The Effects of a Rational Emotive Behaviour Therapy (REBT) Group Counselling Program on Competitive Anxiety in Turkish Student-Athletes

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Abstract

Aim: The purpose of this study was to develop a Rational Emotive Behaviour Therapy (REBT) based group counselling program for athletes, and then to experimentally test the effects of the program on the competitive anxiety and irrational beliefs of non-western student-athletes.

Methods: The effects of the REBT based program was examined using a 2 x 2 controlled quasi-experimental group design. 22 student-athletes participated in the study (11 in the experimental group and 11 in the control group). The Sport Anxiety Scale-2 was used to assess athlete competitive anxiety. To test the effects of program, descriptive statistics were calculated, and Bayesian repeated-measures ANOVA were conducted. Thematic analysis is used to analyse qualitative data.

Results: Data revealed significant decreases from pre- to post- in irrational beliefs and competitive anxiety in the REBT group compared to the control group.

Conclusions: The findings indicated a positive effect of the REBT based program on the student-athletes' competitive anxiety levels.

Keywords: Competitive Anxiety, Irrational Beliefs, REBT, Student-Athletes.

Data availability: The author confirms that the data supporting the findings of this study are available within the article [and/or] its supplementary materials.

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When unexpected situations occur under high pressure, athletes can respond in extreme ways that can negatively impact upon their performance and emotional states (Meijen et al., 2020). Many psychological factors affect the reactions and the performance of athletes, but two that have appeared in research literature are anxiety and irrational beliefs (Thelwell, Weston, & Greenlees, 2007; Turner, 2016). One approach that has been offered as a potential solution for irrational beliefs and anxiety is Rational Emotive Behaviour Therapy (REBT). The current study seeks assess the effects of REBT on the irrational beliefs and competitive anxiety of student-athletes.

Competitive anxiety

Competitive anxiety has been widely studied in sports psychology literature (e.g., Mellalieu, Hanton & Fletcher, 2006; Wadey & Hanton, 2008). Competitive anxiety is a trait and/or state-like response to a stressful event which includes behavioral responses, physiological arousal, and cognitive appraisals (Ford, Ildefonso, Jones, & Arvinen-Barrow, 2017). Cognitive anxiety can negatively affect performance (Woodman & Hardy, 2003), and competitive anxiety can increase the risk of sports injury (Cagle et al., 2017). Researchers have suggested that lower anxiety levels, less negative thoughts, and higher self-confidence are necessary for higher athletic performance (Gould, Eklund, & Jackson, 1992; Orlick & Partington, 1988). Various psychological interventions have been used and studied to help athletes cope with competitive anxiety. Traditional methods such as psychological skills training (PST) aim to provide self-control to maximize the performance of athletes (Whelan, Mahoney, & Meyers, 1991). The majority of researchers used different mental skill techniques such as cognitive restructuring, relaxation techniques, self-talk, imagery, goal setting to reduce

the intensity of competitive anxiety (Mellalieu et al., 2006; Thomas, Hanton, & Maynard, 2007; Wadey & Hanton, 2008).

Irrational beliefs

Epictetus' maxim "men are not disturbed by things, but by their view of things" helps to describe the fundamental philosophy of REBT (Ellis & Dryden, 2007). Ellis' ABC model [Activating events (A)–Beliefs (B) Consequences (C)] established the principle that beliefs about events are central in determining the range of responses one might have following any given event (Bennett & Turner, 2017). Ellis's ABC is a model of both function and dysfunction. Healthy or adaptive consequences are underpinned by rational beliefs, whereas unhealthy or dysfunctional consequences are underpinned by irrational beliefs. Rational beliefs are flexible, preferential, and pragmatic in the sense that they facilitate outcomes that are consistent with an individual's goals. In contrast, irrational beliefs are rigid, self-defeating, logically incoherent, and inconsistent with empirical reality (Dryden, 2012). The term 'irrational' may be approaches with negative connotations by some people, since it might appear to confer a pejorative judgement upon someone. There are three points to be made in respect of this. Firstly, by using the term 'irrational beliefs', Ellis implied that in the context of an individual's goals and valued directions, irrational beliefs are irrational because they are self-defeating and unlikely to facilitate progress in the desired direction. Secondly, it is the belief, and not the person, that is irrational. Third, irrational beliefs in REBT are defined specifically, and so 'irrational' is not used as a general term.

