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Running Head: REPDMS WITH GREEK YOUTH ATHLETES

Examining the effectiveness of a Rational Emotive Personal-Disclosure Mutual-Sharing (REPDMS) intervention on the irrational beliefs and rational beliefs of Greek adolescent athletes.

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Abstract

The present study examined the effects of a Rational Emotive Personal-Disclosure Mutual-Sharing (REPDMS) intervention on the rational and irrational beliefs of a group of Greek adolescent athletes that had previously participated in a Rational Emotive Behavior Therapy (REBT) educational workshop. Measurements were taken before REBT workshops (baseline), during the REBT workshop period, and after the REPDMS session (post-intervention). Further, a comparison group received REBT education, but did not receive REPDMS, allowing the between-subjects comparison between participants who received REPDMS and participants who did not. Findings support the hypotheses that REPDMS has positive effects on further reducing irrational beliefs, enhancing rational beliefs, and prolonging the duration of these positive effects, over and above REBT education alone. Qualitative inspection of the REPDMS transcript also revealed participant perceptions of REBT, and served to stimulate critical author reflections on REPDMS.

Keywords: PDMS; REBT; REPDMS; intervention; applied sport psychology; single-case design

Examining the effectiveness of a Rational Emotive Personal-Disclosure Mutual-Sharing (REPDMS) intervention on the irrational beliefs and rational beliefs of Greek adolescent athletes.

Founded by Dr. Albert Ellis in the 1950s (Ellis, 1958), Rational Emotive Behavior Therapy (REBT) is considered to be the first cognitive-behavioral approach in psychotherapy. REBT is an established form of psychological intervention and its effectiveness is supported across numerous diverse clinical and non-clinical populations (David, Lynn, & Ellis, 2010). REBT holds that people are not disturbed by events, but by the view they take of events. In REBT, dysfunctional emotions (e.g., emotions that hinder well-being and goal achievement) are the product of irrational beliefs in response to actual or inferred events. Functional emotions (e.g., emotions that facilitate well-being and goal achievement) are the product of rational beliefs in response to actual or inferred events. This proposition is captured by an ABCDE framework where events (or inferences) are represented by A, irrational and rational beliefs are reflected by B, and consequent emotions and behaviors are reflected by C. For example, on approach to a competition (A) an athlete's anxiety (C) could be the product of an irrational belief (B) that "I want to succeed, and therefore I must". The rigid demand ("I must") produces emotional disturbance (anxiety), leading to dysfunctional behaviors such as withdrawal and avoidance (Dryden & Branch, 2008). The chief goal of REBT is to help people dispute (D) their irrational beliefs, and strengthen their rational beliefs, to promote more functional emotional and behavioral responding (E; Ellis & Dryden, 1997).

In REBT, rational beliefs are defined as beliefs that are flexible, non-extreme, and logical (i.e., consistent with reality), and in contrast, irrational beliefs are rigid, extreme, and illogical (i.e., inconsistent with reality). Specifically, there are four types

of rational and irrational beliefs. Rational beliefs comprise a primary belief (preferences) and three secondary beliefs (anti-awfulizing, high frustration tolerance, and self/other acceptance) that are derived from the primary belief. Irrational beliefs comprise a primary belief (demandingness) and three secondary beliefs (awfulizing, low frustration tolerance, and self/other depreciation) that are derived from the primary belief. The specific focus on these rational and irrational beliefs helps distinguish REBT from other cognitive behavioral therapies (see Turner & Barker, 2014, for examples of each belief). For example, a popular technique used in sport psychology is self-talk (e.g., Bunker, Williams, & Zinsser, 1993), where practitioners may help athletes to challenge and replace an inference such as “the coach has dropped me because she doesn’t like me,” which in REBT terms would be the ‘A’. However, in REBT this inference would be assumed true, and instead, the belief “I want the coach to like me and therefore she must, and being dropped shows that I am a useless person” about A would be challenged and replaced with the rational belief “I want the coach to like me, but that does not mean that she must, and being dropped does not mean that I am a useless person”.

REBT has been advocated for use with athletes (Zinsser, Bunker, & Williams, 2010), and is typically applied with athletes using one-to-one counseling-style sessions (e.g., Turner & Barker, 2013). Using REBT, athletes’ irrational beliefs are recognized and disputed, while rational beliefs are promoted and strengthened (e.g., Elko & Ostrow, 1991; Marlow, 2009; Turner & Barker, 2013). In the disputation of irrational and rational beliefs, REBT employs three different arguments, namely empirical, logical, and pragmatic disputations (see Turner & Barker, 2013 for a more detailed explanation of the ABCDE process), which examine the rationality of the beliefs and the degree to which they help or hinder the person’s well-being and/or

goal attainment (Dryden & Branch, 2008). In addition to one-to-one methods of using REBT, extant literature has also advocated the use of group workshops that provide an educational style of delivery using information transmission and interactive activities (e.g., Bernard, 1985; Turner, Slater, & Barker, 2014, 2015). Group educational REBT has been found to be effective in reducing irrational beliefs and psychological dysfunction (Engels, Garnefski, & Diekstra, 1993), but researchers have indicated that such positive effects can be short-term (Turner et al., 2014). There is a need for further studies that employ group educational REBT to refine the methods by which athletes are engaged in REBT, and to examine the effects of novel applications of group-REBT (see Turner, 2016, for a review).

