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# Effects of a Cognitive-Behavioral Intervention on Field Hockey Players' Appraisals of Organizational Stressors

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Abstract

*Objectives:* We assessed the effects of a cognitive-behavioral intervention on English field hockey players' appraisals of organizational stressors, emotions, and performance satisfaction.

*Design:* A concurrent, across-participants, multiple-baseline, single-case research design with a three months post-intervention follow-up.

*Method:* Four high-level female field hockey players participated in a four phase intervention that lasted between 24 and 26 weeks: rapport-building and observation (phase I), baseline monitoring (phase II), educating the players and facilitating acquisition of a cognitive restructuring technique (phase III), and encouraging integration of the technique during sport performance (phase IV). Questionnaires and social validation were used to record the participants' appraisals, emotions, and performance satisfaction throughout the intervention. A three months post-intervention follow-up was conducted to assess the participants' retention of the intervention effects.

*Results:* Reduced threat and loss appraisals and elevated challenge appraisals were reported immediately after Phase III had been introduced. Pleasant emotions and performance satisfaction increased while unpleasant emotions decreased throughout the intervention. Social validation immediately post-intervention and at the end of the follow-up period indicated sustained adaptive changes in each of the outcome variables.

*Conclusions:* Cognitive restructuring represents a promising technique for optimizing high-level hockey players' appraisals. Challenge appraisals and pleasant emotions appear to be linked with increased performance satisfaction and positive intervention effects can be retained for a period of three months post-intervention. Researchers should examine the effectiveness and efficacy of the cognitive restructuring technique with other populations to develop a robust evidence base for appraisal optimization in sport.

*Keywords:* cognition, stress management, thought adjustment, transactional

## Effects of a Cognitive-Behavioral Intervention on Field Hockey Players' Appraisals of Organizational Stressors

At the turn of the century, Woodman and Hardy (2001) published the first peer-reviewed empirical study that explored organizational stress in sport. Since then, many researchers (e.g., Didymus & Fletcher, 2012; Sohal, Gervis, & Rhind, 2013) have explored organizational stress with sport performers. This type of stress can be defined as "an ongoing transaction between an individual and the environmental demands associated primarily and directly with the organisation within which he or she is operating" (Fletcher, Hanton, & Mellalieu, 2006, p. 329). Researchers have recently highlighted the potentially debilitating effects that organizational stress can have for athletes in terms of burnout (Tabei, Fletcher, & Goodger, 2012) and diminished personal growth (Sohal et al., 2013). In addition, researchers have explored the factors that make organizational stress different from other types of stress (see e.g., Hanton, Fletcher, & Coughlan, 2005). These factors include the origins and nature of stressors, individuals' appraisals of stressors, and the appropriateness of interventions for managing stress (Fletcher & Hanton, 2003; Hanton et al., 2005; Woodman & Hardy, 2001).

In the current study, organizational stress is explored in the context of women's field hockey. Specifically, the focus is on individuals who are competing in the Investec Women's Hockey League, which features the 40 best field hockey teams for women in England. Teams in this league train up to five times per week, compete once or twice each week, and are often supported by a team of coaches (e.g., head coach, strength and conditioning coach). Players are not paid for their involvement with this level of hockey and, therefore, most train and compete alongside full-time study or work. Availability of formal support (e.g., for injury rehabilitation) on a pro bono basis to the athletes is usually limited to those who are competing at the highest echelons of the league. Despite the amateur nature of the hockey teams within this league, their level of performance means that players have opportunities to

be selected for international competition. This potential for international selection combined with the amateur (i.e., unpaid) nature of players' involvement and the expectation that athletes compete at the highest level of hockey in England create a context where organizational stressors are both inherent and prevalent.

Organizational stressors can be defined as "environmental demands (i.e., stimuli) associated primarily and directly with the organization within which an individual is operating" (Fletcher et al., 2006, p. 329) and researchers (e.g., Fletcher, Hanton, & Wagstaff, 2012) have highlighted the variety of organizational stressors that athletes can encounter. For example, athletes may experience high performance expectations from others, unhelpful attitudes among teammates, unclear selection criteria, lack of finances, and or lack of structure during injury rehabilitation. In addition to studying the organizational stressors that athletes may encounter, researchers are increasingly interested in the appraisal mechanisms that are pivotal during sport performers' organizational stress transactions (Didymus & Fletcher, 2012, 2014, 2017; Fletcher et al., 2012; Hanton, Wagstaff, & Fletcher, 2012; Neil, Hanton, Mellalieu, & Fletcher, 2011). Collectively, this research suggests that athletes make both negative (Hanton et al., 2012) and positive (Didymus & Fletcher, 2017) appraisals of organizational stressors. Further, it has been suggested that a variety of coping strategies are used to manage organizational stressors (e.g., Kristiansen & Roberts, 2010); that performers experience a range of emotions, attitudes, behaviors (Fletcher et al., 2012), and affective states (Arnold, Fletcher, & Daniels, 2016) during organizational stress transactions; and that appraisals influence athletes' performance satisfaction (Didymus & Fletcher, 2017).

The research in this area has often been underpinned by transactional stress theory (Lazarus & Folkman, 1984) or the cognitive-motivational-relational (CMR) theory of stress and emotion (Lazarus, 1999, 2000). These theories suggest that stress is an on-going transaction between an individual and his or her environment, that an individual will engage

in cognitive-evaluative processes to appraise the stressors experienced, and that emotions result from an interpretation of the balance between the stressor(s) experienced and the resources of the person. The theories describe four transactional alternatives (harm/loss, threat, benefit, challenge) that are the essence of stressful appraisals (Lazarus & Folkman, 1984, Lazarus, 1999). Threat and harm/loss appraisals are primarily associated with negative emotions whereas challenge and benefit appraisals are largely associated with positive emotions (Lazarus, 1999, 2000). There is a substantial body of literature that has used the CMR theory to explore the influence of emotions on sport performance (see, for a review, Campo, Mellalieu, Ferrand, Martinent, & Rosnet, 2012). Some of this research suggests that positively valenced emotions are associated with superior sport performance whereas negatively valenced emotions are related to inferior performance (e.g., Allen, Jones, & Sheffield, 2011). Other researchers, however, argue that emotions are idiosyncratic and that both positive and negative emotions can be perceived as facilitative and or debilitative for performance (see the individual zones of optimal functioning model; Hanin, 1997, 2000).