Speaking to this latter point, Ellis identified four types of irrational beliefs: demandingness (primary belief), awfulizing, low frustration tolerance (or frustration intolerance), and depreciation (or global negative evaluation) which are secondary and derived from the primary (Ellis & Dryden, 2007). Irrational beliefs are illogical, rigid, and are associated with maladaptive emotions and behaviors (Dryden, 2012). The combination of these beliefs is

largely responsible for the cognitive, behavioral, physiological, and emotional problems that, are associated with a variety of forms of psychopathology. The organization of the components within REBT theory has received empirical support through the use of factor and meditational analysis (Bennett & Turner, 2017). İn addition, irrational beliefs have been consistently associated with emotional distress or dysfunction (Banks & Zionts, 2009; Visla et al., 2016), increased emotional and physiological arousal (Harris et al., 2006), increased anxiety (Malouff, Schutte, & McClelland, 1992), and a range of deleterious outcomes in athletes (e.g., Turner et al., 2022). Irrational beliefs underpin dysfunctional emotions, anxiety, and maladaptive behaviors, whereas, rational beliefs enhance functional emotions and adaptive behaviors (Matweychuk, DiGiuseppe, & Gulyayeva 2019). The ABC model is a tool for identifying and helping people when their irrational beliefs are impinging on the choices they make and giving rise to unhelpful emotional and behavioral consequences (DiGuiseppe et al., 2013).

Rational Emotive Behaviour Therapy (REBT) in Sport

REBT is a valuable intervention tool that contributes to the psychological and physiological health of the athletes, and some evidence indicates performance enhancements (Wood, Barker, Turner, & Sheffield, 2018; Davis & Turner, 2020; Nejati et al., 2022). REBT offers a psychotherapeutic model that helps individuals act with optimum functionality (DiGiuseppe, Doyle, Dryden, & Backx, 2013; Wood, Barker, & Turner, 2017). In Ellis' ABCDE Model, emotional and behavioral consequences (C) are the result of activating events (A) and one’s beliefs (B) about the event, not just the event alone. Activating events may be real or imagined, internal or external phenomena. Within the model, the activating event have two components, consisting of the stimulus and the inference made about the stimulus (Ellis & Dryden, 1997). Inferences about events (A) are not seen as solely responsible for emotional, behavioral, or cognitive consequences, rather, it is the beliefs we hold about A that dictates emotional disturbance and dysfunction. As such, REBT distinguishes between inferences (A)

and evaluative beliefs (B), taking the view that inferences need not be challenged or changed, since they are not in themselves intrinsically problematic. However, evaluative beliefs (B) are challenged, when they lead to unhealthy consequences, such as depression and withdrawal (Ellis & Dryden, 1997), for example. REBT helps individuals to recognize the role of their beliefs in shaping their response to the adversities they experience. It clearly places irrational beliefs at the heart of emotional disturbance (Bennett & Turner, 2017). REBT helps clients to understand the ABC framework and then helps them to dispute the irrational beliefs (D) and develop alternative rational beliefs (E), giving rise to emotions and behaviors (E) (David, 2014; Ellis & Dryden, 1997). It is important to emphasize that REBT is not about thinking positively. If an emotional C is anxiety, the more helpful alternative is not happiness. The realistic emotional goal would be healthy concern, rather than happiness (Bennett & Turner, 2017).

Psychological skills training (PST) is a frequently used cognitive-behavioral approach in the field of sport, often aimed at increasing the performance of the individual by optimising the self-regulation process (Hardy, Jones, & Gould, 1996). Although it is a traditional psychotherapy method, REBT as a branch of Cognitive Behavioral Therapy (CBT), has been used in the field of sport in recent years for performance anxiety, maladaptive thoughts, self-determined motivation, self-efficacy, cognitive appraisal, achievement, irrational beliefs and sport performance (Chrysidis, Turner, & Wood, 2020; Evans, Turner, Pickering, & Powditch, 2018; Ha & Chang, 2017; Sille, Turner, & Eubank, 2020; Wood, Barker, & Turner, 2017; Turner & Barker, 2014; Turner, Kirkham, & Wood, 2018; Turner, Slater, & Barker, 2014; Yamauchi & Murakoshi, 2001). REBT is rapidly growing in the field of sport, and it has become a popular intervention tool among researchers (Mesagno et al., 2020; Jordana, Turner, Ramis, & Torregrossa, 2020; Wood et al., 2019) and practitioners (Turner & Bennett, 2017). A detailed account of all sport-based research is perhaps beyond the remit of this present paper, but a systematic review by Jordana and colleagues (2020) indicates that REBT is useful as a one-to-

