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An idiographic single-case study examining the use of Rational Emotive Behavior Therapy (REBT) with three amateur golfers to alleviate social anxiety.

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Abstract

Performance anxiety has been studied in relation to golf performance but one phenomenon that has received scant attention is social anxiety. One potential intervention that could reduce social anxiety in golfers is rational emotive behavior therapy (REBT), a cognitive-behavioral approach for which research interest is growing. The current study used an idiographic single-case study design to assess the effects of REBT on the social anxiety of three male amateur golfers. REBT was employed both on and off the golf course to ensure integration of REBT into the golfers' performance, offering a methodological advancement of past research. Data were collected prior to, during, and after the REBT intervention. Visual analysis following single-case guidelines revealed substantial reductions in irrational beliefs and social anxiety in all three golfers. Social validation data indicated the positive receipt of REBT by the golfers, and supported the visual analysis findings. This current study supports the effectiveness of REBT and also extends the research by applying REBT in a "real-world" performance setting, offering methodological advances and providing clear implications for future research and practice.

Keywords: case-study, beliefs, intervention, golf, performance.

Lay summary:

The current study uses an idiographic single-case study design to assess the effects of REBT on the social anxiety of three male amateur golfers. Visual analysis revealed substantial reductions in irrational beliefs, and social anxiety. Findings support the use of REBT to enhance golf performance.

An idiographic single-case study examining the use of Rational Emotive Behavior Therapy (REBT) with three amateur golfers to alleviate social anxiety. Performance anxiety has been studied extensively in relation to golf performance (e.g., Schaefer, Vella, Allen, & Magee, 2016; Weinberg & Genuchi, 1980), highlighting various potential mechanisms for the effects of high performance anxiety on disrupted golfing performance. Such potential mechanisms include the yips (Foster, 1977), reinvestment (Master, 1992), and ironic processes of motor control (Janelle, 1999). However, less research has been focussed on the anxiety experienced about specific aspects of golf performance, such as particular shots in competitive situations. One phenomenon that has received scant attention in the literature concerning golf performance anxiety is social anxiety.

Anxiety-induced motor-skill breakdown in competitive situations have long been attributed to the importance or personal relevance of the situation, and the perceived social evaluation present within the situation (e.g., Baumeister, 1984). Therefore, social anxiety is clearly salient for competitive performance in sports such as golf in which athletes frequently perform in front of their fellow athletes, and spectators. Social anxiety involves feelings of apprehension, self-consciousness, and emotional distress within (or in anticipation of) social-evaluative situations, and arises as a result of a perception of potential scrutiny by others and potential harm or loss of status arising from negative evaluation (Leitenberg, 1990). The expectations of negative social consequences arising from underperformance are often irrational, in that these expectations are not always realistic or accurate, and are often imagined catastrophic by those suffering high evaluation anxiety (Leitenberg, 1990). It is relatively easy to see the relevance of social anxiety to sporting performance, especially in competitive situations. For example, Barlow and Durand (2012) state

that “Individuals with performance anxiety usually have no difficulty with social interaction, but when they must do something specific in front of people, anxiety takes over and they focus on the possibility that they will embarrass themselves.” Therefore, it is likely that social anxiety could be reduced by helping performers to think more rationally within competitive situations, and by altering perceptual mediators (such as thoughts and beliefs) between evaluative situations and anxiety-related performance issues.

One approach to helping individuals manage social anxiety (DiGiuseppe, McGowan, Simon, & Gardner, 1990; Tulbure, Szentagotai, David, Ștefan, Månsson, & David, 2015) is cognitive behavioural therapy (CBT). CBT is a well-supported and efficacious psychotherapeutic tradition that includes such models as cognitive therapy (CT; Beck, 1976), acceptance and commitment therapy (ACT: Hayes, Strosahl, & Wilson, 1999), and rational emotive behavior therapy (REBT; Ellis, 1999). McArdle and Moore (2012) recognised a limited theoretical coherence underpinning assessment and intervention processes in sport psychology and suggested that little research has investigated the effectiveness of different assessment approaches in sport psychology. Since McArdle and Moore’s paper, the reported application of CBT, specifically REBT, has garnered growing research attention in sport literature (Turner, 2016; Turner & Bennett, 2018).

The central philosophy of REBT is that it is not events (A) that directly cause emotions and behaviors (C), rather, it is one’s beliefs (B) about the events that lead to emotional and behavioral reactivity. Within this ABC framework for example, recipients of REBT are encouraged to realize that it is not outside events (A) that cause their dysfunctional anxiety (C), it is their irrational beliefs (B), and thus, irrational beliefs are targeted and challenged, and then replaced with rational alternate

beliefs. There are four core irrational beliefs, each considered rigid, extreme, and illogical (i.e., inconsistent with reality); primary irrational beliefs (e.g., “I want to be successful and therefore I must”), low-frustration tolerance (e.g., “it is unbearable to fail”), awfulizing (e.g., “if I do not succeed it will be awful”), and depreciation (e.g., “when I fail, it means that I am an idiot”). In parallel, there are four core rational beliefs, each considered flexible, non-extreme, and logical (i.e., consistent with reality); primary rational beliefs (e.g., “I want to be successful but that does not mean I have to be”), high-frustration tolerance (e.g., “failure is difficult, but is bearable”); anti-awfulizing (e.g., “if I do not succeed it would be bad, but not awful”), and unconditional acceptance (e.g., “when I fail, it is bad, but does not mean that I am an idiot”).