Despite the aforementioned research highlighting the associations between appraisals, emotions, and performance, and the known importance of organizational stress in athletes' experiences (see e.g., Fletcher & Wagstaff, 2009), interventions that aim to optimize performers' appraisals of organizational stressors are yet to be developed and tested. Indeed, the intervention literature (e.g., Moore, Vine, Wilson, & Freeman, 2015) that has been conducted in sport has focused almost exclusively on athletes' competitive stress experiences. Rumbold, Fletcher, and Daniels (2012) highlighted that, while interventions have been effective in reducing state and trait anxiety (Thomas, Mellalieu, & Hanton, 2008), little is known about stress management interventions (SMIs) for the wider stress process, including the optimization of appraisals. One approach to appraisal optimization involves secondary level stress management. This level of SMI has been described as the "…management of

experienced stress by increasing awareness and improving the stress management skills of the individual through training and educational activities" (Cooper & Cartwright, 1997, p. 8). Thus, secondary level SMIs are helpful when the aim is to enhance individuals' abilities to manage stress effectively and when options to change the environment to remove stressors are not feasible or are too costly (Siu, Cooper, & Phillips, 2014). This is in contrast to other levels of SMI where the aim is to adapt the environment to reduce or eliminate stressors (i.e., primary level interventions) or to use techniques such as counselling to address the outcomes of stressful experiences (i.e., tertiary level interventions). Although sport psychology researchers have rarely framed applied research as secondary level SMIs, this continues to be a popular and successful approach in the occupational and organizational psychology literature (see, for a review, Giga, Noblet, Faragher, & Cooper, 2003). Secondary level SMIs typically involve cognitive-behavioral therapy (CBT) and or relaxation techniques and have been shown to be effective in improving employee health and business performance, for example (Giga et al., 2003).

CBT (e.g., Beck, 2011) refers to a family of interventions and a general scientific approach to behavior change that has been shown to be effective with sport (e.g., Neil, Hanton, & Mellalieu, 2013), clinical (see, for a review, Butler, Chapman, Forman, & Beck, 2000), and occupational (e.g., Bond & Bunce, 2000) populations. The basic premise of CBT is that cognitions, emotions, and behaviors are closely related and that negative automatic thoughts lead to maladaptive emotions and behaviors (Beck, 2011). The underlying principles of CBT, therefore, align well with those that underpin Lazarus' (1999, 2000) CMR theory of stress and emotion. CBT is not a single intervention protocol but refers to a variety of techniques that focus on the importance of cognitive processes for emotion regulation (cf. Hofmann, Asmundson, & Beck, 2013). One such technique is cognitive restructuring, which aims to change an individual's beliefs about stressors to reduce negative appraisals (Larsen &

Christenfeld, 2011). In addition to adjusting an individual's perception of stressors, cognitive restructuring is thought to causally improve undesirable emotional responses and behaviors. This may be useful in sport because of the aforementioned link between emotions and performance. Indeed, sport psychologists have suggested that cognitive restructuring may be beneficial for high level sport performers and, in particular, for adjusting athletes' appraisals of stressful situations (Didymus & Fletcher, 2017; Neil et al., 2013; Rumbold et al., 2012). Although cognitive restructuring has been successfully integrated into sport psychologists' applied research (e.g., Thomas, Maynard, & Hanton, 2007), the efficacy of this technique is yet to be explored in an organizational context in sport.

McArdle and Moore (2012) encouraged the exploration of sport-specific interventions that produce cognitive change in athletes. Other sport psychologists have acknowledged that intervention research should be of paramount importance to better understand the most appropriate ways to manage performers' stress (e.g., Thomas et al., 2008) and, specifically, the cognitive-evaluative process of appraising (Rumbold et al., 2012). Further, Hanton et al. (2012) called for research that improves understanding of how best to tackle negative appraisals of organizational stressors. In other works, Fletcher and colleagues (e.g., Fletcher et al., 2006; Fletcher & Wagstaff, 2009; Rumbold et al., 2013) highlighted a need for intervention studies that target organizational stress in sport yet no published research has addressed this void to date. With these calls for research and the aforementioned gaps in knowledge in mind, the purpose of this study was to assess the effects of a cognitive-behavioral intervention on English field hockey players' appraisals of organizational stressors, emotions, and performance satisfaction.

## Method

### Design

Organizational stress researchers have highlighted the idiographic nature of athletes'

appraisals (Didymus & Fletcher, 2012, 2014; Hanton et al., 2012) and, thus, a single-case research design was appropriate to examine intra-individual changes during this study. This design was advantageous because it allowed demonstration of intervention efficaciousness at an individual level, promoted a naturalistic setting to assess and observe participants, enabled the researchers to provide an individualized intervention, and allowed intervention effects that may have been masked by group designs to be detected (Barker, McCarthy, Jones, & Moran, 2011; Hrycaiko & Martin, 1996). Further, Swain and Jones (1995) suggested that single-case designs are particularly useful for research with high-level sport performers because their performance may not improve substantially from pre-intervention levels.

A concurrent, across-participants, multiple-baseline (Kazdin, 2010) variation of the single-case design was used. Concurrent measurement of each participant controlled for threats to internal validity (Barker et al., 2011). Internal validity was also enhanced by replicating the intervention within and across participants (Kazdin, 2010). The outcome variables were consistent for each participant, which adhered to the across-participants aspect of the design. The multiple-baseline element negated the need for a control group because the baseline measurements for each participant acted as her control data (Barker et al., 2011). A noteworthy strength of the multiple-baseline design is that a stable baseline, which changes only when the intervention is introduced, indicates that intervention effects are not due to the influence of uncontrolled variables (Barker et al., 2011).

**Participants**

Five female hockey players ($M_{age}$ = 19.60, *SD* = .55 years, $M_{experience}$ = 9.40, *SD* = 1.34 years) volunteered for this study. At the time of data collection, each participant was training with and competing regularly for the same team that was part of the Investec Women's Hockey League. This team was purposefully sampled (Patton, 2002) because a previous study (Didymus & Fletcher, 2017) concluded that some of the players in the team

experienced a variety of organizational stressors, predominantly appraised these stressors as a threat or with a sense of loss, and that these appraisals were associated with performance dissatisfaction. The purposeful approach to sampling aimed to maximize ecological validity by recruiting individuals in a way that represents real-life situations (i.e., recruiting those who require assistance).

