the use of Rational Emotive Behavior Therapy (REBT) with  
 570 athletes. *International Review of Sport and Exercise Psychology*, 1-26.

571 King, A. M., Turner, M. J., Plateau, C. R., & Barker, J. B. (2022). The socialisation of athlete  
 572 irrational beliefs. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, 1-24.

573 Knapp, S., Miller, A., Outar, L., & Turner, M. J. (2023). Psychological well-being and  
 574 exercise addiction: The treatment effects of an REBT intervention for females.  
 575 *Psychology of Sport and Exercise*, 64.

576 Lazarus, R. S. 1999. *Stress and emotion: A new synthesis*, New York: Springer.

577 Longshore, K., & Sachs, M. (2015). Mindfulness training for coaches: A mixed-method  
 578 exploratory study. *Journal of Clinical Sport Psychology*, 9(2), 116-137.

579 Mansell, P. C. (2021). Stress mindset in athletes: Investigating the relationships between  
 580 beliefs, challenge and threat with psychological wellbeing. *Psychology of Sport and*  
 581 *Exercise*, 57, 102020.

582 Maxwell-Keys, C., Wood, A. G., & Turner, M. J. (2022). Developing decision making in  
 583 Rugby Union match officials using rational emotive behavior therapy  
 584 (REBT). *Psychology of Sport and Exercise*, 58, 102098.

585 Meijen, C., Turner, M., Jones, M. V., Sheffield, D., & McCarthy, P. (2020). A theory of  
 586 challenge and threat states in athletes: A revised conceptualization. *Frontiers in*  
 587 *psychology*, 11, 126.

588 Normand, M. P. (2016). Less is more: Psychologists can learn more by studying fewer  
 589 people. *Frontiers in psychology*, 7, 934.

590 Norris, L. A., Didymus, F. F., & Kaiseler, M. (2017). Stressors, coping, and well-being  
 591 among sports coaches: A systematic review. *Psychology of Sport and Exercise*, 33, 93-  
 592 112.

593 Olusoga, P., Butt, J., Hays, K., & Maynard, I. (2009). Stress in elite sports coaching:  
 594 Identifying stressors. *Journal of applied sport psychology*, 21(4), 442-459.

595 Olusoga, P., Maynard, I., Butt, J., & Hays, K. (2014). Coaching under pressure: mental skills  
 596 training for sports coaches. *Sport and exercise psychology review*, 10(3), 31-44.

597 Pain, M. A., & Harwood, C. G. (2004). Knowledge and perceptions of sport psychology  
 598 within English soccer. *Journal of Sports Sciences*, 22(9), 813-826.

599 Page, J., & Thelwell, R. (2013). The value of social validation in single-case methods in sport  
 600 and exercise psychology. *Journal of Applied Sport Psychology*, 25(1), 61-71.

601 Pigeon, W. R., Funderburk, J. S., Cross, W., Bishop, T. M., & Crean, H. F. (2019). Brief  
 602 CBT for insomnia delivered in primary care to patients endorsing suicidal ideation: a  
 603 proof-of-concept randomized clinical trial. *Translational behavioral medicine*, 9(6),  
 604 1169-1177.

605 Price, D., Wagstaff, C. R., & Thelwell, R. C. (2021). Opportunities and considerations of new  
 606 media and technology in sport psychology service delivery. *Journal of Sport*  
 607 *Psychology in Action*, 1-12.

608 Razavi, T. (2001). Self-report measures: An overview of concerns and limitations of  
 609 questionnaire use in occupational stress research.

610 Santi G, Quartiroli A, Costa S, di Fronso S, Montesano C, Di Gruttola F, Ciofi EG, Morgilli  
 611 L and Bertollo M (2021) The Impact of the COVID-19 Lockdown on Coaches'  
 612 Perception of Stress and Emotion Regulation Strategies. *Front. Psychol.* 11:601743.  
 613 doi: 10.3389/fpsyg.2020.601743

614 Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., ... & Stewart-Brown, S.  
 615 (2007). The Warwick-Edinburgh mental well-being scale (WEMWBS): development  
 616 and UK validation. *Health and Quality of life Outcomes*, 5(1), 63.

617 Thelwell, R. C., Weston, N. J. V., Greenlees, I. A., & Hutchings, N. V. (2008). Stressors in  
618 elite sport: A coach perspective. *Journal of Sports Sciences*, 26, 905-918.

619 Turkington, D., Kingdon, D., & Turner, T. (2002). Effectiveness of a brief cognitive–  
620 behavioural therapy intervention in the treatment of schizophrenia. *The British Journal*  
621 *of Psychiatry*, 180(6), 523-527.

622 Turner, M. (2014). Smarter thinking in sport. *The Psychologist*, 27, 596-599.

623 Turner, M. J. (2016). Rational emotive behavior therapy (REBT), irrational and rational  
624 beliefs, and the mental health of athletes. *Frontiers in psychology*, 7, 1423.