Irrational beliefs are considered to lead to a broad range of dysfunctional emotions including anxiety, depression, anger, guilt, and general psychological distress (Visla, Fluckiger, Holtforth, & David, 2016). Past research has found that irrational beliefs are positively related to various forms of anxiety such as trait, state, speech, social, evaluation, and test anxiety. This research has been conducted across clinical and non-clinical samples (Deffenbacher, Zwemer, Whisman, Hill, & Sloan, 1986; Himle, Thyer, & Papsdorf, 1982), and in general, phobic, and obsessive-compulsive populations (Thyer, Papsdorf, & Kilgore, 1983). Unsurprisingly, the chief goal of REBT is to reduce irrational beliefs in favour of rational beliefs, to alleviate emotion dysfunction and promote psychological well-being (Dryden & Neenan, 2015). The use of REBT in alleviating anxiety is well-supported in literature (Gonzalez et al., 2004). The efficacy of REBT in reducing anxiety is also echoed in the sport literature, where numerous studies have demonstrated how anxiety can be reduced using REBT (Elko & Ostrow, 1991; Larner, Morris, & Marchant, 2007;

Turner & Barker, 2013; Wood, Barker, Turner, & Sheffield, 2018; Yamauchi & Murakoshi, 2002). Whilst the evidence supporting the use of REBT to reduce anxiety in athletes and non-athletes continues to grow, the athletic performance-enhancing qualities of REBT remain under debate with some authors highlighting that there exists insufficient evidence to draw appropriate conclusions (Turner, 2016). Only one study has investigated the performance effects of REBT in athletes (Wood et al., 2017), finding that an archer's objective performance was attenuated following seven-sessions of one-to-one REBT, in which performance anxiety was also found to be reduced. Also, no study within the extant REBT research has explored specific anxiety about a certain skill. This is important because although anxiety can be generalised (e.g., trait anxiety), it has long since been recognised that golfers experience more acute bouts of anxiety concerning particular performance components such as missing a short putt, or hitting a ball out of bounds (e.g., Cohn, 1991; Rotella & Bunker, 1981; Weinberg & Genuchi, 1980).

The professionalism of applied sport psychology during recent years has increased the requirement for practitioners to be accountable for their work (e.g., Hanton & Mellalieu, 2012). Accountability through intervention evaluation is one of the most essential issues underpinning professional practice (Barker, Mellalieu, McCarthy, Jones, & Moran, 2013). Therefore, an idiographic case-study approach provides a framework, which facilitates an in-depth, multi-modal way of collecting data (including the use of probes; Kazdin, 2011) whilst reporting the outcome of the intervention for each participant individually (e.g., Thelwell & Greenlees, 2001). Such designs allow for a better understanding of interventions designed to improve performance and mental states (Voight, 2012). While many case-studies are purely descriptive, explanatory case-studies which aim to answer 'how' or 'why' questions

with little control over the occurrence of events can provide descriptions of events in terms of explanatory concepts linked to existing theory and evidence in real-life situations (Willig, 2013).

Therefore, the present study examines the effects of REBT on the social anxiety of three golfers using an explanatory idiographic case-study approach. By using this case-study approach and by focusing on golfers' social anxiety we sought to observe a variety of highly individualized performance issues thus providing a valuable and ecologically valid case-study of REBT within a golf setting and making a valuable contribution to current thinking. As such, this study aims to build on the extant REBT literature by examining the use of REBT in alleviating social anxiety in golfers generally, and specifically across a range of shots. Past research supports the use of REBT to reduce anxiety in athletes (Turner & Barker, 2013) but to date no published study has applied REBT to anxiety about specific shots, and to date no study has examined the effects of REBT on the social anxiety of athletes. In-line with past research demonstrating the effects of REBT in reducing irrational beliefs and performance anxiety (Turner & Barker, 2013), and enhancing performance (Wood et al., 2017), it is hypothesized that the implementation of the REBT intervention would reduce irrational beliefs and in the three golfers.

Method

Participants and Selection Criteria

Following university ethical approval and the provision of informed consent, recruitment notices were placed in a local golf club. A total of 37 golfers were recruited to take part in a screening process for irrational performance beliefs and subjective golf performance issues. We used the irrational performance beliefs inventory (iPBI; Turner et al., 2016) to indicate irrational performance beliefs, and a

golf-specific anxiety questionnaire (GSAQ), developed by the second author, to identify golf-specific anxiety. Intervention inclusion was determined by participants' combined responses to the iPBI and the GSAQ. Specifically, for intervention selection and in-line with recommendations (Turner & Barker, 2014) participants were required to have sufficient irrational performance beliefs (primary irrational beliefs = 24.98, low frustration tolerance = 24.77, awfulizing = 22.31, depreciation = 14.85; Turner & Allen, 2018), and to be experiencing golf-specific anxiety about a particular golfing skill. Fifteen participants met the criteria for selection based on their irrational performance beliefs scores, and three amateur golfers ($M_{age} = 57.66$, $SD = 6.11$) with the highest GSAQ scores were selected to participate in the intervention. We selected only three participants in order to facilitate the idiographic and detailed analysis of intervention effects whereby more could be learned by studying fewer participants (Normand, 2017). All three participants were experienced golfers ($M_{playing\ years} = 39$; $SD = 5.29$) with handicaps ranging between 11 and 13 ($M_{handicap} = 12$; $SD = 1$).

Design

In this study we adopted an explanatory idiographic case-study design with the use of multiple probes (Kazdin, 2011) to examine the effects of REBT with the three golfers (e.g., Thelwell & Greenlees, 2001). The approach and the collection of probes provided the opportunity for data collection flexibility and the ability to collect various qualitative (interview, diary/reflections, social validation) and quantitative (e.g., self-reports) data, triangulating a range of information within a single case-study (e.g., Barker & Jones, 2008). Many published case-studies document outcomes for single individuals, but the validity of the present study is enhanced through the recruitment of multiple participants (see Smith, 1988).