**Measures**

**Appraising.** Primary appraisals of organizational stressors were assessed using the Appraisal of Life Events scale (ALE; Ferguson, Matthews, & Cox, 1999), which is an adjective checklist that assesses appraisals (threat, challenge, loss) of recalled events. Each adjective is scored on a six-point rating scale (where 0 = 'not at all' and 5 = 'very much so'). In a series of five related studies Ferguson et al. (1999) demonstrated that the three dimensions of the ALE scale had excellent factor congruence by method[2] (range .94-.99); a factor structure that was confirmed using LISREL confirmatory factor analysis; acceptable test-retest coefficients (range .48-.90); acceptable internal reliabilities (range .75-.91); no significant associations with social desirability; and construct validity related to personality, coping, and psychological (ill) health. The instructions that accompanied the ALE scale asked each participant to describe, in her own words, the most recent organizational stressor that she had experienced during training or competition. The instructions then invited the participants to use the adjective checklist to describe how they appraised the stressor at the time that it occurred.

**Emotions.** Emotions were assessed using the Sport Emotion Questionnaire (SEQ; Jones, Lane, Bray, Uphill, & Catlin, 2005). The SEQ is a 22-item checklist that was designed to elicit respondents' emotions in terms of anger, anxiety, dejection, excitement, and

[2] Factor congruency by method refers to the extent to which a factor structure can be reproduced by different methods of extraction and rotation. Coefficients range from 0 (cannot be reproduced) to 1 (can be perfectly reproduced). The formulas for these coefficients can be found in Gorsuch (1983).

happiness. These five factors represent two higher-order dimensions: pleasant (excitement and happiness) and unpleasant (anger, anxiety, and dejection) emotions. Each word on the SEQ is scored on a five-point rating scale (where 0 = 'not at all' and 4 = 'extremely') and the instructions asked participants to use the words to describe how they felt about the stressor that was described on the ALE at the time that it occurred. The SEQ has been reported to be a reliable measure of both pre- (Cronbach's alpha .81-.88) and post-competition (Cronbach's alpha .70-.89) emotions (Allen et al., 2011; Jones et al., 2005).

**Performance satisfaction.** Due to the difficulty of objectively measuring individual performance in a team sport and the link between appraisals of organizational stressors and performance satisfaction (Arnold et al., 2016; Didymus & Fletcher, 2017), this study used a measure of subjective performance satisfaction. Based on the procedure outlined by Levy, Nicholls, and Polman (2011), the participants rated performance satisfaction on a single-item 11-point rating scale (where 0 = 'totally dissatisfied' and 10 = 'totally satisfied'). The performance satisfaction measure instructed players to record how satisfied they were with their individual performance, rather than the performance of the team, at the time that the stressor that was described on the ALE occurred.

**Social Validation.** Hrycaiko and Martin (1996) suggested that research should evaluate the practical importance of intervention effects. A 10-item post-intervention social validation measure was developed for this study using previous research (Page & Thelwell, 2013). Participants responded to questions that assessed their expectations, their thoughts about changes in the outcome variables (i.e., appraisals, emotions, and performance satisfaction), the 'significance' of these changes, and the acceptability and usefulness of the intervention using an eight-point rating scale (where 0 = 'not at all' and 7 = 'very much so'). An open-ended question was included at the end of the measure to gather additional information about the participants' experiences (Mellalieu, Hanton, & Thomas, 2009).

**Procedure**

An application for ethical approval was reviewed and approved by the research ethics committee at the authors' institution. To begin participant recruitment, the first named author approached the head coach and players of one field hockey team and explained the nature of the study. The players who agreed to be screened for participation completed the ALE scale (Ferguson et al., 1999), the SEQ (Jones et al., 2005), and the performance satisfaction measure (see Levy et al., 2011) on four occasions over a two week period of training and competition. During this screening process, the researchers reviewed the players' responses and paid particular attention to the ALE scale scores because high threat and loss scores were the key indicators of suitability for participation in the intervention. Those players who consistently appraised organizational stressors as a threat or with a sense of loss were invited to participate. On invitation, the players were informed that they would need to commit to the intervention and that they would be asked to regularly practice the techniques that would be learnt (see Neil et al., 2013). All of the participants who were invited agreed to take part in the study and provided written informed consent.

Four phases were adopted for the intervention: 1) rapport-building and observation, 2) baseline monitoring, 3) educating the players and facilitating acquisition of a cognitive restructuring technique, and 4) encouraging integration of the technique during sport performance (see e.g., Barker et al., 2011). Throughout each phase the first author attended two pitch-based training sessions each week and some gym-based sessions and home matches. Each phase of the intervention was conducted by the first author who had completed British Psychological Society (BPS) accredited courses in cognitive-behavioral therapy and stress management, and was in the process of gaining accreditation for psychology support with the British Association of Sport and Exercise Sciences. The second named author, who is a Health and Care Professions Council registered sport and exercise psychologist, acted as

supervisor and mentor throughout the intervention.

**Phase I: Rapport-building and observation.** The first phase of the intervention began at the start of the players' pre-season hockey training and finished half way through the competitive season. In total, phase I lasted for a period of 12 weeks and involved the first named author integrating with and observing the team during training and competition. A period of 12 weeks was deemed appropriate for new members of the team and those who had not previously met the researcher to adjust to her presence. In addition, this period of time allowed the researcher to show commitment to the team, to build confidence among the players and coaches in her ability to do her job (Beckmann & Kellmann, 2003), and to build trust and rapport with the players and coaches (Andersen, 2000).

**Phase II: Baseline monitoring.** Phase II began immediately after phase I and lasted between two and four weeks, depending on the stability of each participant's questionnaire scores. On the Monday of each week from this point forward (i.e., during phases II, III, and IV, and during the three-months post-intervention follow up phase), each participant was given two copies of each questionnaire (the ALE scale, the SEQ, and the performance satisfaction measure) and was instructed to complete one copy of each immediately before a training session or a hockey match and one copy of each immediately after a training session or a hockey match. This procedure was in place to obtain a balanced view of the participants' appraisals, emotions, and performance satisfaction before and after their hockey participation. Participants were required to return completed questionnaires to the researcher at weekly intervals. The first author monitored each participant's responses and liaised with the second author to decide when the responses were stable or progressing in the opposite direction to the desired intervention effects (i.e., elevated threat and or loss appraisals, elevated negative emotions, and or decreased performance satisfaction; Hrycaiko & Martin, 1996). Each participant was moved onto phase III of the intervention once the researchers agreed on her

suitability to do so. Thus, in accordance with the multiple-baseline element of the intervention, each participant moved to Phase III at a different point in time.