625 Turner, M. J. (2019). REBT in sport. In *Advances in REBT* (pp. 307-335). Springer, Cham.

626 Turner, M. J., & Barker, J. B. (2015). Examining the effects of rational emotive behavior  
627 therapy (REBT) on the irrational beliefs of blue-chip professionals. *Journal of*  
628 *Rational-Emotive & Cognitive-Behavior Therapy*, 33(1), 17-36.

629 Turner, M. J., Slater, M. J., & Barker, J. B. (2014a). Not the end of the world: The effects of  
630 rational-emotive behavior therapy (REBT) on irrational beliefs in elite soccer academy  
631 athletes. *Journal of Applied Sport Psychology*, 26(2), 144-156.

632 Turner M.J., Slater, M., & Barker, J. B. (2014b). The season-long effects of rational emotive  
633 behavior therapy on the irrational beliefs of professional academy soccer  
634 athletes. *international journal of sport psychology*.

635 Turner, M. J., Slater, M. J., Dixon, J., & Miller, A. (2018). Test–retest reliability of the  
636 irrational performance beliefs inventory. *European journal of sport science*, 18(1), 123-  
637 129.

638 Vertopoulos, E., & Turner, M. J. (2017). Examining the effectiveness of a rational emotive  
639 personal-disclosure mutual-sharing (REPDMS) intervention on the irrational beliefs  
640 and rational beliefs of Greek adolescent athletes. *The Sport Psychologist*, 31(3), 264-  
641 274.

642 Warren, J. M. (2010). The Impact of Rational Emotive Behavior Therapy on Teacher  
643 Efficacy and Student Achievement. *Journal of School Counseling*, 8(11), n11.

644 Watt, M., Stewart, S., Birch, C., & Bernier, D. (2006). Brief CBT for high anxiety sensitivity  
645 decreases drinking problems, relief alcohol outcome expectancies, and conformity  
646 drinking motives: Evidence from a randomized controlled trial. *Journal of Mental*  
647 *Health*, 15(6), 683-695.

648 Wood, A. G., Barker, J. B., & Turner, M. J. (2017). Developing performance using rational  
649 emotive behavior therapy (REBT): A case study with an elite archer. *The Sport*  
650 *Psychologist*, 31(1), 78-87.

651 Wood, A. G., Wilkinson, A., Turner, M. J., & Haslam, C., & Barker, J. B. (2021). Into the  
652 Fire: Applying Rational Emotive Behavioural Coaching (REBC) to reduce Irrational  
653 Beliefs and Stress in Fire Service Personnel. *International Journal of Stress*  
654 *Management*, 28(3), 232–243. <https://doi.org/10.1037/str0000228>

655 Zhu, Y., Sun, F., Li, C., Chow, D. H., & Wang, K. (2020). Acute effect of brief mindfulness-  
656 based intervention coupled with fluid intake on athletes' cognitive function. *Journal of*  
657 *Sports Science & Medicine*, 19(4), 753

**Table 1**

*Percentage change of each variable from baseline, intervention, follow-up and from baseline to follow-up*

**N.B.** <sup>a</sup>Baseline to Intervention mean % change, <sup>b</sup>intervention to follow-up mean % change, <sup>c</sup>baseline to follow-up mean % change.

Measure	Participant	Baseline		Intervention			Follow-up				Baseline – Follow-up		
			<i>M Score</i>	%	<i>M Change</i>	RCI	<i>M Score</i>	%	<i>M Change</i>	RCI	%	<i>M Change</i>	RCI
Irrational beliefs	1	4.04	3.79	-6.19 <sup>a</sup>	-0.25	2.34	3.64	-3.77 <sup>b</sup>	0.15	1.34	-9.73 <sup>c</sup>	-0.40	3.68
	2	3.18	3.43	7.87 <sup>a</sup>	0.25	-2.34	3.36	-2.08 <sup>b</sup>	-0.07	0.67	5.62 <sup>c</sup>	0.18	-1.67
	3	2.61	2.25	-13.70 <sup>a</sup>	-0.36	3.34	2.36	4.55 <sup>b</sup>	0.11	-1.00	-9.59 <sup>c</sup>	-0.25	2.34
	4	3.32	3.25	-2.15 <sup>a</sup>	-0.07	0.67	3.36	3.30 <sup>b</sup>	0.11	-1.00	1.08 <sup>c</sup>	0.04	-0.33
WEMWBS	1	2.07	2.79	34.48 <sup>a</sup>	0.72	-2.77	3.71	33.33 <sup>b</sup>	0.92	-3.60	79.31 <sup>c</sup>	1.64	-6.37
	2	3.21	2.79	-13.33 <sup>a</sup>	-0.42	1.66	2.93	5.13 <sup>b</sup>	0.14	-0.55	-8.89 <sup>c</sup>	-0.28	1.11
	3	3.50	4.07	16.33 <sup>a</sup>	0.57	-2.22	4.36	7.02 <sup>b</sup>	0.29	-1.11	24.49 <sup>c</sup>	0.86	-3.32
	4	3.14	4.07	29.60 <sup>a</sup>	0.93	-3.60	3.43	-15.79 <sup>b</sup>	-0.64	2.49	9.09 <sup>c</sup>	0.29	-1.11