one or group-based approach to sport psychology, with most promising effects occurring for competitive anxiety. Of the extant research, Vertopolous and Turner (2017) is most relevant to the present study due to the focus upon student-athletes, whereby the effects of five group-level REBT education sessions were shown to lead to reductions in irrational beliefs and increases in rational beliefs, and finding bolstered by social validation data.

Present study

In the present study, we applied REBT to reduce the irrational beliefs and competitive anxiety of Turkish student-athletes. It is imperative to consider cultural variances when applying REBT techniques such as empirical, logical and pragmatic questioning of the ABCDE process (Turner & Barker, 2013). The majority of studies applying REBT with athletes have sampled from the U.K. or the U.S.A. (Turner, 2014). But there are some studies that sample non-western athletes (e.g., Chotpitayasunondh & Turner, 2019) and there is some evidence that REBT is effective in non-Western athlete samples. For example, the positive effects of REBT have been reported with a male Olympic medal winning table-tennis player from Hong Kong (Si & Lee, 2008), Japanese female high-school soft-ball players (Yamauchi, & Murakoshi, 2001), and a 19-year-old professional Turkish basketball player (Artiran, 2017). Of particular note, Deen, Turner, and Wong (2017) used a single-case multiple-baseline across-participants design to examine the efficacy of REBT in decreasing irrational beliefs, and increasing resilient qualities in five elite squash players from Malaysia. This study used five one-to-one REBT sessions, and four homework assignments between sessions. Results revealed that REBT reduced irrational beliefs significantly in all athletes, and raised resilient qualities significantly in some athletes.

Most of the research that has emerged in non-Western contexts are single case studies or are conducted within homogeneous groups of individual sport athletes. This present study aims to build upon this work by applying a more rigorous group-based design to test the effects

of REBT in a non-Western athlete sample. In the present study, we examine the effects of an eight-session REBT-based programme compared to a control group on the irrational beliefs and competitive anxiety of Turkish student-athletes. Student-athletes face many challenges due to their dual roles as both athletes and students (Turner et al., 2022). They experience performance failure, injuries, strained relationships with coaches and teammates, abuse, and mental health problems like other athletes (Fletcher & Hanton, 2003; Mellalieu, Shearer & Shearer, 2013; Papathomas, & Lavallee, 2012; Stirling & Kerr, 2008). In addition to these stress factors, they experience anxiety about being successful academically and may be exposed to pressure due to their dual roles (Wilson & Pritchard, 2005). As such, student-athletes are a worthy and important focus for REBT work. It is hypothesized that Turkish student-athletes receiving REBT will report reductions in irrational beliefs and competitive anxiety compared to those in the control group.

Methods

Design of the Study Procedure

In the present study a 2 x 2 controlled quasi-experimental group design with experimental and control groups was used. An 8-session REBT-based group program was applied to the experimental group with the purpose of reducing irrational beliefs and competitive anxiety. In line with contemporary guidelines (Turner, 2023), members of the REBT group were made aware of their emotions, defined emotions, understood the relationships between thoughts, emotions, and behaviors, explored how their thoughts and emotions affect their behaviour, learned about their irrational beliefs within Ellis' ABC model, and developed alternative rational beliefs in place of irrational beliefs. Informed consent was obtained, and ethical approval was granted before all data collection. Participants met with the practitioner once per week for eight consecutive weeks for a 90-minute session of REBT. Data were collected before (pre-test) and after (post-test) the intervention.