**Phase III: Educating the players and facilitating acquisition of a cognitive restructuring technique.** Phase III represented the first of two intervention phases and consisted of eight 60-minute one-to-one sessions. The sessions were conducted at weekly intervals by the first author. At the end of each session, the participant and the researcher agreed a between-session task (Beck, 2011) that aimed to facilitate transfer of the intervention content to everyday life (Fehm & Mrose, 2008). The eight sessions in this phase adhered to the following structured format:

***Sessions one and two: Education.*** The first two sessions of phase III were the same for each participant. They focused on the prominent organizational stressor(s) that each participant was experiencing and familiarized her with CBT. The familiarization section focused on the following three areas: 1) education, which consisted of an introduction to the differences and relationships between cognitions (i.e., thoughts), emotions (i.e., feelings), behaviors, and physiology; 2) activities, which involved interactive tasks to help participants distinguish between cognitions and emotions and understand the impact of negative automatic thoughts on emotions and behaviors; and 3) tools, which introduced a thought adjustment sheet[3] (TAS) that would be used to restructure negative automatic thoughts. The TAS contained five columns that asked each player to: 1) describe a prominent organizational stressor that she was currently experiencing, 2) record her negative automatic thoughts about the stressor, 3) record her emotions related to the stressor, 4) develop and record more functional restructured thoughts, and 5) write down the emotions that might subsequently be felt. At the end of the second session the researcher discussed the links between negative automatic thoughts and appraisals with each participant (e.g., ‘I must play well or I will ruin

[3] For a copy of the thought adjustment sheet, contact the corresponding author. See also Figure 6.

my chances of selection' signifies a threat appraisal) and confirmed her understanding of how the TAS would be used for appraisal optimization.

***Session three: Acquisition stage one.*** This session began with a re-cap of the TAS. The participant then completed the first three columns on the TAS in relation to the prominent organizational stressor(s) that she was experiencing. This activity represented the start of the cognitive restructuring process because the participants began to recognize their thoughts (appraisals), emotions, and behaviors in relation to the recalled stressor(s). During the between-session task, each participant completed the first three columns on the TAS in relation to the organizational stressor(s) that she experienced between sessions three and four.

***Session four: Acquisition stage two.*** During this session, the researcher encouraged each participant to discuss the parts of the TAS that she had completed since session three. The aim of these discussions was to monitor the players' progress, answer questions, and develop a strong foundation for the core period of cognitive restructuring (cf. Froján-Parga, Calero-Elvira & Montaño-Fidalgo, 2011). The researcher then offered examples of more functional thoughts and introduced the participants to the last two columns of the TAS. The participants used the examples to begin developing their own personally significant restructured thoughts about organizational stressors (cf. Froján-Parga et al., 2011) and recorded these thoughts using the fourth column of the TAS. The relationships between restructured thoughts, emotions, and performance were then discussed. The participants continued to complete the first three columns on the TAS for their between-session task.

***Sessions five, six, seven, and eight: Acquisition stage three.*** Sessions five to eight involved the first author guiding the participants through cognitive restructuring. This self-directed process was adapted from Beck's (2011) functional belief protocol. The participants were asked to record functional alternatives to their negative automatic thoughts about organizational stressors using the TAS and to describe the emotions that they believed would

ensue. The between-session tasks were the same each week and involved the participants completing each of the five columns on the TAS for each organizational stressor that they experienced. During each session, the researcher monitored the completed TASs and discussed the influence of the cognitive restructuring procedure on sport performance.

**Phase IV: Encouraging integration of the technique during sport performance.** This second intervention phase was introduced immediately after the education and acquisition phase, began with one 60-minute one-to-one session that outlined the procedure for the phase, and lasted for a period of two weeks. This phase involved the participants using the restructured thoughts that had been developed in phase III during their sport performance. The participants were instructed to remain aware of the organizational stressors, associated thoughts, and subsequent emotions that they experienced and to continue using the TAS to record new negative automatic thoughts and functional alternatives. The researcher sought verbal confirmation of understanding from the participants (Neil et al., 2013) before they began to formally integrate the technique with their performance. During this phase, each performer met with the researcher once per week so that their questionnaires and TASs could be collected and monitored. At the end of Phase IV, each participant attended an individualized 60-minute de-briefing session. During this session, the researcher presented each participant with graphical representations of her questionnaire data from each phase of the intervention and asked the participants to complete the social validation questionnaire.

**Three Months Post-Intervention Follow-Up**

Post-intervention assessments are important to identify long-term intervention effects (Rumbold et al., 2012). Thus, a follow-up procedure was used in this study to assess the participants' retention of the intervention effects. The aforementioned questionnaires were completed by the each of the participants three months post-intervention. To ensure consistency, each participant completed one copy of each questionnaire on the same number

of occasions as she did during the baseline monitoring phase. At the end of the follow-up period, the participants were asked to re-complete the social validation questionnaire.

**Data Analyses**

The data analyses consisted of three stages. First, the questionnaire data were inputted into a Microsoft® Excel® document and visually inspected (cf. Kinugasa, Cerin, & Hooper, 2004) to determine whether the cognitive restructuring technique had influenced the participants' appraisals, emotions, and or performance satisfaction. This approach was used instead of statistical analyses due to a lack of consensus regarding which statistical technique should be used to analyze single-case data (Gage & Lewis, 2013), and based on knowledge that an individualized research design emphasizes practical rather than statistical significance (Barker et al., 2011). When using visual analysis to examine the effects of an intervention, greater confidence can be assured if the following conditions are satisfied: (a) baseline measures are stable or in the opposite direction to that expected for the intervention effects, (b) an effect is replicated both within and across participants, (c) few overlapping data points are observed between the baseline and intervention phases, (d) the effect occurs soon after the intervention is introduced, (e) a large effect is observed during the intervention phase when compared to the baseline phase, and (f) the results are consistent with accepted theory (Hrycaiko & Martin, 1996). During the second stage of the analyses, graphical accounts of the data were created (Dixon et al., 2009) to facilitate visual analysis of changes in the outcome variables over time. Illustrative flow charts were also created to highlight examples of the organizational stressors that were recalled by the participants and to provide a visual overview of exemplar appraisal, emotion, and performance satisfaction data from the baseline and intervention phases. The third stage involved the analysis of social validation data. Quantitative data from the social validation questionnaire were entered into a Microsoft® Excel® document and descriptive statistics were calculated for each question. The qualitative

data were transcribed verbatim into a Microsoft® Word® document and analyzed using inductive thematic analysis procedures at a semantic level (Clarke & Braun, 2016). This type of analysis was used to identify patterns in the data and involved familiarization with the data, generating and grouping codes, searching for and identifying themes, reviewing the themes, naming the themes, and producing this article.