In therapeutic environments, group-REBT sessions are typical, and usually involve guiding a group through REBT using a mixture of information transmission, discussion activities, group-level homework setting and reviewing, and group goal-setting (Dryden, 1996). Group-REBT has the benefit of being time and cost effective, and gives participants an opportunity to learn from one another and support each other through the process (Ehde & Jensen, 2010). In addition, REBT educational programmes, such as Rational Emotive Education (REE), include sharing as part of the activities delivered with participants (e.g., Knaus, 2006). However, the group-sharing aspect of group-REBT has not been explicitly assessed in past research, and its application with athletes has not been reported in literature. Therefore, this study examines a novel application of group-REBT with athletes in the form of Personal-Disclosure Mutual-Sharing (PDMS) to supplement and support REBT. PDMS was originally introduced to applied sport psychology as an approach to team building in which athletes disclose unknown facts and stories about themselves to their teammates (Dunn & Holt, 2004; Holt & Dunn, 2006; Mohammed & Dumville, 2001).

PDMS contributes to the creation of common beliefs and understandings among participants through the empathetic communication of personal information (Ostroff, Kinicki, & Tamkins, 2003; Windsor, Barker, & McCarthy, 2011). There is growing evidence in sport for the use of PDMS to enhance group dynamics marked by increased cohesion (Windsor, Barker, & McCarthy, 2011), and social identification (Evans, Slater, Turner, & Barker, 2013). Little research has investigated the effects of PDMS on personal beliefs, but one study suggests that PDMS may facilitate self-awareness and self-understanding (Dunn & Holt, 2004; Holt & Dunn, 2006).

Rational Emotive Personal-Disclosure Mutual-Sharing (REPDMS) applies REBT principles to PDMS by having athletes share their experiences of using the ABCDE process using a real issue, including precisely what their irrational and rational beliefs were, and how the disputation phase was operationalized. Importantly, participants receive group educational REBT for a period of time prior to REPDMS thus providing them with the basic knowledge and skills to apply REBT independently. The present study examines the application and effects of REPDMS on the irrational and rational beliefs of youth Greek athletes. Both group educational REBT and PDMS have been applied with youth athletes in past research (e.g., Evans et al., 2013; Turner et al., 2015), but to the authors' knowledge never in published research have the two approaches been complimented by each other. In addition, the present study applies PDMS for individual gain (personal irrational beliefs), rather than for group-level benefits (e.g., cohesion), building on little extant research (e.g., Holt & Dunn, 2006). PDMS is known as a team building intervention, where individuals publicly disclose previously unknown personal stories and information (Hardy & Crace, 1997; Holt & Dunn, 2006; Yukleson, 2010), and in which a situation or issue is consciously and verbally presented with a view to gaining resolution

through interpersonal interaction (Holt & Dunn, 2006; Olarte, 2003). Therefore, rather than solely impact upon group outcomes, that PDMS may also influence personal constructs such as beliefs, and allow deeper understanding of the self (e.g., Dunn & Holt, 2004; Holt & Dunn, 2006). Indeed, Holt and Dunn (2006) found that some participants reported greater rationality as a result of PDMS, with one athlete stating that PDMS “made me realize that there’s more to life than soccer. That really affected me . . . there’s so much more to life than soccer” and another stating “It just makes it very clear and puts it into perspective and you go, ‘OK, it’s just a game and whatever, and I’m here to do my best’” (p. 357). The notion that PDMS can influence personal constructs such as beliefs is based on circumstantial evidence here, but indicates that PDMS can influence personal beliefs and attitudes as well as group dynamics variables. Therefore, although there are no previous published data to draw on regarding the effects of REPDMS, it is anticipated that the addition of a PDMS component will bolster the effects of group educational REBT for three chief reasons.

First, REPDMS provides the youth athletes with an opportunity to share their applied understanding of the REBT process, and reciprocally be party to the experiences of other youth athletes. Second, in preparing for the REPDMS session the athletes are required to independently apply REBT to a real issue, thus facilitating the transfer of group educational knowledge to the real world. Third, because past research has reported maintained reductions in irrational beliefs using multi-group REBT education sessions (Turner et al., 2015), REPDMS may reinforce the messages communicated via REBT education. Therefore, it is hypothesized that an REPDMS intervention will decrease irrational beliefs and increase rational beliefs above and beyond the effects produced by group educational REBT.

Method

Participants

Participants were 20 Greek male adolescent athletes ($M_{age} = 16.35$; $SD = 1.00$), with 2 to 10 years of competitive experience in their sport ($M = 2.46$; $SD = 2.8$). Participants were football athletes ($N = 16$), tennis players ($N = 2$), a sailor, and a fencer. Participants represented all athletes in a sport talent programme and were all pupils at the same school in Athens Greece. Convenience sampling was used to recruit participants, whereby information about the study was distributed to all sport talent programme athletes, and participants volunteered to take part. The school was informed about the aims and procedures of the study, giving permission for the implementation of the study. Ethical approval was granted by the University, and informed consent and minor assent was gained from participants and their guardians prior to data collection.