Between-session homework assignments were administered each week, especially to work on anxiety and reinforce session activities, mostly to enable members to realize their irrational beliefs within Ellis' ABC model and to support members to develop alternative rational beliefs in place of irrational beliefs. To do this, we used the 'Emotion and Thought Tracking Form', 'Sample of Irrational Beliefs Form' and 'Alternative Beliefs Development Form'. Participants were helped to understand the concept of the B-C connection. At the beginning of each session, the homework assignments were discussed to unsure adherence to the tasks and to assess independent use of the ABC model.

The first author is a seasoned counselling psychologist working with athletes and has basic REBT education. The second author is an experienced professor working with Cognitive Behavioral Therapies (CBTs) and REBT in academic contexts. The first author, the practitioner, videotaped each session during the group process and received weekly supervision from the second author of the study.

Participants

The participants of the research consisted of student-athletes studying at Anadolu University Sports Faculty in Turkey. In the process of identifying the participating student-athletes, preliminary interviews were conducted with 76 students who replied to an announcement made in Anadolu University Sports Faculty. Additionally, the brief irrational beliefs scale (Türküm, 2003) was administered and participants who scored high on this scale and indicated competitive anxiety were included in the study group in line with the recommendations of Turner and Barker (2014). However, as one athlete from the experimental group dropped out at the beginning of the study, data analyses were conducted for the responses of 22 participants in total. These 22 participants were assigned to the experiment REBT group (N = 11) or waiting list (control) group (N= 11). Due to the dual role of student-athletes, it was not possible to conduct full randomization, however gender and sport type (individual or team)

were considered. Student-athletes were aged between 18 and 24 (M = 19.9, SD = 1.5) years and all had competed at the top of their sport for between 3 and 8 years (M = 4.7 years, SD = 1.6 years). Participants were 14 females and 8 males from team sports (7 football, 7 volleyball, 1 basketball, 1 handball), and individual sports (3 athletics, 1 archery, 2 taekwondo). At the time of the group process, six of the athletes continued to participate in international competitions and 16 athletes were competitive at national level.

Social Validation

Social validation procedures are typical in REBT research in sport (Jordana et al., 2020), and it is suggested that social validation is undertaken at the end of statistical analyses (Page & Thelwell, 2013). After the main quantitative analyses were conducted, a focus group interview was conducted one month after the program ended. The recorded focus group interview lasted for fifty minutes. In the interview sessions, the athletes were asked what factors helped them overcome their anxiety during the group process. Statistics may not fully cover the efficacy of interventions, and so social validation gives richer data about crucial intervention outcomes (Page & Thelwell, 2013).

Measures

The Sport Anxiety Scale-2. The Sport Anxiety Scale-2 (SAS-2) was used to measure state anxiety (Smith, Smoll, Cumming, & Grossbard, 2006). The SAS-2 was selected as it was developed for assessing intervention efficacy at a state level. The SAS-2 consists of 15-items and has three subscales; somatic-anxiety, cognitive-anxiety, and concentration disruption, and these subscales can be used independently. SAS-2 demonstrates acceptable internal consistency, test-retest reliability, and construct validity (Smith et al., 2006). The Turkish adaptation of the scale was conducted by Akyol, Altıntaş, Sezer, and Aşçı (2016). The three-factor structure of the Turkish version is similar to the original scale. Reliability coefficients vary between 0.71 and 0.80. The Turkish version of scale was used in the present study.

Brief Irrational Beliefs Scale. The brief irrational beliefs scale (IBS) is a 15-item five-point Likert-type scale developed by Türküm (2003) to identify irrational beliefs (e.g., “Promises made must be kept”, “Other people have to respect me”). Cronbach's Alpha coefficient (.75) and test-retest correlation (.81) and factor analysis indicate good validity and reliability. Validity studies were completed by using test anxiety, depression and other beliefs scales, and item analysis. It was revealed that IBS has efficient psychometric properties for use in the field of psychology. The Cronbach's Alpha coefficient was .68 in the present study.

