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

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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

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

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

175 athletes. The online delivery enabled the researchers to overcome issues such as geographical
176 challenges between the client and the psychologist and also benefitted from more flexibility if
177 the session time needed to be changed (Cunningham & Turner, 2016).
178 The purpose of the present study was to examine the effects of a brief online REBT
179 programme on the irrational beliefs and mental well-being of canoeing coaches. We aimed to
180 extend the literature concerning the use of CBT-based interventions, and study REBT for the
181 first time, with coaches. In the present study, we also aimed to extend the limited research
182 reporting on the use of online REBT (Cunningham & Turner, 2016). It was hypothesised that
183 a brief online REBT programme would lead to decreases in irrational beliefs and enhanced
184 mental well-being of Canoeing coaches.

185 **Method**

186 **Participants**

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

197 **Design**

198 We adopted an A-B single-case experimental design (SCED) with follow-up (see
199 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 (α = .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.

Analytic Strategy

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

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

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

Results

Participant 1

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

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

Participant 2

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

Mental well-being, for participant 2, decreased from baseline to follow-up (-8.89%), though this was not a reliable change (RCI = 1.11). Wellbeing decreased from baseline to 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

446 also allows for a more tailored intervention with examples used specifically for the
447 individual, rather than a group of participants (Turner et al., 2014b). Turner et al. (2014b)
448 also explained that some irrational beliefs may require more intense, individual work to
449 adequately deal with the irrational beliefs. Therefore, individual sessions may give a greater
450 opportunity for long-term change (Jordana et al., 2020).
451 The coaches appeared to respond positively to the online REBT programme. The
452 social validation data suggested the participants liked the discussion-based approach to the
453 sessions. They explained that they felt it was good to help identify their irrational beliefs and
454 potential causes of their stress. All participants explained that they thought the intervention
455 had been successful, though there were some reservations about committing to this rhetoric
456 as some of the coaches had only recently returned to coaching following the COVID-19
457 lockdown in the UK. Some coaches felt that they needed more time to see the impact on their
458 coaching and if it had helped them, in terms of their effectiveness and dealing with adversity
459 within their job role. This may be reflected in the data, in that a greater dose may have been
460 required to generate longer-term change. However, participants reported that they were able
461 to understand how they can employ REBT principles within their coaching practices.
462 The present study is not without limitations. COVID-19 restricted several areas of
463 interest, and research design, within the present study. For example, the intervention being
464 held online was a product of governmental restrictions due to the pandemic, which meant the
465 intervention could not be delivered face-to-face. However, the findings within the present
466 study showing similar results to previous REBT research within sport (e.g., Turner et al.,
467 2014a), which were delivered face-to-face, are promising. This may suggest that online
468 sessions may be as effective as face-to-face sessions. However, this requires more research to
469 conclude this with confidence. Additionally, the results could include further information
470 which comes with the use of more data collection time points and individualised REBT

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

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

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

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Table 1

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

N.B. [a]Baseline to Intervention mean % change, [b]intervention to follow-up mean % change, [c]baseline to follow-up mean % change.

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