Experimental Design

The study employed a single-case AB and ABC between-groups design (Barker, McCarthy, Jones, & Moran, 2011). More specifically, participants were randomly divided in two groups by flipping a coin, where both groups (REBT+REPDMS group, $N = 9$; and REBT only group, $N = 11$) received REBT education workshops, but only the REBT+REPDMS group received REPDMS. To be clear, the REBT+REPDMS group received four 40-minute REBT education workshops, followed one week after by an REPDMS session (ABC single-case design). The REBT only group received only the four 40-minute REBT education workshops (AB single-case design). Thus, it was possible to assess the effects of REPDMS over and above the effects of REBT education. Data were collected over a twelve-week period through baseline (four weeks), REBT education (four weeks),

REPDMS vs. no REPDMS (one week), and post-intervention (three weeks) phases. Baseline data revealed a sufficient level of irrational beliefs to warrant REBT intervention (REBT+REPDMS group, $M = 2.89$, $SD = .06$; REBT only group, $M = 2.91$, $SD = .10$) based on reported average norms ($M = 2.64$) for the Shortened General Attitudes and Beliefs Scale (SGABS; Lindner, Kirkby, Wertheim, & Birch, 1999; MacInnes, 2003), and guidelines for using REBT with athletes ($M = 2.51$; Turner & Barker, 2014). In other words, participants in both groups reported above the average norms for irrational beliefs, and therefore were eligible to take part in the study.

Measures

Irrational Beliefs. The Shortened General Attitudes and Beliefs Scale (SGABS; Lindner et al., 1999) comprises 26 items forming eight subscales. Total irrational beliefs (22 items) is made up of self-depreciation (4 items; e.g., If important people dislike me, it is because I am an unlikable, bad person), other-depreciation (3 items; e.g., If people treat me without respect, it goes to show how bad they really are), need for achievement (4 items; e.g., It's unbearable to fail at important things, and I can't stand not succeeding at them), need for approval (3 items; e.g., When people who I want to like me disapprove of me or reject me, I can't bear their disliking me), need for comfort (4 items; e.g., It's unbearable being uncomfortable, tense, or nervous, and I can't stand it when I am), and demand for fairness (4 items; e.g., It is awful and terrible to be treated unfairly by people in my life). A rational beliefs (4 items; e.g., I have worth as a person even if I do not perform well at tasks that are important to me) subscale is also included. For reasons of brevity, only total irrational beliefs and rational beliefs were included in the current study. Participants were asked to indicate the extent that they agreed with each of the 26 statements on a

5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher scores indicative of stronger beliefs. The SGABS has shown high test-retest reliability in a general population ($r = .91$; Lindner et al., 1999) and youth athletes ($r = .77$ to $.95$; Turner et al., 2014) samples, and acceptable construct, concurrent, convergent, and discriminate validity (MacInnes, 2003). The SGABS was selected for the study due to its prior use in athletic contexts (Turner & Barker, 2013). Across all time points, Cronbach's α for the rational beliefs subscale was medium and ranged from $\alpha = .28$ to $\alpha = .89$ ($M = .55$, $SD = .23$), however this value is explained by the small number of rational beliefs statements ($N = 4$; Nunnally & Bernstein, 1994). Although the SGABS offers only 4 statements for the assessment of rational beliefs, it was preferred to alternative measures (e.g., Rational Beliefs Inventory; RBI; Shorkey & Whiteman, 1977) due to its simplicity in translating into Greek in clear terms. To translate the SGABS, a researcher of Greek origin who is trained in REBT (Certified) and speaks fluent English translated each item from English to Greek. Then, the translation was validated by a third-party who is of Greek origin but whose main language is English. This third person translated the Greek SGABS items back into English. Any discrepancies between the researcher's and the third party's translations were discussed and reconciled to form an accurate Greek translation. Concerning irrational beliefs, Cronbach's α ranged from $\alpha = .77$ to $\alpha = .85$ ($M = .81$, $SD = .03$).

Procedure

All participants completed the SGABS at four time points prior to the intervention to establish the baseline, due to lack of variability anticipated in irrational beliefs (Barker et al., 2011), which should remain stable over short periods of time (e.g., Lindner et al., 1999). All participants received four 40-minute REBT education workshops, with each workshop working to specific goals, in compliance with past

research and guidelines for group-REBT (Dryden & Neenan, 2002; Dryden & Branch, 2008; Turner et al., 2015). Broadly, participants were educated on the basic notions of REBT and the ABCDE framework and the causal relationship between beliefs and emotions. Participants were also educated on the disputation of irrational beliefs and the promotion of rational beliefs.

Specifically, the first REBT education workshop introduced the concept of the B-C connection, where the A-C is simultaneously discouraged. The first session was designed to help participants to understand that it is our beliefs that trigger healthy and unhealthy negative emotions and behaviours, rather than events. To further educate participants about the B-C connection, participants were given a homework activity to read two pre-prepared stories; one story included rational language, and the other included irrational language. The two stories were discussed on workshop two and the differences in language between the stories were focused on. The second workshop introduced rational and irrational beliefs more formally and detailed the differences between the four core irrational and four core rational beliefs. Participants were given homework to keep a log of their events (A), emotions (C), thoughts (B), and behaviors (C) over the next week to help them start to use the ABC model independently. The third workshop briefly covered the disputation phase (D) of REBT in which the four core irrational beliefs were challenged. The use of real world examples helped to engage participants in this process, where for example, video was used depicting the Brazilian soccer players after the 7-1 defeat at the 2014 World Cup, Roberto Baggio missing a penalty kick in the 1994 World Cup final for Italy against Brazil, and Lance Armstrong's doping situation. Participants were encouraged and guided in their processing of these events through an REBT lens, rationalizing the events and putting adversity into perspective. To illustrate, participants were