Data analysis

Bayesian repeated-measures ANOVA for irrational beliefs and anxiety were used to identify the effects of REBT at between and within-group levels. For Bayesian analysis, the JASP statistics program (JASP Team, 2018) and R package program (R Core Team, 2013) BayesFactor package (Morey, Rouder, Jamil, & Morey, 2015) were used. The default prior distributions are used in JASP, that is Cauchy (0.7) priors (Rouder, et al., 2009). We preferred Bayesian statistics over classical statistics because the Bayesian approach has many advantages over classical statistics. It is recommended to use Bayesian instead of classical statistics in small samples. Bayesian is reliable, gives more accurate results, and the type 1 error rate is very low. Bayesian analyses draw more valid and profound inferences about our research question, which are not possible in the frequentist framework (Kruschke, Aguinis, & Joo, 2012; Wagenmakers et al., 2018). The main assumption of ANOVA were met, and the residuals are normally distributed. All variances were equal.

The focus group interview was transcribed by the researcher and thematic analysis was used to assess the focus group interview. Since parametric tests were used in the study, the data were checked, and descriptive statistics are presented in Table 1. As seen in the table, the data are normally distributed.

Table 1. Descriptive Statistics for Groups

Variables	Groups	N	Mean	Std. D	Variance	Skewness	Kurtosis
Anxiety pre-test	REBT group	11	37.72	7.17	51.41	-0.18	0.01
Anxiety pre-test	Control group	11	37.27	5.58	31.21	-0.19	-1.14
Anxiety post-test	REBT group	11	26	6.54	42.80	-0.72	-0.34
Anxiety post-test	Control group	11	33.90	6.81	46.49	0.25	-1.39
Irrational Belief pre-test	REBT group	11	56.81	5.77	33.36	-0.26	-1.61
Irrational Belief pre-test	Control group	11	55.45	5.22	27.27	-0.35	-1.27
Irrational Belief post-test	REBT group	11	47.36	6.16	38.05	0.16	-0.92
Irrational Belief post-test	Control group	11	54.36	4.01	16.05	-0.22	-1.60

Results

Irrational Beliefs

We applied Bayesian data analysis in the form of a 2 (Time) x 2 (Group) repeated-measures ANOVA*. Bayes factors assume equal prior model probabilities for all models. The results of Bayesian ANOVA are presented in Table 2, showing that the data are 294.743 times more likely under the “Alternative Hypothesis” that assumes an effect of time for main effects.

Time + Group effects (interaction effect) are 230.401 times more likely under the "Alternative Hypothesis'' than Null Hypothesis. According to Jeffreys (1961), this can be considered Extreme Evidence for H1 (time model and Time + Group model). For ANOVA models, the main component of a post hoc test are t-tests on all pairwise combinations of a predictor's levels.

*Table 2. Summary of 2*2 Bayesian Repeated-Measures ANOVA For Irrational Beliefs*

Models	**P(M)**	**P(M|data)**	**BF_M**	**BF_{10}**	**error %**
Null model (incl. subject)	0.200	6.48	2.59	1.000	
Time+ Group + Time ✻ Group	0.200	1.000	11712.56	1.54	3.277
Time	0.200	1.91	7.64	294.743	0.674
Time + Group	0.200	1.49	5.97	230.401	1.714

*The frequentist repeated-measures ANOVA revealed that both the main effect of Irrational Beliefs ($F(1, 20) = 23.26$, $p = .001$) and the interaction of RM Factor 1 ✻ group ($F(1, 20) = 7.146$, $p = .015$) were significant.

To analyse the between-group differences, Bayesian independent t-tests were conducted. Irrational beliefs pre-test showed that BF10 is not 0.434 in favour of the models that include REBT group or control group however Bayes factor BF10 is 8.700 in favour of the REBT group over control group for irrational beliefs post-test and this is moderate evidence. Irrational beliefs pre-intervention results showed that the Bayes factor provides anecdotal evidence in favour of the control group, that is, in favour of the null hypothesis (BF10 = 0.434), and the 95% credible interval with a posterior median of 0.166 and a range of -0.519, 0.907. Post-test Bayes factors support the alternative hypothesis with moderate evidence (BF10 = 8.7), and in the 95% credible interval with a posterior median of -1.084 and a range of -2.058, -0.192. The experimental group showed a significant reduction in irrational beliefs post-test and no significant changes were found for the control group.