## Results

One of the five participants withdrew from the study during baseline monitoring due to an injury that terminated her hockey career. Each of the remaining four participants ($M_{age}$ = 19.50, *SD* = 0.58 years; $M_{experience}$ = 9.25, *SD* = 1.50 years) completed the intervention voluntarily and without remuneration. Each of the participant's data relating to appraisals, emotions, and performance satisfaction are presented as X Y (scatter) graphs (see Figures 1-5; Dixon et al., 2009) and as descriptive statistics (Table 1). Social validation data are presented as descriptive statistics (Table 1) and verbatim quotes that represent four themes from the qualitative data. One example of a completed TAS (see Figure 6) is included to demonstrate how this tool was used and two illustrative flow charts (see Figure 7) are presented to show changes in participants' appraisals, emotions, and performance satisfaction.

### Appraisals

Figures 1 to 4 and Table 1 suggest that each participant experienced intervention effects on their appraisals of organizational stressors. The organizational stressors that were reported during the intervention included availability of equipment, balancing national training camps and league training, deselection, lack of access to gym facilities, lack of communication from the coach, lack of effort from teammates, monotony of training, poor umpire decisions, presence of a crowd at a big game, presence of England selectors at a big game, relationships with teammates, selection, snow causing training to be cancelled, timing

of fitness testing, training overload, and unhelpful comments from teammates. The intervention effects were inter-individual in terms of the changes to appraisals and the point in time that the effects occurred. To illustrate, participants A, B, and D experienced immediate intervention effects on each type of appraisal and they began to appraise the organizational stressors that they recalled as more of a challenge than a threat or a loss between sessions three and four of phase III (see Figures 1, 2, and 4). Participant C also experienced immediate intervention effects on each type of appraisal but began to appraise stressors as more of a challenge than a threat or a loss after session two of phase III (see Figure 3). Once participants A, B, and C had begun to appraise stressors as more of a challenge than a threat or a loss, challenge remained the highest scored appraisal throughout the intervention. For Participant D, however, challenge appraisals were predominantly experienced during the intervention but threat and loss appraisals scored higher than challenge appraisals at one data collection point between sessions four and five of phase III (see Figure 4). The organizational stressor recalled at this point in time was temporary deselection from the first hockey team.

Each participant's baseline ALE scores were relatively stable and progressing in an opposite direction to the expected intervention effects when the intervention was introduced. Of the 240 units of data relating to appraisals, 11 (5%) that were recorded during the intervention and follow-up phases overlapped with baseline data. The majority ($n$ = 9) of these overlapping units of data were reported during the first three weeks of phase III. There were observable differences in the participants' appraisals during the intervention phases when compared to the baseline monitoring phase (see Figures 1-4).

**Emotions**

Each of the participants scored unpleasant emotions (anxiety, dejection, anger) higher than pleasant emotions (excitement, happiness) during the baseline monitoring phase (see

Figures 1-4 and Table 1). This pattern of emotions was reversed by the intervention and the effects were retained by the participants. To illustrate, anger (participant A), anxiety (participants B and D), and dejection (participant C) were the highest scored emotions during baseline monitoring. However, excitement (participants A, B, and C) and happiness (participant D) scored highest during phase IV of the intervention. While pleasant emotions were scored higher than unpleasant emotions during the intervention phases, both pleasant and unpleasant emotions were experienced to some degree throughout the intervention (see Figures 1-4 and Table 1).

The baseline SEQ scores were relatively stable when the intervention was introduced. Of the 400 units of SEQ data, 53 (13%) that were recorded during the intervention phases overlapped with those collected during baseline monitoring. Forty-three (81%) of the overlapping units of data occurred during the first four weeks of phase III. There were observable differences in the participants' emotions during the intervention phases when compared to the baseline monitoring phase (see Figures 1-4).

**Performance Satisfaction**

Figure 5 shows that each participant's performance satisfaction rose from baseline monitoring to the intervention phases and from the intervention phases to the follow-up period (see also Table 1). During baseline monitoring, participants A and D reported decreasing performance satisfaction scores while the scores for participants B and C were unstable. Of the 160 units of performance satisfaction data, 83 (52%) that were recorded during the intervention phases overlapped with baseline data. Sixty-four (40%) of the overlapping units of data occurred during the first five weeks of phase III.

**Social Validation**

The quantitative social validation data suggest that the participants understood what was expected of them ($M$ = 6.25, $SD$ = .96), thought that improving their performance was

important (*M* = 6.50, *SD* = 1.00), and reported that the intervention was acceptable (*M* = 6.75, *SD* = .50) and useful (*M* = 6.50, *SD* = .58). Responses relating to the participants' perceptions of change indicated that the intervention improved their appraisals (*M* = 6.25, *SD* = .96), emotions (*M* = 6.00, *SD* = 1.41), and performance satisfaction (*M* = 5.50, *SD* = 1.29). Each participant reported that the changes in their appraisals (*M* = 6.25, *SD* = .50), emotions (*M* = 5.50, *SD* = 1.73), and performance satisfaction (*M* = 5.00, *SD* = 1.63) were 'significant.'

The semantic thematic analyses of participants' qualitative social validation data revealed four main themes: raising awareness of negative thoughts and emotions, more effectively managing stressors, thinking differently about organizational stressors, and seeing a link between appraisals and performance. To illustrate, participant A wrote about the intervention being useful for raising her awareness of negative thoughts and emotions: 'I am now more aware of my negative thoughts and emotions and have learnt to recognize the difference between what I'm thinking and what I'm feeling. This helps when I get on the pitch.' Participant B suggested that the intervention was particularly helpful when managing stressors relating to selection procedures: 'The study benefitted me, particularly when I was stressed about selection. I learnt to approach selection positively and this helped me to get selected again for [country].' In a different example, participant C reported that the intervention helped her to think differently about organizational stressors and to appraise these stressors as a challenge: 'The research has helped me to think in different ways about org[anizational] stressors . . . [such as] my relationship with my captain and support during injury rehab. It's changed my mind-set both on and off the pitch.' Participant D reported that the research helped to optimize her appraisals, which had a positive influence on her performance: 'It was a hugely helpful process . . . If I'm thinking about stressors as a challenge not a threat then I play better. I learnt *how* to see things as a challenge, which has helped my performance.'