encouraged to think about whether the 7-1 defeat was “terrible” (awfulizing) for Brazil, whether the Brazil players could “stand losing” (LFT), and whether the loss meant that the Brazil players were “failures” (depreciation). Realizing that the event was not terrible, was tolerable, and did not mean that the Brazil players for failures, helped to promote a more rational perspective on failure on the world stage. In the fourth REBT education workshop, participants were invited to support or criticize rational and irrational statements, providing an opportunity for active involvement in the education process and revision of the learnt concepts. Both groups participated in the same REBT educational sessions, making sure that all participants were following the same protocol until one group received the REPDMS session.

After the completion of the REBT education workshops, the REBT+REPDMS group received one 40-minute REPDMS session. Participants in the REBT+REPDMS group were given one week to prepare a five-minute speech concerning a personal experience in which they employed rational or irrational thinking, and to identify the emotional and behavioural consequences of each way of thinking. Participants were asked to prepare their speech according to an ABCD framework in line with REBT. It was necessary to put a time limit on each speech (Holt & Dunn, 2006) due to time restrictions (needed to fit 9 speeches into a 45-minute timeslot). In addition, and inline with previous PDMS guidelines (Holt & Dunn, 2006), participant were instructed to carefully consider the content of their speeches, and were informed that they would be required to deliver their speech to the rest of the group. Participants were instructed that the REPDMS session did not require discussion or open conversation, but would involve each participant delivering a speech uninterrupted by fellow participants. This ensured that individuals did not dominate the session, and that the session could run to time. It was also communicated to participants that the first author would be happy to

answer questions and provide guidance about the speech to participants. At the start of the session, participants were also instructed to avoid putting on a performance, and to strive to be open and honest in their speeches (Dunn & Holt, 2004).

The REPDMS session was audio-recorded so that the authors could later reflect on emergent themes from the speeches. Participants mainly spoke about demandingness (a core irrational belief) that was expressed as have to's or should's. For example, one participant expressed the belief "I have to get this next point" when in competition, whereas another participant expressed a post-performance belief that "I should have scored." This statement indicates that demandingness beliefs can emerge both on approach to ("I have to..."), and in reaction to ("I should have..."), particular situations. Another participant spoke of the potential consequences of failure expressing the belief that "I will not perform as I should, and they would kick me out of the team" referring to the coach deselecting the participant. Here the participant expressed an irrational should (B) that can be challenged, but also an inference (A; "kick me out of the team") that in REBT would not be challenged. One participant provided some detail around the A, B, and C:

Two weeks ago I had a very important competition, in which if I won I would gain some benefits for getting to the university...and I guess, because I wanted it very much and I got anxious and although I had played well in the previous tournament until then, then I got so anxious and in all this game I didn't play at all...Basically, I did not focus on every point and on my strikes, I was thinking that I had to win the game...too much...I wanted it too much and it worked the other way.

The above example demonstrates the preference for wanting to win ("I wanted it very much") becoming an irrational demand to win ("had to win"), using an

important competition (A) as the context, also talking about anxiety and lack of focus (C). Participants also expressed their rational beliefs with one participant recognizing that “if I don’t make it, that’s ok I will have other chances” showing signs of anti-awfulizing in reaction to potential failure. Another athlete also communicated anti-awfulizing to the group when he was talk about missing an easy goal. He stated that “It’s ok, it’s a training. You miss them in order to learn...At the competition it’s different. Because you may not have another chance...It would be bad...Ok, not the end of everything, but bad.” The REPDMS session was conducted in the active directive style of REBT, which is somewhat different to past research (e.g., Evans et al., 2013), which typically instructs participants to talk in a non-structured way about particular experiences.

Possibly because participants received only four REBT educational workshops it was difficult for some to speak for a full five minutes in an REBT-related way. Therefore, on the room’s blackboard participants could see written: A (Event), B (What was I thinking?), C (What was I feeling?), D (What did I do?). Participants were instructed to follow this flow chart in order to guide their speech. This protocol for performing REPDMS differs from previous research on PDMS both in its goals as well as its process. Traditionally in PDMS, participants share their experiences, personal details and thoughts with other team members and this process has been shown to enhance a variety of social and personal constructs such as team cohesion and communication (e.g., Dunn & Holt, 2004; Holt & Dunn, 2006) and social identification (e.g., Evans et al., 2013), empathy (e.g., Dryden, 2006), collectively shared constructs and understandings (e.g., Ostroff, Kinicki, & Tamkins, 2003), confidence and trust in teammates, self- and other-awareness, closeness to teammates, motivation, and feelings of invincibility (Dunn & Holt, 2004; Holt & Dunn, 2006),

and socio-emotional bonds between team members (Hardy & Crace, 1997; Orlick, 1990; Yukleson, 2010). However, the focus in REPDMS is less on the promotion of group functioning, and more on shared knowledge and experiences of the REBT model in real life, and specifically on the further reduction of individual irrational beliefs and endorsement of individual rational beliefs. That is, the chief goal of REPDMS is to enhance rational thinking and weaken irrational thinking, attempted by sharing personal experiences within an REBT framework, linking beliefs with emotions and subsequent behavior. The use of the REBT framework to structure the PDMS speeches meant that the speeches were constricted to that which was relevant to the ABCDE framework. In other words, participants were less inclined to go off on tangents, instead, participants attempted to organize their speeches in conformity to the framework. The use of an ABCDE framework contrasts with typical PDMS, where apart from some broad guidance, participants are free to talk about whatever they want in a non-structured way. Data were collected following the REPDMS session (post-intervention phase) in the REBT+REPDMS group, and at the same time in the REBT only group, and for three weeks after in the follow-up phase.