Analysis of irrational beliefs showed a significant reduction from pre-test to post-test. Bayes factor BF10 is 12420.542 which is in favour of the post-test over pre-test in REBT group and is extreme evidence for the H1 hypothesis according to Jeffrey (1998) with the 95% credible interval with a posterior median of 2.762 and a range of 1.380, 4.318. Control group analysis indicated no significant change from pre- to post irrational beliefs, with a Bayes factor BF10 of 0.803.

Anxiety

The results of Bayesian ANOVA are presented in Table 3 showing that the data are 203387 times more likely under the "Alternative Hypothesis" that assumes an effect of time for main effects. Time + Group effects (interaction effect) are also 180378 times more likely under the "Alternative Hypothesis'' than Null Hypothesis. According to Jeffreys (1961) this can be considered Extreme Evidence for H1 (time model and Time + Group model). For ANOVA models, the main component of a post hoc test are t-tests on all pairwise combinations of a predictor's level.

*Table 3. Summary of 2*2 Bayesian Repeated-Measures ANOVA for Anxiety*

Models	**P(M)**	**P(M|data)**	**BF_M**	**BF_{10}**	**error %**
Null model (incl. subject)	0.200	8.631	0.003	1.000	
Time+ Group + Time ✻ Group	0.200	0.667	8.021	773.067	1.965
Time	0.200	0.176	0.852	203.387	0.785
Time + Group	0.200	0.156	0.738	180.378	1.724

**The frequentist repeated-measures ANOVA revealed that both the main effect of Irrational Beliefs (*F (*1, 20*) = 83,99, p* = .001) and the interaction of RM Factor 1 ✻ group (*F(*1, 20*)* = 52,83, *p* = .001) were significant.

The results showed that for the Anxiety pre-test, Bayes factor BF10 is not 0.389 in favour of the models that include REBT group or control group. Bayes factor BF10 is 4.623 in favour of the REBT group over the control group for Anxiety post-test, and this is moderate evidence according to Jeffrey (1998). Anxiety pre-intervention scores showed that the Bayes factor provides anecdotal evidence in favour of the control group, that is, in favour of the null hypothesis (BF10 = 0.389), and the 95% credible interval with a posterior median of 0.047 and a range of -0.65, -0.76. For the post-intervention phase, Bayes factors support the alternative hypothesis with moderate evidence (BF10 = 4.623), and in the 95% credible interval with a posterior median of -0.927 and a range of -1.87, -0.085. The REBT group showed a significant reduction in Anxiety post-test, and no significant change was found for the control group.

Anxiety results showed that REBT group members experienced a reduction from pre-test to post-test. Bayes factor BF10 is 132.854 in favour of the post-test over pre-test in the REBT group and this is extreme evidence for the H1 hypothesis according to Jeffrey (1998) with the 95% credible interval with a posterior median of 1.461 and a range of 0.560, 2.447. Control group analysis indicated no significant change from pre-to post for Anxiety with a Bayes factor BF10 of 0.688.

Social Validation

Qualitative data were analysed following guidelines by Braune & Clarke (2014). Three themes were collated from the interview transcripts and are presented below. The first theme identified was “changing the way of thinking”, the second theme was “therapeutic effects of group counselling” and last theme was “the normalization of anxiety”.

Changing The Way Of Thinking. In the theme of changing way of thinking, the athletes said that in cases of mistakes and failures they made in performance or in general life, they tended to blame themselves and to look for reasons outside of themselves. They stated that they had distorted and irrational thoughts about their performance. They emphasized that

having a more rational point developed through the REBT program view has helped them with this. For example, a female volleyball player stated that she was worried after she missed a shot and fell physically. She emphasized that if she failed, the coach would negatively think things about her, and she would lose her starting role. She stated that after the REBT program, even if she makes mistakes, she thinks it is a growth opportunity and that missing a shot is not the end of the world.

Therapeutic Effects of Group Counselling. The accepting and supportive nature of the group REBT environment reportedly helped the participants cope with their anxiety. The athletes stated that they looked forward to coming to the sessions after their performances each week. Thus, they received support from the individuals in the group and from the group leader.

Normalization of Anxiety. Participants held the belief that high levels of anxiety affected only them and not their opponents. They tended to think that their opponents were more comfortable than them. But through the REBT programme participants came to understand that many athletes experience a certain amount of anxiety pre-competition. Athletes stated that a fair amount of anxiety actually helps their performance, whereas very high anxiety inhibits their performance.