**Three Months Post-Intervention Follow-Up.** The follow-up social validation data suggest that the participants' understanding of what was expected had increased (*M* = 6.50, *SD* = .58) and that the importance of improving their performance (*M* = 6.50, *SD* = 1.00) and their thoughts about the intervention in terms of acceptability (*M* = 6.75, *SD* = .50) and usefulness (*M* = 6.50, *SD* = .58) had remained the same. The data also indicate that the participants retained the intervention effects relating to appraisals (*M* = 6.75, *SD* = .50), emotions (*M* = 6.50, *SD* = 1.00), and performance satisfaction (*M* = 5.50, *SD* = .58). Each participant reported that the changes in her appraisals (*M* = 6.25, *SD* = .50), emotions (*M* = 5.75, *SD* = 1.26), and performance satisfaction (*M* = 5.50, *SD* = 1.00) remained 'significant.'

Each of the participants reported that the three month period after the intervention provided them with an opportunity to develop their cognitive restructuring skills and that these skills had improved their appraisals, emotions, and performance satisfaction. For example, participant C stated: 'The thought adjustment process is easier now I have had more time to practice. It's a normal part of what I do when I have org[anizational] stressors and it helps me to feel positive emotions and perform better.' Participant D suggested that the cognitive restructuring technique helped her to transfer her performance from training to the competition arena: 'I practice thought adjustment in training like I do my hockey so it comes naturally in matches and nine times in ten I'm more satisfied with how I perform.'

## Discussion

This study assessed the effects of a cognitive-behavioral intervention on English field hockey players' appraisals of organizational stressors, emotions, and performance satisfaction. Previous research has found that athletes' appraisals of organizational stressors are a pivotal factor in stress transactions (Didymus & Fletcher, 2012, 2014) and that challenge appraisals are associated with positive emotions (Neil et al., 2013) and performance satisfaction (Didymus & Fletcher, 2017). It is, therefore, important to better understand how

to optimize athletes' appraisals of organizational stressors (cf. Hanton et al., 2012). The results of this study suggest that a one-to-one cognitive restructuring intervention reduced threat appraisals and encouraged challenge appraisals in a sample of female high-level field hockey players. In addition, the cognitive restructuring technique learnt by the participants appeared to positively influence emotions and performance satisfaction.

The participants' appraisal data adhered to the six visual inspection criteria that were used to guide the research (Hrycaiko & Martin, 1996). Specifically, the baseline scores were stable when the intervention was introduced, the intervention effects were replicated within and across participants, there were few overlapping data points, the intervention effects occurred immediately after the intervention was introduced, there were observable intervention effects, and the results are consistent with existing theory (e.g., Beck, 2011; Lazarus, 1999, 2000; Lazarus & Folkman, 1984). The data relating to emotions and performance satisfaction were less stable during baseline monitoring and more of the data overlapped between the baseline and the intervention phases of the intervention. The overlapping data indicate that the intervention had less of an effect on the participants' emotions and performance satisfaction than it had on their appraisals. This finding is not surprising because the cognitive restructuring technique that was used in this study targeted appraisals as the primary outcome variable. Lazarus' (1999, 2000) CMR theory of stress and emotion and the basic principles of CBT help to explain how targeting an individual's appraisals can have causal influences on his or her emotions. Indeed, Lazarus (2000) described the separation of stress and emotion as an 'absurdity' (p. 35) and discussed the inextricable links between and interdependence of appraisals and emotions. In his seminal work on CBT, Beck (e.g., 2011) explained the close relations between cognitions (e.g., appraisals), emotions, and behaviors (e.g., performance). Thus, if appraisals influence emotions and emotions influence performance (see Campo et al., 2012), it is theoretically

logical that optimizing an athlete's appraisals will also optimize emotions and performance satisfaction, albeit to a lesser and perhaps less stable extent. Another explanation for this finding relates to the hockey players' negative appraisals and emotions during the baseline monitoring period. These experiences could have created a ceiling effect whereby a decrease in emotional negativity over time was likely even in the absence of an intervention.

The observable differences in each of the participant's appraisals, emotions, and performance satisfaction are notable because Hrycaiko and Martin (1996) suggested that greater confidence can be had in the effectiveness of an intervention if the effects are replicated within and across individuals. The observable differences in the outcome variables and, thus, in the effectiveness of the current intervention may have been enhanced by various factors. First, cognitive restructuring has previously been shown to be an effective way to target negative thoughts about stressors (Suinn, 2005). Second, although each participant engaged in the structured intervention, each session was driven by the participant to accommodate the idiographic nature of her appraisals (cf. Didymus & Fletcher, 2012; Hanton et al., 2012). Third, a period of rapport building and observation took place before baseline monitoring, which afforded the participants opportunities to build a relationship with the researcher before taking part in the intervention (Andersen, 2000; Beckmann & Kellmann, 2003). Fourth, pre-existing factors (e.g., skills, attitudes) that are relevant to high-level performers (e.g., Boes, Harung, Travis, & Pensgaard, 2012; Mahoney, Gabriel, & Perkins, 1987) may have meant that the participants were ready to change (Pawson & Tilley, 1997) when the intervention was introduced. Fifth, our sample consisted of female athletes and some researchers have highlighted that women are more willing to seek psychological support (e.g., Martin et al., 2001) and may be more receptive when they do (cf. Martin, Lavallee, Kellmann, & Page, 2004). Collectively, these factors are likely to have influenced the effectiveness of the intervention that was developed and tested during this study.

The questionnaire and social validation data were congruent because they both indicated that each performer's appraisals, emotions, and performance satisfaction were optimized as a result of the intervention. These effects may be explained by the time that was dedicated to developing participants' understanding of the differences between thoughts and emotions (Beck, 2011); their heightened awareness of the relationships between appraisals of organizational stressors, emotions, and performance satisfaction (Didymus & Fletcher, 2017; Neil et al., 2011); and the integration period during which participants refined and practiced the techniques that they had learnt. Indeed, the participants reported that the integration process was central to maintaining their optimized appraisals, emotions, and performance satisfaction. This may have been because the cognitive restructuring technique takes time to learn but is a cornerstone of therapeutic processes and is thought to be an important mediator of adaptive outcomes (Wishman, 1993).