Measures

Golf-specific anxiety. A golf-specific anxiety questionnaire (GSAQ) was developed to identify current and acute performance breakdowns in one (or more) aspect of golf (see Barker & Jones, 2008). Responses were made on a 5-point Likert-scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) to nine statements that described performance issues that typify performance anxiety (e.g., “I have a fear of playing certain shots”) and social anxiety (e.g., “I feel embarrassed that I cannot play certain shots to my ability”). Higher scores on the GSAQ indicate greater golf-specific anxiety.

Irrational beliefs. The irrational performance beliefs inventory (iPBI; Turner et al., 2016) was developed to provide a performance specific measure of irrational beliefs. It comprises 28-items 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. The iPBI provides a context-specific measure of irrational beliefs in performance environments and has shown construct (alpha reliability between .90 and .96), concurrent (medium to large correlations reported) and predictive (small to medium correlations reported) validity (Turner et al., 2016). The iPBI has been used with athletes (e.g., Deen et al., 2017), and has demonstrated good internal consistency (Turner, Carrington, & Miller, 2017), and test-retest reliability in athlete samples (Turner, Slater, Dixon, & Miller, 2018). Validity testing of the iPBI for use in athletes is on-going (Turner & Allen, 2018), but the iPBI represents the only performance-specific measure of irrational beliefs and thus was deemed suitable for use in the current study.

Social anxiety. The Liebowitz social anxiety scale (LSAS-SR; Baker, Heinrichs, Kim, & Hofmann, 2002) was used to assess social anxiety. The scale comprises 24-items depicting various performance and social situations. Participants rated their levels of social anxiety on a four-point Likert-scale, ranging from 0 (*no fear*) to 3 (*severe fear*), and avoidance from 0 (*never*) to 3 (*usually*) for each situation. The avoidance scale ratings are based on the time spent avoiding the situation expressed as a percentage. Specifically, 0 (*never*) = 0%; 1 (*occasionally*) = 1%-33%; 2 (*often*) = 33%-67%; and 3 (*usually*) = 67%-100%. For situations that participants did not typically experience, or felt were irrelevant to them, they were prompted to imagine; “what if you were faced with that situation?” and to answer accordingly. Total scores for each of the fear and avoidance scales are combined to provide an overall score. The results of test-retest reliability, internal consistency, and convergent and discriminant validity, show that the LSAS-SR has good psychometric properties.

Subjective performance anxiety. Subjective performance anxiety (SPA) was assessed during acquisition sessions where participants applied REBT on the course during play. Specifically, during three on-course REBT sessions within a 10-hole practice round, participants were exposed to the specific shot for which they reported high golf-specific anxiety at each hole. Immediately prior to each exposure, participants were asked by the researcher to rate their anxiety level as they prepared to execute the feared shot. Responses were made on a five-point Likert-scale ranging from 1 (*not at all anxious*) to 5 (*extremely anxious*). Summed across the 10-holes, participants could score between 10 (*not at all anxious*) and 50 (*extremely anxious*).

Social Validation. Social validation has been incorporated into a number of sport and exercise psychology studies (e.g. Barker & Jones, 2008; Neil, Hanton, & Mellalieu, 2013; Turner et al., 2014, 2015) as a way to determine athletes’ perceptions

of the efficacy, effectiveness, and delivery of interventions (Page & Thelwell, 2013). Consequently, a social validation questionnaire was administered via an audio-recorded telephone call, one month following the completion of the intervention. Similar to Turner et al. (2015), participants responded on a seven-point Likert-scale anchored by 1 (*do not agree at all*) and 7 (*agree completely*) to six questions regarding the efficacy (“smarter thinking has positively influenced my golf, and other aspects of my life”) and importance (“logical and rational beliefs are an important aspect of my golf performance”) of the REBT intervention and its potential to modify thoughts and behaviours (“I will modify my behaviour as a result of smarter thinking” and “I will modify my thoughts as a result of smarter thinking”). In addition, a further eight open ended questions were presented to identify any perceived changes in participant thoughts and feelings relating to their golf performance and other aspects of their life.

Data collection procedure

Using a multiple-probe approach, data were collected at six timepoints across pre-intervention, intervention, and post-intervention periods to provide both psychological (irrational beliefs and social anxiety) and behavioral (golf-specific anxiety) indicators of intervention effectiveness (Figure 2). Specifically, we collected data at pre-intervention, one week after REBT education, one week after acquisition session 1, one week after acquisition session 3, one week after the integration phase, and immediately prior to social validation (one-month post-intervention). Data using the SPA was collected only during the acquisition phase because the measure relates specifically to exposure to the specific shot for which the golfers had specific anxiety.

Pre-Intervention Problem Formulation

All three participants were currently experiencing golf-specific anxiety and associated extreme anxiety (scores ranged from 38 to 45, out of 45) and lack of control over their short game (i.e., chipping and pitching onto the green). All participants agreed that shots (excluding shots from bunkers) requiring less than a full swing of the golf club to cover the required distance (determined to be less than 75 yards) were likely to illicit fear and anxiety. Mostly, this resulted in shots that were either “chunked” or “duffed” (i.e., the club head strikes the ground before the ball so that the ball moves only a short distance), or “thinned” (i.e., the bottom edge of the club head strikes the ball half-way up, causing the ball to fly too fast with little backspin and control) across the green.

An initial needs-analysis discussion (15-20 minutes duration) with each participant was carried out to clarify the specific shot for which high golf-specific anxiety was elicited and gain a greater understanding of participants’ irrational performance beliefs. This needs-analysis confirmed the presence of a variety of irrational performance beliefs. For example, when recalling specific performance breakdowns, participant 1 stated that “I can’t stand failing; not being able to play the perfect chip shot, for me, is failing” (reflecting LFT beliefs), participant 2 said that “it is disastrous that after all these years playing, I can’t do it, totally ridiculous, a complete embarrassment” (reflecting awfulizing beliefs), and participant 3 remarked that “I absolutely cannot abide not being able to play those shots” (reflecting LFT beliefs). Accordingly, and in line with past research (Cunningham & Turner, 2016), we tailored the content of the REBT intervention to meet specific irrational performance beliefs linked to each participant’s individual golf-specific anxiety.