There was also an athlete who did not have a significant decrease in anxiety in the experimental group. This athlete stated that the environmental factors were still there (such as the pressures and mobbing from her coach and the high expectations from club managers).

Discussion

The main aim of the current study was to examine the effects of a group-level REBT-based program on the irrational beliefs and competitive anxiety of Turkish (non-western) student-athletes. It was hypothesized that REBT would decrease participants' irrational beliefs and competitive anxiety. compared to a control group who did not receive REBT. The results from the Bayesian analyses of data revealed that the REBT program was effective in decreasing

the irrational beliefs in the experiment group, but there was no change in the control group. These findings echo the results from the majority of extant research that has applied REBT with athletes (Jordana et al., 2020). This study also demonstrated reductions in competitive anxiety following the REBT program. The analyses showed that the participants in the REBT group reported decreased competitive anxiety after the intervention, whereas participants in the control group reported no such change.

One of the basic assumptions of Rational Emotive Behavioral Therapy is that irrational beliefs underpin emotional dysfunction (Kirkby, 1994), including anxiety (MacInnes, 2003), and finding consistent in athlete samples (Turner, Carrington, & Miller, 2019) and student-athlete samples (Turner et al., 2022). It has been identified that high anxiety levels in young athletes result in quitting sports, burnout, and experiencing different levels of negative emotions (Barker et al., 2013). REBT is effective in reducing anxiety both in adults and youths (Gonzalez et al., 2004; Sporrle & Forsterling, 2007) and in athletes and non-athletes (Elko & Ostrow, 1991). Indeed, the majority of REBT research sport indicates that REBT is particularly effective in bringing about reductions in anxiety (Jordana et al., 2020). Anxiety has also been associated with performance in sports research, whereby high anxiety is a negative condition that reduces performance (Gould, Horn, & Spreeman, 1983; Woodman & Hardy, 2001).

The misplaced notion that the winning in sports is everything can yield irrational beliefs in those engaged within sport (King et al., 2022). The generation and maintenance of irrational beliefs in athletes can results in the development, maintenance, and worsening of dysfunctional emotions. On the other hand, thinking rationally is an important factor to be successful (Dryden & Branch, 2008). Irrational beliefs may increase anxiety with two mechanisms. First, irrational beliefs may cause perceptions of events to be negatively distorted or too demanding in comparison to the person's coping mechanisms (Dryden & Branch, 2008). Indeed, greater irrational beliefs have been found to be related to threat appraisals in past research (Chadha et

al., 2019; Mansell, 2021). Irrational demands may render failure too threatening, increasing debilitating anxiety due to the perceived severity of the consequences of underperformance (Goldfried & Sobocinski, 1975). Athletes are in competitive sport which is an outcome-focused environment that may shift from rational beliefs to irrational beliefs (Botterill, 2005). Athletes could have a strong preference to succeed, but applying some external pressure to the athlete can transform the desire into a need, making motivation less self-determined (Turner et al., 2022), and exacerbating anxiety levels (Turner et al., 2019)

REBT helps individuals to control their emotions by shaping their way of thinking, thereby enabling them to reduce their anxiety (Turner & Barker, 2013; Yamauchi & Murakoshi, 2001). As seen in the present study, the athletes' beliefs and thinking patterns became more rational through engaging with REBT. Thus, the competitive anxiety caused by the distorted thoughts of the athletes about themselves, and their performance decreased (Dryden & Branch, 2008; Sporrle & Forsterling, 2007). In a similar study, Turner & Barker (2013) stated that the decrease in irrational beliefs was followed by a decrease in cognitive anxiety in their study with elite cricket players. Social validation data indicated that changes in the athletes' perspectives led to changes in how they think about their own performance. A more logical point of view led them to approach events with a more open mind, which is not overshadowed by negative emotions. Some athletes stated that even if they encounter negative emotions, they do not allow this to hinder them during the competition. Thus, thanks to REBT training, they can perform with more relaxed way and with self-confidence. Indeed, recent research has shown that irrational beliefs are negatively associated with self-confidence (Mansell & Turner, 2022) and that REBT can be used to enhance athlete self-efficacy (Chrysidis et al., 2020).