The findings of this study suggest that the participants experienced elements of challenge, threat, and loss appraisals simultaneously, which indicates that the players perceived multiple possibilities and meanings during their stress transactions. This supports transactional stress theory (Lazarus & Folkman, 1984) and the CMR theory of stress and emotion (Lazarus, 1999, 2000), which highlight that individuals can experience seemingly contradictory appraisals and emotions during a stressful encounter. The findings also support some occupational (e.g., Webster, Beehr, & Love, 2011) and sport psychology researchers (e.g., Anshel, Jamieson, & Raviv, 2001) who have proposed that challenge and threat appraisals can occur simultaneously. However, our findings contradict other researchers (e.g., Jones, Meijen, McCarthy, & Sheffield, 2009; Moore, et al., 2015) who have suggested that challenge and threat appraisals are mutually exclusive. This may be because our study was designed to allow participants to report elements of threat, challenge, and loss simultaneously using the ALE scale while other studies (e.g., Moore et al. 2015) were designed to measure

threat and challenge as psychophysiological states that have distinct patterns of cardiovascular activity.

The applied implications of this intervention are relevant to athletes, coaches, researchers, and practitioners. The results suggest that the theoretically informed cognitive restructuring technique that was used in this study is useful when working with high-level female field hockey players who typically appraise organizational stressors as a threat or with a sense of loss. The TAS that was developed and used can be seen as a catalyst for appraisal optimization that could be incorporated in applied practitioners' psychological skills training programs. Indeed, the participants in this study embraced the use of the TAS as a tool that encouraged regular self-reflection on their appraisals and emotions. The players also reported that they had increased performance satisfaction when they appraised organizational stressors as a challenge. Thus, while there are extraneous factors (e.g., physical training) that may have influenced the players' performance satisfaction, the usefulness of cognitive restructuring for enhancing performance satisfaction should be noted.

A noteworthy strength of this study relates to the single-case multiple-baseline design, which allowed the researchers to explore intra-individual changes in the outcome variables. In addition, the inclusion of a three months post-intervention follow-up allowed the participants' retention of the intervention effects to be assessed. This aspect of the study design makes a unique contribution to the literature because Brown and Fletcher (2017) highlighted that most published intervention studies in sport have not included a follow-up and those that have are most often conducted within a month of intervention completion. This is problematic if the aim is to develop and test interventions that have longer term benefits for performers. Other strengths of this research relate to the naturalistic setting of the intervention and the semi-structured nature of the content, which allowed the participants to explore organizational stress transactions in ways that were personally significant. This was important

because the intervention needed to be replicable but cognitive restructuring is based on the premise that each session is driven by the participant (Beck, 2011) to facilitate personally adaptive appraisals (see Mancini, 2015).

Despite these strengths, some limitations of the study should be considered when interpreting the findings. For example, the purposeful sample should be kept at the forefront of readers' minds when reviewing the effects of the intervention. This is because the sampling strategy may have inadvertently encouraged favorable outcomes that may not have been apparent if athletes who typically experienced challenge and benefit appraisals had also been recruited. In addition, the selection of one sport and the all-female, small sample limit the generalizability of the findings. Expectancy effects and or a Hawthorne effect may have also influenced the findings due to the single-case design and the associated scrutiny that the participants received (Swain & Jones, 1995). This limitation is especially relevant when considering the immediate intervention effects that the participants reported, which may have been due to the intervention or due to a placebo effect. Another limitation relates to the reported increases in performance satisfaction, which could have been due to external factors (e.g., team form, stage of the competitive season). Although not essential for multiple-baseline single-case research designs, this limitation could have been mitigated by including control participants. In addition, the collection of objective performance data (e.g., number of successful and unsuccessful passes) could help to address this limitation during future intervention research.

Future research should replicate this study with other populations to assess the internal validity of the intervention and to test whether the findings are generalizable. To advance knowledge of organizational stress management, researchers should also develop and evaluate primary and tertiary level SMIs in collaboration with sport organizations. Understanding in this area could be further enhanced if the collective and relative effects of

primary, secondary, and tertiary stress management techniques were assessed in different contexts. A more robust understanding of how to optimize sport performers' appraisals could be developed by examining the underlying mechanisms of cognitive restructuring. From a methodological perspective, researchers should consider using randomized controlled designs in an organizational context in sport and should develop novel ways to objectively measure performance in team sports. The results of this study indicate that the intervention had a positive effect on players' appraisals of organizational stressors but that it had a less 'significant' effect on their emotions and performance satisfaction. Thus, future research should examine the effects of multi-modal interventions that target appraisals and emotions as the primary outcome variables.

## Conclusion

This study outlines the first intervention that has aimed to optimize performers' appraisals of organizational stressors. The findings suggest that cognitive restructuring encouraged challenge appraisals, pleasant emotions, and enhanced performance satisfaction in four high-level female field hockey players who typically appraised organizational stressors as a threat or with a sense of loss at the start of the intervention. While the players' appraisals and emotions appeared to be influenced by cognitive restructuring, the relationship between these two constructs may be more ambiguous than previous literature suggests. Researchers should examine the effectiveness and efficacy of the intervention with other populations to develop a robust evidence base for appraisal optimization in sport.

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Table 1

*Descriptive statistics for each participant's questionnaire responses during the baseline, intervention, and follow-up phases of the intervention.*