Intervention

The intervention comprised six one-to-one sessions over three distinct phases. First, participants received two 60-minute REBT education sessions. This is in-line with recommendations for the use of REBT with athlete, which suggests one to three education sessions (Turner & Barker, 2013). Then, again in line with recommendations (Turner & Barker, 2013) participants received three REBT acquisition sessions on the golf course. Finally, participants received one REBT integration session, which usually takes place across two sessions but can be effectively delivered in one session in limited timeframes (Turner & Barker, 2013). For detailed guidelines on how REBT can be applied with athletic populations the reader may wish to consult Turner and Barker (2013) or Turner and Bennett (2017).

REBT education. Participants were introduced to REBT as “Smarter Thinking” (Turner, 2014) via two PowerPoint presentations lasting 60-minutes each. The first presentation provided participants with an introduction to the fundamental aspects of REBT (e.g., that by replacing irrational beliefs with rational beliefs, dysfunctional emotions such as unhealthy anxiety can be reduced). Following the guidelines from REBT in sport literature (see Turner, 2016, for a review), the second presentation introduced participants to REBT’s structured ABCDE framework (DiGiuseppe, Doyle, Dryden, & Backx, 2014). The ABCDE framework was then applied to reflect the individual participants’ golf-specific anxiety and irrational beliefs. For example, a short chip shot from just off the green (A), triggers the irrational belief (B) “If I mess this shot up it will be a disaster”, and as a consequence (C) leads to elevated anxiety and performance breakdown. The disputation (D) focussed on the word “disaster”, which implies that the consequences of messing the shot up are truly awful and perhaps irreparable. Similarly, the use of primary irrational beliefs such as “I must play this shot well” was also disputed. Participants

were encouraged to realise that by attaching extreme importance to the performance outcome, the prospect of underperforming might become overwhelming, increasing anxiety and making it difficult to fulfil potential.

Participants were then encouraged to replace irrational beliefs with rational alternatives (E). For example, demanding and awfulizing phraseology such as; “I must play this shot well, and it would be terrible if I fluffed this shot” could be replaced with the preferences “I really want to play this shot well, but I don’t have to, and it would be bad to fluff this shot, but not awful.” At the end of REBT education, participants were briefed on the structure of the upcoming acquisition sessions and a date for the first session was scheduled. One week following REBT education, the GSAQ, iPBI and LSAR-SR were administered.

REBT acquisition. The acquisition phase lasted eight weeks for each participant and involved the application of REBT on the golf course during practice play. Specifically, three sessions comprising 10 holes of golf were structured to reinforce the principles of REBT (e.g., disputing irrational beliefs). Each session included 10 (one for each hole played) practitioner-manipulated performance situations designed to deliberately provide exposure to situations participants would normally like to avoid due to anxiety. In-line with REBT the rationality of participants’ thoughts pertaining to the situation can be examined and disputed (Froggatt, 2005) and thus participants were presented with a variety of chipping and pitching shots during each 10-hole session to replicate the type of situations that typically elicit anxiety. When placed in these situations participants were questioned about their thoughts and feelings (e.g., “how does this shot make you feel?” “How confident are you that you can play this shot well?” “What do you consider a good outcome for this shot?”). The aim was to gain an understanding of the potential

mechanisms underlying individual anxious responses and critically for REBT, expose irrational performance beliefs that could be disputed in-situ. Immediately following each (exposure) shot, participants self-reported their performance anxiety (for that particular scenario) on the SPA scale. Finally, the time between exposure situations (e.g., walking and playing other shots during the course of normal play) was used to discuss participants' thoughts and feelings in relation to the previous exposure situation. Specifically, participants were encouraged to identify, dispute, and replace irrational performance beliefs with more rational performance enhancing beliefs to be used during subsequent exposure situations. By delivering REBT on the golf course under "real" performance situations, we explored the efficacy of REBT within ecologically valid sports settings. Moreover, by moving REBT out of the classroom and onto the field of play, the clinical connotations that have previously hampered the use of REBT with athletes (Turner & Barker, 2014) may be assuaged.

Following each acquisition session participants were assigned homework. In REBT, homework assignments extend and reinforce the content of REBT sessions (Turner & Barker, 2014), further develop participants' understanding of the ABCDE process and help them to apply the model independently (Dryden & Neenan, 2015). Each homework assignment, comprising both cognitive and behavioural tasks, encouraged the disputation of irrational performance beliefs, and the development of new rational performance beliefs, by prompting participants to reflect on their thoughts and feelings during play. In addition, assignments focussed on extending the exposure element of the acquisition sessions into normal golf play. Participants were encouraged (whenever possible) to challenge their avoidance action tendency by executing shots that would normally elicit anxiety. Completed homework assignments were reviewed prior to each subsequent acquisition session and served to guide the

ongoing REBT consultancy. Finally, the SPQ, IPBI, and LSAS-SR questionnaires were administered one week after the first and third acquisition sessions.

REBT integration. Integration commenced approximately two weeks after acquisition and required participants to independently apply REBT into their actual performance over four successive rounds of golf. Prior to the commencement of integration, each participant was provided with a reading assignment (see Turner & Barker, 2014) to reinforce their understanding of the REBT process and the techniques that had been used during acquisition. This comprised one side of A4 paper on maintaining and enhancing REBT gains (Ellis & Dryden, 1997). In addition, a booklet was provided for them to record and reflect upon their golfing performance, thoughts, and feelings during this time. The practitioner discussed the reflections with each participant to ensure sufficient knowledge, and appropriate application, of the ABCDE framework. One week following integration, the SPQ, iPBI, and LSAR-SR were administered. One month after that, and immediately prior to the social validation interview, the SPQ, iPBI and LSAS-SR were administered for the final time. Participants were then fully debriefed and thanked for their time.