Results

As is typical in single-case designs (Barker et al., 2011), visual inspection of the data was conducted for those variables that underwent continuous monitoring, including irrational beliefs and rational beliefs, across baseline, REBT education workshop, REPDMS or non-REPDMS, and post-intervention phases. The visual analysis of data complied with Hrycaiko and Martin's (1996) guidelines for determining intervention effectiveness concerning baseline stability, immediacy of effect, trend behavior, and magnitude of change (Cohen's d ; $M_1 - M_2 / SD_{\text{pooled}}$). Also, the use of a REBT only group allowed for between-groups effects to be assessed. In

addition, to supplement visual analysis, statistical analyses were also conducted to examine the within-subjects changes in irrational and rational beliefs across the phases, and the between-groups differences between the REBT+REPDMS and REBT only group at each phase. A Friedman test was conducted to examine within-subjects effects, and a Mann-Whitney U test was conducted to examine between-groups effects. Non-parametric tests were performed due to the small sample size in the current study.

Visual Analysis

Irrational beliefs. Visual analysis (Figure 1) indicated comparable baseline averages (REBT+REPDMS group, $M = 2.89$, $SD = .06$; REBT only group, $M = 2.91$, $SD = .10$). During the REBT educational sessions, for both groups irrational beliefs followed a similar pattern, with the lowest scores occurring after the final REBT education workshop. Therefore, the change in irrational beliefs did not immediately occur at REBT education onset. The REBT+REPDMS group showed a .23 change ($d = 2.18$) in mean irrational beliefs, decreasing from pre- ($M = 2.89$; $SD = .06$) to post-REBT education ($M = 2.66$; $SD = .14$). After REPDMS the irrational beliefs of the REBT+REPDMS group showed an immediate ($d = .54$) decrease of 9.47% from the post-REBT education phase ($M = 2.73$; $SD = .12$) to the REPDMS phase ($M = 2.66$; $SD = .14$), whereas the REBT only group showed an ($d = .50$) increase of .33% from the post-REBT education phase ($M = 2.79$; $SD = .16$) to the REPDMS phase ($M = 2.85$; $SD = .06$). Comparison of the post-intervention period for the two groups shows that irrational beliefs returned towards baseline levels, but that irrational beliefs were lower for the REBT+REPDMS group ($M = 2.66$), a difference of -8% compared to baseline, while the REBT only group ($M = 2.85$) had a baseline-post intervention difference of 2%.

Rational Beliefs. Visual analysis of rational beliefs (Figure 2) indicated that the baseline averages were similar for both groups (REBT+REPDMS group, $M = 2.84$; $SD = .06$; REBT only group, $M = 2.87$; $SD = .10$). Rational beliefs increased during the REBT education period with an immediate increase from baseline (REBT+REPDMS group, $M = 3.15$, $d = .86$; REBT only group, $M = 3.07$, $d = .65$). However, the REBT+REPDMS group maintained the elevated level of rational beliefs of 12.7% in the post-intervention period ($M = 3.2$; $d = .51$), compared to the REBT only group who showed a decrease of 5.2% reduction to below baseline levels ($M = 2.72$; $d = 4.20$). After REPDMS the rational beliefs of the REBT+REPDMS group remained elevated ($d = .25$) and stable (1.59% change) from the post-REBT education phase ($M = 3.15$; $SD = .12$) to the REPDMS phase ($M = 3.20$; $SD = .07$), whereas the REBT only group showed a ($d = .25$) decrease of 11.40% from the post-REBT education phase ($M = 3.07$; $SD = .06$) to the REPDMS phase ($M = 2.72$; $SD = .14$). Comparison of the post-intervention period for the two groups shows that rational beliefs remained elevated and stable for the REBT+REPDMS group ($M = 3.20$), a difference of 12.68% compared to baseline, while the REBT only group ($M = 2.72$) had a baseline-post intervention difference of 5.23%.

In sum, irrational beliefs decreased and rational beliefs increased from pre- to post-REBT education in both groups. In the REBT+REPDMS group, irrational beliefs further decreased and rational beliefs remained elevated and stable after the REPDMS session. In contrast to the REBT+REPDMS group, the REBT only group, who did not receive REPDMS in this time period, showed increased irrational beliefs increased and decreased rational beliefs. In other words, while the REBT+REPDMS group benefitted from REPDMS, the REBT only group did not received REPDMS and

subsequently reported deleterious effects on irrational (increased) and rational (decreased) beliefs.

Statistical analyses

Irrational beliefs. A Friedman test conducted to examine within-subjects changes in irrational beliefs across the three phases, revealed a significant effect ($X^2 = 6.17, p = .04$). Three Wilcoxon tests were conducted to examine where significant changes across phases were, which revealed a significant reduction ($Z = 3.05, p = .001$) from pre-intervention to post-REBT, and a significant reduction ($Z = 2.05, p = .02$) from pre-intervention to REPDMS.