It was a mutually beneficial process for both individual and team athletes that were together in the REBT program. For example, when an individual athlete said that he was sometimes very isolated in his sport and that he was bored and lonely by himself, he stated that

he had an important role in the team's loss when the team athlete sometimes missed very important goals. He said that the success of individual athletes is mostly in their own hands, which is an important advantage. We observed that the presence of individuals from both types of sports in the group process helped the athletes' thoughts about their performance to sit in a wider and more logical perspective. We think that the presence of both types of sports in the group process will have a positive therapeutic effect.

REBT using a mixture of information transmission, discussion activities, group-level homework setting and reviewing, and group goal setting (Dryden, 1996). As stated in the second theme of social validation data, therapeutic effects of group REBT were also a key factor for change. In the process of group REBT, an effective therapeutic group may provide therapeutic forces such as belonging to the group, confidence, participation in the group, taking responsibility, openness, acceptance by the group, group members and feedback, all of which are critical in terms of self-disclosure of the clients (Ülker Tümlü & Acar, 2012; Ülker Tümlü, Akdoğan & Türküm, 2017). Group-REBT is time and cost-effective, and participants learn from one another and support each other (Ehde & Jensen, 2010). We recommend using well designed group REBT for these advantages.

Conclusion

In this study, the aim was to develop a group REBT program and to test the effects of this program on the irrational beliefs and competitive anxiety of Turkish (non-western) student-athletes. The 8-week REBT program applied within the scope of this research was found to be effective in reducing the irrational beliefs and competitive anxiety of student-athletes, when compared to a control group who received no REBT. While the irrational beliefs and anxiety scores of the experimental group decreased as a result of REBT, there was no such change in the control group. As a result, it was observed that cognitive anxiety decreased significantly as a result of the pre-test and post-test of the experimental group. As emphasized in the focus

group results, although the athletes stated that the group process and other athletes helped them, the basis of the change was the change in their way of thinking. They emphasized that when irrational beliefs about themselves and their performance were replaced by rational beliefs, their competitive anxiety decreased, and they generally approached competitive events more positively. The current study contributes to the extant literature in sport that reports the benefits of REBT for athlete anxiety (Jordana et al., 2020), adding to the support for group based REBT (e.g., Vertopolous & Turner, 2017), and extends research by recruiting non-western athletes.

There are some limitations of the present study that could be addressed in future research. First, full randomization was not achieved, but should be striven for in intervention research. Second, although it is emphasized that irrational beliefs and competitive anxiety changed together, how this process takes place needs to be established via longitudinal and more complex multidisciplinary studies. Thus, the way irrational beliefs affect anxiety can be examined in a more detailed and in-depth analysis. In future studies, the relationships between irrational beliefs, anxiety and performance can be examined by experimental mediation modelling. On the other hand, although REBT interventions are effective, it would be useful to consider the factors in the group REBT process. Especially a close and collaborative therapeutic relationship with the group members which could drive some changes in measured variables. One of the most challenging factors for the leader in the group process is to reveal basic and secondary irrational beliefs. In the group process, it may be necessary to devote more time to this area, especially when different personalities and cultures are involved. Although we conducted an REBT-based group intervention, group leaders must understand and manage stages of development, cohesiveness, norms and conflicts in order to manage the group process effectively (Turner et al., 2020).

Although the present study does reveal some positive effects of using REBT for anxiety, the continued existence of negative conditions around the athletes may mean that anxiety is

perpetuated and maintained. As one athlete stated in social validation data, ongoing strong adversity such as mobbing (unfounded and often critique and devaluation of performance from coaches, excessive demands (forcing) during competitions, unethical behaviours by club managers) can deter development of athletes. For these reasons, coaches and sports management should be trained on athlete mental health and be skilled in REBT and other psychotherapeutic approaches.

Acknowledgements

The authors appreciate the study participants.

Conflict of interest

The authors declared that there is no conflict of interest with regards to authorship.

Author Contributions

First author conceived the research idea, analysed the data, structured, drafted the and edited the manuscript. Second author made comments on the final version and gave weekly supervision during the group process. The third author was not involved in the development or execution of the study but was added to the authorship team in order to assist write-up in the English language.

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