Analytic Strategy

Within idiographic single-case research designs, small changes in variables can lead to substantial differences for athletes (Barker, McCarthy, Jones, & Moran, 2011). Consequently, we visually inspected tabulated (Table 1) and graphed data (see Figure 1) for each participant and for each dependent variable, to determine whether intervention effects had occurred (e.g., Barker & Jones, 2008; Neil et al., 2013; Turner & Barker, 2013). We used this approach (over statistical analysis) to emphasize the practical (due to the exploratory nature of this study) rather than the statistical significance of the intervention effects on participant data (see Hrycaiko &

Martin, 1996). Moreover, the small number of data-points across the study did not allow the assumptions underlying the use of parametric tests or indeed checks for serial dependency to be fulfilled (Ottenbacher, 1986). We used the following criterion to evaluate the intervention. Intervention effects were thus determined when; (a) the effect is replicated across participants, (b) the effect occurred quickly following the intervention, (c) there are few overlapping data points between baseline and intervention phases, and (d) the size for the change from baseline is substantial (Hrycaiko & Martin, 1996). These criteria were adopted because of the exploratory nature of our study and the difficulties in fulfilling stringent visual analysis criteria (Kazdin, 2011). That is, in the present study, the collection of repeated measures does not fit with the needs of the participant(s) and or situation. To aid clarity in the visual analysis of each participant's data, and to adhere to the idiographic nature of the study, the results are structured by participant rather than by variable (e.g., Thelwell & Greenlees, 2001).

Results

Participant 1

Visual inspection of data (see Table 1) revealed a substantial reduction in subjective performance issues (-52.63%), demandingness (-25.81%), LFT (-44%), awfulizing (-40%), depreciation (-22.22%), and social anxiety (-76.92%), from baseline to social validation phases. In addition, subjective performance anxiety substantially reduced from the first acquisition session to the last (-27.27%). To be clear, participant 1 went from a score of 33 which reflects moderate anxiety, to a score of 24 which reflects little anxiety.

Across all variables there was an immediate reduction from baseline to REBT education except for depreciation, which remained stable. All variables continued to

decrease across the acquisition phase, apart from social anxiety, which remained stable. At the integration phase, there were small increases in demandingness (4.35%) and depreciation (8.33%), and small decreases in subjective performance issues (-10%), LFT (-6.67%), awfulizing (-5.88%), and a large decrease in social anxiety (-30%). At the social validation phase, there is a small increase in depreciation (7.69%), and small decreases or stabilization in subjective performance issues (0%), demandingness (-4.17%), LFT (0%), and awfulizing (-6.25%). There is a more substantial decrease in social anxiety from integration to social validation (-57.14%). Final, there were no overlapping data points from baseline to any of the intervention phases.

Participant 2

Visual inspection of data (see Table 1) revealed a substantial reduction in subjective performance issues (-38.89%), demandingness (-40.63%), LFT (-32.35%), awfulizing (-40%), depreciation (-13.33%), and social anxiety (-100%), from baseline to social validation phases. In addition, subjective performance anxiety substantially reduced from the first acquisition session to the last (-23.33%). To be clear, participant 2 went from a score of 30 which reflects moderate anxiety, to a score of 23 which reflects little anxiety.

There was an immediate reduction from baseline to REBT education in demandingness (-21.88%), LFT (-4%), awfulizing (-20%), and social anxiety (-23.08%), but there was a slight increase in depreciation (6.67%), and a stabilization in subjective performance issues (0%). Across the acquisition phase there were reductions in all variables apart from LFT, which increased (8%). At the integration phase, there were further decreases in all variables apart from depreciation, which stabilized. At the social validation phase there was a small decrease in depreciation (-

7.14%) and a stabilization in social anxiety (0%), whereas all other variables increased. Finally, there was one overlapping data point from baseline to REBT education in depreciation only.

Participant 3

Visual inspection of data (see Table 1) revealed a substantial reduction in subjective performance issues (-60%), demandingness (-42.31%), LFT (-48.15%), awfulizing (-44.44%), depreciation (-47.06%), and social anxiety (-100%), from baseline to social validation phases. In addition, subjective performance anxiety substantially reduced from the first acquisition session to the last (-35.29%). To be clear, participant 3 went from a score of 34 which reflects moderate anxiety, to a score of 22 which reflects little anxiety.

There was an immediate reduction from baseline to REBT education in LFT (-14.81%), depreciation (-29.41%), and social anxiety (-100%), but there was an increase in demandingness (19.23%), and stabilization in subjective performance issues (0%) and awfulizing (0%). Across the acquisition phase there were reductions in all variables apart from depreciation, which increased (16.66%), and social anxiety, which remained stable (0%). At the integration phase, there were further decreases in awfulizing (-14.29%) and depreciation (-14.29%), but increases in subjective performance issues (5.88%), demandingness (4.76%), and LFT (7.69%). There was stabilization in social anxiety (0%) at the integration phase. At the social validation phase demandingness (-31.82%), awfulizing (-16.67%), and depreciation (-25%) decreased, while subjective performance issues, LFT, and social anxiety remained stable (0%). Finally, there was one overlapping data point from baseline to REBT education in demandingness only.

In summary of participant data, subjective performance issues, irrational beliefs, and social anxiety decreased over the data collection phases. Although some phases show slight increases, the data is highly suggestive of a downward trend in the target variables from baseline to social validation phases. That is, all participants across all variables demonstrated substantially lower scores at the social validation phase than at baseline. Finally, there were very few ($n = 2$) overlapping data points.