A Mann-Whitney U test was conducted to examine between-groups effects, revealing no significant differences between the REBT+REPDMS and REBT only group at any phase.

Rational beliefs. A Friedman test conducted to examine within-subjects changes in irrational beliefs across the three phases, revealed a significant effect ($X^2 = 6.99, p = .03$). Three Wilcoxon tests were conducted to examine where significant changes across phases were, which revealed a significant increase ($Z = 2.81, p = .002$) from pre-intervention to post-REBT.

A Mann-Whitney U test was conducted to examine between-groups effects, revealing a significant difference ($U = 16.50, p = .036$) between the REBT+REPDMS ($M = 3.20; SD = .07$) and REBT only group ($M = 2.72; SD = .14$) at the REPDMS phase.

Discussion

The present study aimed to examine the effects of REPDMS on the irrational and rational beliefs of Greek adolescent athletes. Using single-case designs, an REBT+REPDMS group (receiving REBT education and REPDMS) was compared to

a REBT only group (receiving only REBT education), to assess between-groups effects. This current study is the first in published research to report the application of REPDMS, with past research reporting the use of REBT (Turner et al., 2015) and PDMS (Evans et al., 2013) separately. We hypothesized that an REPDMS intervention would decrease irrational beliefs and increase rational beliefs above and beyond the effects produced by group educational REBT. Positive changes in irrational beliefs (reductions) as well as rational beliefs (increases) after REBT education were anticipated based on previous research (Turner, et al., 2013). Visual data analyses supported this hypothesis, with the REBT+REPDMS group (REPDMS) demonstrating a further reduction in irrational beliefs and a maintained elevation in rational beliefs after REBT education, while the REBT only group (no REPDMS) showed an increase in irrational beliefs and a decrease in rational beliefs. However, differences in irrational beliefs between the groups were not statistically significant. Statistical analyses did reveal that rational beliefs were higher in the REBT+REPDMS group upon receiving REPDMS compared to the REBT only group who received nothing after REBT education. Regarding the anticipation of positive changes in irrational and rational beliefs from pre- to post-REBT education, and in line with past research (Turner et al., 2015) visual and statistical analyses demonstrated that irrational beliefs significantly decreased, and rational beliefs significantly increased, from pre- to post-REBT education.

From data analyses it is apparent that participants' rational and irrational beliefs were positively influenced by the REPDMS intervention when compared to the effects of REBT education alone. This finding could be useful when designing group interventions particularly when time and cost parameters play a crucial role. It seems that the REPDMS gave an additional boost to the effects of the REBT

education with regards to lowering irrational beliefs and stabilizing rational beliefs, and it should also be noted that these effects were observed after a single REPDMS session. There are several reasons that could explain such positive effects of REPDMS demonstrated by these data. First, it may be that by preparing a speech for the REPDMS session that the athletes engaged more fully in the fundamental aspects of REBT, such as the ABCDE framework, the B-C connection, disputation, and more flexible thinking. Indeed, it has been suggested that conscious participation of the client is more beneficial than a mere didactic style (Diguseppe, Doyle, Dryden, & Backx, 2013). Second, the REPDMS session could simply function as another REBT session. Past research in sport has indicated that the effects of REBT on irrational beliefs may be enhanced with more sessions, suggesting a dose response (e.g., Turner et al., 2015). This reasoning could be tested in further research where the REBT only group would receive an additional REBT educational session (but not REPDMS), instead of receiving nothing as in the current study.

Third, the 'sharing' component of the REPDMS allowed the athletes to not only explain their own situations, but also experience the use of REBT from their fellow athletes. This sharing may have served to enhance the athletes' self-efficacy in using REBT, for example by providing vicarious experiences and verbal persuasion (Bandura, 1997). However, this hypothesis is conjecture and future researchers should include a self-efficacy measure pertaining to the use of the ABCDE model to assess participant efficacy in applying REBT. Indeed, sharing experiences and thoughts is a key component of group therapy in REBT (Dryden & Neenan, 2002). Further, perhaps listening to others dispute their beliefs about common events (As) provided participants with rational beliefs concerning a variety of different events. Indeed, collaborative personal-disclosure underpinned by mutual-sharing has been shown to

nurture empathy by providing group members with a greater understanding of each other's personal experiences (Dryden, 2006). Finally, a variable that can be augmented via PDMS is social support (Dunn & Holt, 2004; Holt & Dunn, 2006), an important coping strategy for the pressure of competitive sport (Reeves, Nicholls, & McKenna, 2009; Skinner & Zimmer-Gembeck, 2007). In the present study, it is reasonable to suggest that augmented social support may have enhanced participants' usage of REBT, particularly via informational support (e.g., House, 1981), which can contribute to enhanced coping by encouraging more functional cognitive appraisals of stressors (e.g., Aspinwall & Taylor, 1997). In REPDMS, individuals share their usage of the ABCDE model of REBT for a real event, thus providing useful and authentic information to the rest of the group about how to evaluate activating events more adaptively. Indeed, Social Comparison Theory (Festinger, 1954) suggests that individuals look to others for information on appropriate emotional responses, and that we turn to similar others for this information as they can provide relevant information in the face of stress.