Social Validation

In the social validation audio-recorded telephone calls, participants reported that they were less worried about facing shots that had previously elicited anxiety. For example “I’ve been much more relaxed lately about playing ‘those’ shots ... they’re much improved” (Participant 1) and “the fear factor has gone ... I feel at ease with them” (Participant 2). In addition, there was evidence that participants had started to modify their irrational beliefs. Participant 2 commented “I still want to hit it close but I don’t have to ... it’s not going to affect my day” and “everybody wants to play well, but who does all of the time? ... I’m the same as everybody else, we all mess stuff up”. Similarly, Participant 3 had rationalized the impact of “unfriendly banter” arguing “It hurts because I still play bad shots ... and they won’t leave it ... but hey, how can that really effect how I move the club through the ball ... ‘sticks and stones’ and all that”. Broadly, participants reported that the intervention had helped them to be more rational, less anxious and more confident about their golf. Importantly, all participants suggested that their short-game had improved as a result of the REBT.

In addition, data suggested that participants felt the REBT intervention had been a positive experience ($M = 6.67$, $SD = .58$), was useful ($M = 7.00$, $SD = .00$) and would lead them to modify their thoughts and behaviours ($M = 5.50$, $SD = .55$). Participants considered logical and rational beliefs to be important for their golf

performance ($M = 6.00$, $SD = .00$). Further, all participants reported being less anxious about their “problem” shots, able to control their frustration when things didn’t go well and enjoying their golf more. Further evidence to support the efficacy of the intervention is illustrated in the following passages:

... You know, I’ve almost become too relaxed, I’m certainly more accepting of it all ... I look forward to playing now whereas, at one time that had gone ... and do you know what? I can actually play these shots, happy days. (Participant 1)

... I hardly considered the phrase ‘rational’, now that’s become my ‘go-to’ word ... the short shots still occasionally make me think ‘oh no’ ... but then I just remember, back off, and then get on with it ... after all, I was a car dealer, I’m never going to earn a living playing golf am I, so what’s the point of worrying ... just enjoy it”. (Participant 2)

Yes the fear has well and truly gone ... I’m playing ‘proper’ golf shots and people have noticed ... now I look at them and think, why are they going berserk, that’s not going to help is it. One of them actually said the other day that I wasn’t as much fun to play with since I ‘sorted myself out’ ... amazing eh, who’s laughing now?” (Participant 3)

Finally, all participants said they would recommend REBT to other golfers.

Discussion

This study reports an idiographic single-case examination of the effects of REBT on the social anxiety of three amateur golfers. This study supports the findings of past research that REBT can reduce performance anxiety (Turner & Barker, 2013) and social anxiety (e.g., Tulbure et al., 2015). Specifically, visual analyses of the data

indicate that for all participants the intervention reduced irrational performance beliefs, golf-specific anxiety, and social anxiety levels. The results are strengthened by adherence to inspection criteria used to determine meaningful change (Hrycaiko & Martin, 1996). Namely, reductions in targeted variables were substantial and occurred immediately following REBT, were replicated across the participants, and incurred few overlapping data points. In addition, quantitative and qualitative (social validation) data collected one month post-intervention illustrated that meaningful changes in the hypothesised direction had been maintained, supporting the efficacy of REBT to facilitate longer-term change (Turner et al., 2015). Further, social validation supports the visual analysis findings, where social evaluation is put into perspective and the fear of playing certain shots is alleviated. This is the first published study to apply REBT to social anxiety in athletes, adding to the literature concerning the use of REBT to reduce anxiety in athletes (e.g., Turner & Barker, 2013), within a different sport than has been previously investigated.

As well as contributing to literature demonstrating the effectiveness of REBT in reducing anxiety in athletes, the current paper also presents a methodological advancement in delivering REBT with athletes. REBT has traditionally been delivered with athletes via group-education workshops (e.g., Turner et al., 2014, 2015), or formal one-to-one counselling sessions (e.g., Cunningham & Turner, 2016, Turner & Barker, 2013). In the present study, while classroom-based REBT education was implemented in the initial intervention phase, subsequent *acquisition* and *integration* phases allowed REBT to be delivered on the golf course, thus allowing REBT to be applied in-situ with performance issues as they happened on the course. Therefore, irrational beliefs could be disputed in relation to the performance issues more directly, rather than retrospectively. The acquisition phase may have enabled a

less abstracted and more ecologically valid application of REBT. By the third acquisition session, perhaps participants had reflected upon what they had learned, and their intellectual insight into irrational beliefs had deepened. Indeed, past research has intimated a dose response to REBT, where short-term REBT education led to only short-term changes in irrational beliefs (Turner et al., 2014).

The REBT intervention delivered to participants in the current study followed a structure similar to what has been presented in past research applying CBT in sport (e.g., Neil et al., 2013), but adopted a different specific CBT approach. That is, whilst Neil et al applied a cognitive behavioral intervention informed by Lazarus (2000), we adopted an REBT intervention informed by Ellis (1999). Therefore, although the intervention structure presented in the current paper broadly follows that of other cognitive-behavioural research in sport (e.g., Neil et al., 2013), the phases used in the current paper offer novel insights into the application of REBT with athletes, and consequently extends the current methodological zeitgeist in sport (e.g., Turner, 2016). Indeed, inspection of the data shows that the largest reductions in the targeted variables occurred between the REBT education phase and the third acquisition session. This occurrence may reflect the importance of helping athletes to use REBT during performance in training, rather than in a classroom as has been reported in the past (e.g., Turner et al., 2014). By adopting an idiographic single-case design, acute changes in the targeted variables could be assessed more frequently, helping to more confidently attribute changes to the intervention (Anderson, Mahoney, Miles, & Robinson, 2002). However, because of the frequency of data collection, small fluctuations in data emerged, which may reflect natural variability rather than meaningful change.

One important and novel contribution made to the literature by the current paper is the reduction in social anxiety in the golfers. Specifically, data from two participants show that social anxiety is reduced when REBT is applied, but participant 3's social anxiety was very low at baseline and therefore data indicated a floor effect. That is, although participant 3 did show a decrease in social anxiety at the intervention onset, he already reported minimal social anxiety and therefore reductions should be viewed cautiously. The social evaluative nature of sport means that social anxiety may extend to sporting situations, with high levels of social anxiety likely to negatively affect sport performance (Norton, Burns, Hope, & Bauer, 2000). In addition, four-fifths of adults with social anxiety disorder also experience at least one other psychiatric disorder in their lifetime (Magee, Eaton, Wittchen, McGonagle, & Kessler, 1996), therefore methods to reduce social anxiety in athletes may also have mental health implications. In sum, the concomitant reductions in golf-specific anxiety and social anxiety via REBT are potentially important findings that should be followed up with further research.

The decreases in golf-specific anxiety in the present study supports some past research that reports performance improvements after REBT both quantitatively using objective performance scores (Wood et al., 2017), and qualitatively via social validation (Turner & Barker, 2013). Most notably in the current study, the largest decreases in golf-specific anxiety occurred within the acquisition phase, perhaps highlighting the importance of exposure (or flooding) in REBT (see Froggatt, 2005) to help athletes overcome the negative influence of anxiety on golf performance (see Jones, 1995). In REBT, usually as part of a behavioural homework assignment, exposure encourages participants to enter a feared situation, instead of avoiding it. Importantly in the present study, this exposure was planned and deliberate allowing

the practitioner to engage participants in meaningful and focussed conversations about the in-situ beliefs harboured by participants. After the exposure exercise, as the participants walked to the next shot, participants were encouraged to discuss what they had thought and felt in the previous exposure exercise, and to dispute any thoughts that reflected irrational beliefs. Indeed, exposure in REBT is also a method of disputation of irrational beliefs, usually awfulizing and LFT. For example, by facing the feared shot golfers were able to more fully understand that facing this adversity is not truly awful and that they can tolerate being put in the feared position. Therefore, large changes in targeted variables in the acquisition phase are likely due to the meaningful interactions between practitioner and athlete before, during, and after exposure exercises, helping the participant to more fully understand and apply REBT principles such as disputation in their performance. Researchers could investigate the exposure elements of REBT further, and perhaps utilize video and audio recording and or think aloud protocols developed in golf (e.g., Nicholls & Polman, 2008) to better understand and reflect on the exposure process.

The reductions in anxiety reported by the athletes in the current paper, alongside past research (Turner & Barker, 2013), shows that by disputing irrational performance beliefs and promoting rational performance beliefs, athletes can reduce cognitive anxiety. This is perhaps unsurprising given that irrational beliefs are posited to increase cognitive anxiety by distorting events so that they are perceived as too demanding for individuals to cope with (Dryden & Neenan, 2015; Neenan & Dryden, 2005). In addition, REBT has traditionally tied awfulizing to the experience of anxiety (David, 2003), and as such, awfulizing beliefs were disputed and replaced with anti-awfulizing beliefs both within the education phase and within the acquisition phase for the intervention in this study. For example, one participant's

awfulizing belief that “It would be a disaster if I mess this shot up” was disputed and replaced with the anti-awfulizing belief that “I’d like to hit this close but it wouldn’t be a disaster if I didn’t”. During the acquisition phase, the performance anxiety triggered by the exposure exercises decreased for all participants as the sessions progressed. As a result, participants became able to execute their “problem” shots with a smoother, less hurried and more accurate action, reflected in further reductions in golf-specific anxiety.

Limitations within this study may help guide future research. First, regarding golf-specific anxiety the findings of the current paper are promising. However, the current study did not use a validated measure of golf-specific anxiety, because one is not currently available in literature. The lack of a psychometric assessment tool for golf-specific anxiety is a challenge to those wishing to examine the anxiety responses of golfers, but one that is surmountable. We suggest that researchers examine the extent to which golf-specific anxiety is distinct from general social and performance anxiety, potentially leading to the generation of new psychometrics and or observational markers of golf-specific anxiety.

Second, with time constraints removed, future research would benefit from longer, more in-depth acquisition sessions taking place over a full 18 holes of play. This would allow for greater opportunities for REBT integration into the athletes’ psychological approach to specific shots, particularly those for which the athlete may hold golf-specific anxiety. Indeed, a merging of the intervention adopted in this study and the in-depth one-to-one approach employed in some extant REBT research (Wood, Barker, & Turner, 2016) would be welcomed. For example, as well as seven or more one-to-one REBT sessions as adopted by Wood et al (2016), researchers could work with the athlete in the field as adopted in the current study and in past

CBT research (e.g., Neil et al., 2013). This would produce a piece of research that more closely aligns with how REBT is used by practitioners in the real-world of sport psychology consultancy. The current study included what could be classed as a brief REBT intervention (e.g., Dryden, 2016), and therefore, a longer and more detailed intervention should be applied and tested using a similar idiographic method. More detailed interventions may include Skype sessions and the use of app-related technologies in between face-to-face delivery to further increase the dose-response of athletes (see Wood et al., 2016). Third, and relatedly, whilst the idiographic method used in the current study can be considered a strength, again a merger of this approach and more rigorous approaches should be considered. For example, a staggered multiple-baseline across-participants design (Barker, McCarthy, Jones, & Moran, 2011) has been used in past REBT research (Turner & Barker, 2013) and can be adopted idiographically in golf (e.g., Neil et al., 2013). This would allow individual participant details to come forth, whilst maintaining methodological rigour for augmented between-participants data analysis and interpretation.