Notably, the intervention had a larger impact on rational beliefs than on irrational beliefs. Rational beliefs fell below baseline levels for the REBT only group at the post-intervention phase, while the REBT+REPDMS group remained above the levels shown for the REBT education period. Therefore, while the REBT only group appeared to regress back to baseline levels of rational beliefs, the REBT+REPDMS group showed a stabilization effect, which is preferable. Nevertheless, it was expected that after REBT and REPDMS, rational and irrational beliefs would show a tendency to return towards baseline. This expectation was based on the knowledge that the intervention was conducted at a group level, so it would not be expected that its effects would have the robustness of a complete one-to-one therapy process (e.g.,

Turner et al., 2014). Past research employing group-REBT in sport has reported increases in irrational beliefs towards baseline at post-intervention (Turner et al., 2014). So, it could be inferred that the intervention used in this study had a dual effect. It contributed to the reduction of irrational beliefs and it enhanced and stabilized rational beliefs. According to the extant literature this dual effect is not always anticipated as the effective disputation of irrational beliefs does not mean that clients will automatically adopt rational beliefs, because rational and irrational beliefs are relatively orthogonal and are not necessarily correlated (Turner et al., 2016), which is in part why the REBT methodology explicitly suggests that practitioners dispute both the irrational *and* the rational belief (DiGiuseppe et al., 2013).

Examining REPDMS empirically for the first time afforded the authors an opportunity to reflect on its application and effectiveness. Most notably, the REPDMS process required the active and directive style of REBT in order to keep the athletes within the REBT framework. Participants had the tendency to just describe their experiences and speak generally about the event, not focusing on the critical activating event (e.g., Dryden & Branch, 2008). That is, participants were able to talk about the events that triggered their irrational beliefs, but had difficulty expressing the critical A (the specific aspect of the event rather than the event itself). At the same time, the active and directive effort to keep participants on track bears the risk of transforming ‘sharing’ to a ‘five-minute therapy’ process. Often the tendency can be for participants to change the A, or vaguely say that they should change their C, rather than their belief. However, with some guidance and prompts, participants were able to refocus quickly on the B, thus steering the session towards REBT goals. For example, the prompt “what were you telling yourself about the situation (A)” was used to orient participants to the belief, rather focusing on the A.

The present study has limitations that, if addressed, could strengthen the findings. First, there were time constraints for the intervention, which meant that participants were not fully exposed to all elements of REBT. Specifically, participants were not set behavioural homework assignments, such as flooding, and were not taught emotional strategies, such as rational-emotive imagery, in the REBT education workshops. Behavioural and emotional assignments REBT are considered to an important part of REBT, but it is necessary to monitor homework completion. But the group-level nature of the REBT intervention in the current study was logistically prohibitive with regards to setting and reviewing homework, as it would not have been possible within the time limits to review each participants homework as would be typical in one-to-one REBT. Therefore, without the scope to properly monitor and regulate homework adherence, and as is typical in group-level REBT (Turner et al., 2014; 2015), the assignment of homework was omitted in the current study. Nonetheless, the omission of homework could affect the quality of the REPDMS session. Researchers in sport should start to apply more comprehensive REBT programmes, as short programmes have been found to yield short-term benefits (e.g., Turner et al., 2014). Second, although participants volunteered for the study, their participation was not a result of a needs analysis. The effects of the intervention could be maximized by ensuring that participants present with high irrational beliefs at baseline, by screening athlete populations as part of the sampling process. In practice, REBT may be best applied to athletes who have high irrational beliefs to reduce the cost and time commitment for sports organizations, and ensures that all participants experience maximum benefits. However, away from a research paradigm, practitioners should be aware that REBT is not just a remedial approach to applied

work, and can be used with any athlete who wishes to strengthen their current rational beliefs and learn to challenge and dispute their irrational beliefs.

Another possible limitation may have been that some participants were at different periods in their season. Some participants, such as the tennis players, had important competitions coming up after the REPDMS, while for others the season was almost over. Athletes who had no more competitions for this season may have engaged less in the programme. But those who were still competing may have been highly engaged as their performance relevant emotions would have been more salient. Indeed, psychological and emotional states may change in the lead-up to competition, with for example increased somatic state anxiety intensity as the event draw nearer, and a stabilisation in cognitive state anxiety (e.g., Cerin, Szabo, Hunt, & Williams, 2000; Mabweazara, Andrews, & Leach, 2014). In addition, participants were involved in various sports and it may be more ecologically valid to study athletes from the same team, such as in previous research (Turner et al., 2015), where similar activating events and irrational may be expressed. Future researchers should use a more homogenous sample of athletes from the same team at the same period of their competitive season. For example, Turner et al. (2015) completed a between-groups REBT programme within the same cohort of athletes, including a control group, finding reductions in irrational beliefs for the REBT group and not for the control group. Finally, given that PDMS is in essence a team building intervention, future research should include measures of group dynamics (e.g., cohesion) as is typical in past research (Carron & Spink, 1993; Dunn & Holt, 2004; Holt & Dunn, 2006; Paradis & Martin, 2012), alongside markers of individual belief change.

It should also be recognized that social validation data was not collected in the present study, which deviates from past single-case research (e.g., Turner et al., 2015).

Social validation would have helped to interpret the data presented (e.g., Page & Thelwell, 2013), and may have reduced speculation as to the mechanisms of change in irrational and rational beliefs found in the current study. In PDMS research, qualitative data from participants regarding the process is potentially important (Dunn & Holt, 2004), and inclusion of social validation in the current study may have aided the future administration of REPDMS. Future researchers should consider using social validation interviews (e.g., Page & Thelwell, 2013) with participants to provide a greater understanding of perceived intervention effects.

To conclude, the present study is the first published study to examine and support the use of REPDMS to reduce irrational beliefs and stabilize elevated rational beliefs in athletes. Indeed, no other published study has documented the use of REPDMS, thus giving the present study novelty within REBT and sport and exercise literatures. The present study is also the first published study to report the use of REBT with Greek athletes, thus extending the understanding of how REBT can be applied cross-culturally. This study contributes to the growing research concerning the use of REBT in sport settings, and especially contributes to the work reported within group contexts. The findings that REPDMS is able to reduce irrational beliefs and stabilize elevated rational beliefs compared to REBT education has clear implications for the provision of REBT in sport. The notion that sharing the REBT process in a PDMS session can enhance the effects of REBT may provide practitioners with a valuable tool for use in group-settings, and is a promising area for further study. It is hoped that the present study encourages other practitioners to apply REBT in their practice, and importantly, to report athlete experiences of REBT in literature.

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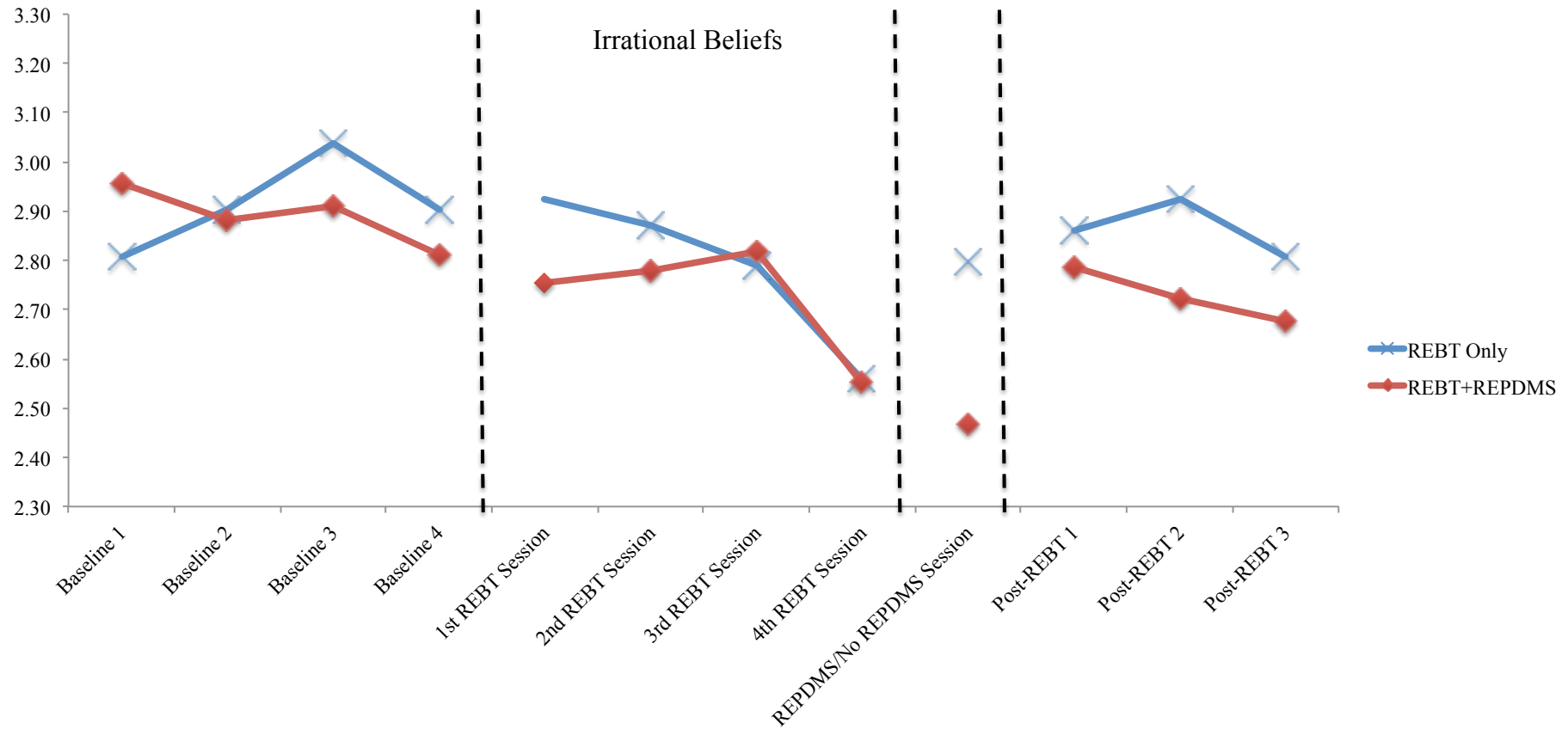
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REPDMS WITH GREEK YOUTH ATHLETES

Figure 1. Total irrational beliefs for the REBT+REPDMS group and REBT only group across all data collection points.



REPDMS WITH GREEK YOUTH ATHLETES

Figure 2. Total rational beliefs for the REBT+REPDMS group and REBT only group across all data collection points.