Fourth, to consolidate the use of REBT in golf, studies should consider the application of REBT for “general play” rather than specific performance issues. This would allow objective performance to be measured over time (e.g., shots per round, changes in handicap, competition placing), something that has so far been neglected in REBT research thus far. Past research has applied REBT more generally to sporting performance (e.g., archery; Wood et al., 2016; 2017) but golf affords the practitioner many opportunities to work with athletes in a more integrated fashion, where REBT can be applied on the course, between shots and holes, in a naturalistic way. Other sports may also allow for this integrated approach, but golf with its multitude of performance indicators, including kinematic markers of skill execution

(Toner & Moran, 2011) is perhaps an ideal sport within which to test the performance effects of REBT.

In light of the results and apparent limitations of the current study, there are some practical implications that practitioners should consider when applying REBT with golfers. Practitioners working in golf and also within other sports should consider applying REBT in ecologically valid settings. In the current study, the practitioner was able to use practice rounds to help the athletes to acquire and integrate REBT in golf performance. The present data indicates that marked changes in target variables occurred as a result of this approach. Therefore in other sports, where the practitioner is less able to become as involved in practice, ways in which breaks in play can be used for on-field REBT reflection and integration should be exploited. For example, in cricket it is possible to use breaks between balls in practice nets for those batting or bowling to engage athletes in REBT relevant conversations.

Homework assignments formed an important part of the intervention in this study and are recognized as a vital component of the work done with clients when employing REBT (Ellis & Dryden, 1997). However, as is typical in the research examining REBT in sport (see Turner, 2016 for a review) homework was prescriptive, as opposed to negotiated (Dryden, 2009) and did not include emotive homework assignments. That is, participants were set cognitive (e.g., bibliotherapy) and behavioural (e.g., exposure) assignments, rather than tasks that centred on the participants' emotions. In REBT, tasks such as role-playing (Ellis & Dryden, 1997) and rational-emotive imagery (REI; Maultsby, 1971) are often used to elicit and work with client emotions. Whilst role-playing would typically take place with the practitioner present, REI can occur independently and involves the client visualising the situation in which they experience maladaptive emotions and focusing rational

beliefs to facilitate emotional change (e.g., Maultsby). Researchers have not investigated the effects of REI in athletic performance, but imagery aligns with ‘the Canon’ psychological skills training (PST; Anderson, 2009) that many practitioners may utilise with the athletes they work with. REI may be a technique that is more easily integrated into the work of practitioners and may as a result provide a useful emotive assignment for athletes undergoing REBT.

The present study contributes to the extant literature by providing an idiographic single-case examination of the effects of REBT on social anxiety in three amateur golfers. This study supports the effectiveness of REBT with athletes in a different sport than has been previously investigated, but also extends the research by applying REBT in a “real-world” performance setting, offering methodological advances and providing clear implications for future research and practice. Data indicated that REBT was successful in reducing irrational performance beliefs, golf-specific anxiety, and social anxiety. It is hoped that this study will encourage further research into the application of REBT in golf, where the opportunity for the practitioner to work alongside the athlete on the golf course to integrate REBT is of particular interest and importance.

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Table 1. All self-report variables across time-points for all three participants (percentage change in parentheses).

Measure	Participant	Baseline	REBT Education	Acq 1	Acq 2	Acq 3	Integration	Social Validation
GSAQ	1	38	27 (-28.95) ^a	24	/	20 (-25.93) ^b	18 (-10) ^c	18 (0) ^d
	2	36	36 (0) ^a	29	/	27 (-25) ^b	20 (-25.93) ^c	22 (10) ^d
	3	45	45 (0) ^a	22	/	17 (-62.22) ^b	18 (5.88) ^c	18 (0) ^d
Demandingness	1	31	28 (-9.68) ^a	24	/	23 (-17.86) ^b	24 (4.35)	23 (-4.17)
	2	32	25 (-21.88) ^a	22	/	19 (-24) ^b	18 (-5.26)	19 (5.56)
	3	26	31 (19.23) ^a	21	/	21 (-32.26) ^b	22 (4.76)	15 (-31.82)
LFT	1	25	24 (-4) ^a	21	/	15 (-37.5)	14 (-6.67)	14 (0)
	2	34	25 (-26.47) ^a	21	/	27 (8)	21 (-22.22)	23 (9.52)
	3	27	23 (-14.81) ^a	18	/	13 (-43.48)	14 (7.69)	14 (0)
Awfulizing	1	25	20 (-20) ^a	18	/	17 (-15)	16 (-5.88)	15 (-6.25)
	2	30	23 (-23.33) ^a	20	/	21 (-8.70)	15 (-28.57)	18 (20)
	3	27	27 (0) ^a	17	/	21 (-22.22)	18 (-14.29)	15 (-16.67)
Depreciation	1	18	18 (0) ^a	14	/	12 (-33.33)	13 (8.33)	14 (7.69)
	2	15	16 (6.67) ^a	14	/	14 (-12.5)	14 (0)	13 (-7.14)
	3	17	12 (-29.41) ^a	13	/	14 (16.66)	12 (-14.29)	9 (-25)
Social Anxiety	1	13	10 (-23.08) ^a	10	/	10 (0)	7 (-30)	3 (-57.14)
	2	15	3 (-80) ^a	2	/	1 (-66.67)	0 (-100)	0 (0)
	3	3	0 (-100) ^a	0	/	0 (0)	0 (0)	0 (0)

SPA	1	/	/	33	27	24 (-27.27) ^e	/	/
	2	/	/	30	24	23 (-23.33) ^e	/	/
	3	/	/	34	22	22 (-35.29) ^e	/	/

Note. ^aBaseline to REBT education % change, ^bREBT education to acquisition 3 % change, ^cacquisition 3 to integration % change, ^dintegration to social validation % change, ^eacquisition 1 to acquisition 3 % change.

Figure 1. Golf-specific anxiety scores across time-points for all three participants.