| | Participant A | | | Participant B | | | Participant C | | | Participant D | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Baseline M (SD) | Intervention M (SD) | Follow-up M (SD) | Baseline M (SD) | Intervention M (SD) | Follow-up M (SD) | Baseline M (SD) | Intervention M (SD) | Follow-up M (SD) | Baseline M (SD) | Intervention M (SD) | Follow-up M (SD) |
| ALE | | | | | | | | | | | | |
| Threat | 14.5 (0.6) | 4.4 (2.9) | 2.0 (0) | 23.7 (2.1) | 10.6 (5.2) | 4.0 (0.8) | 19.0 (1.5) | 6.4 (3.5) | 5.3 (0.7) | 27.0 (2.2) | 9.8 (4.8) | 7.3 (1.2) |
| Challenge | 3.8 (0.5) | 7.1 (3.5) | 11.3 (1.3) | 5.0 (1.4) | 16.2 (2.7) | 17.7 (0.5) | 6.5 (0.5) | 12.1 (1.5) | 12.4 (0.5) | 5.3 (1.6) | 11.8 (4.8) | 14.2 (1.2) |
| Loss | 6.8 (0.5) | 2.2 (1.7) | 1.0 (0) | 13.6 (1.3) | 1.5 (1.4) | 1.4 (1.3) | 11.1 (1.2) | 4.8 (1.7) | 2.4 (0.5) | 11.8 (2.3) | 2.9 (1.6) | 4.3 (1.4) |
| SEQ | | | | | | | | | | | | |
| Anxiety | 1.1 (0.1) | 0.5 (0.5) | 0.9 (0.1) | 3.7 (0.2) | 1.7 (0.7) | 1.5 (0.1) | 2.7 (0.2) | 1.6 (0.2) | 1.9 (0.1) | 4.0 (0.3) | 2.0 (0.6) | 2.1 (0.2) |
| Dejection | 1.8 (0.3) | 0.6 (0.4) | 0 (0) | 3.1 (0.3) | 0.5 (0.4) | 0.3 (0.2) | 3.5 (0.3) | 1.6 (0.5) | 1.2 (0.2) | 2.2 (0.5) | 0.8 (0.6) | 1.0 (0.2) |
| Excitement | 0.6 (0.1) | 1.3 (0.9) | 2.5 (0) | 0.3 (0.3) | 1.6 (0.5) | 2.5 (0.2) | 0.3 (0.2) | 1.8 (0.5) | 2.3 (0.2) | 0.2 (0.3) | 0.9 (0.7) | 2.0 (0.2) |
| Anger | 2.4 (0.1) | 0.8 (0.5) | 0 (0) | 3.3 (0.2) | 0.7 (0.6) | 0.3 (0.2) | 2.1 (0.2) | 0.8 (0.4) | 0.5 (0.3) | 1.0 (0.2) | 0.4 (0.5) | 0.1 (0.1) |
| Happiness | 0 (0) | 0.7 (0.6) | 1.6 (0.1) | 0.1 (0.2) | 1.1 (0.5) | 1.5 (0.4) | 0.2 (0.2) | 1.5 (0.6) | 2.1 (0.1) | 0.3 (0.2) | 1.9 (1.2) | 2.9 (0.1) |
| PS | 5.8 (1.5) | 7.3 (1.0) | 8.3 (0.5) | 5.3 (1.0) | 7.4 (1.5) | 7.6 (0.5) | 5.6 (0.9) | 7.1 (1.1) | 7.9 (0.8) | 6.3 (0.8) | 7.3 (1.2) | 7.8 (0.8) |

*Note.* PS = performance satisfaction.

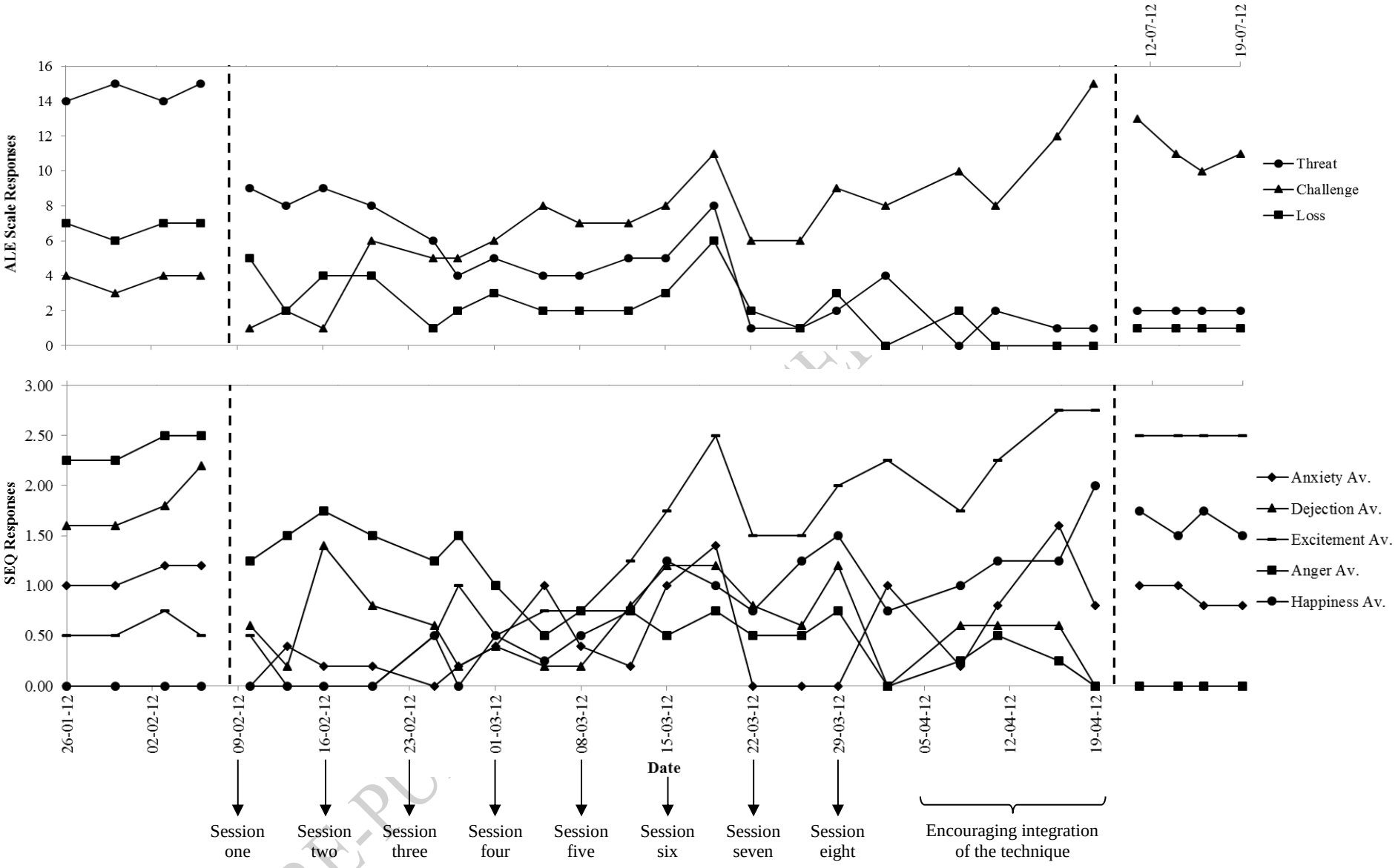


*Figure 1.* ALE scale and SEQ responses from participant A (the left section of the graph shows the baseline data, the middle section shows data

908 from the intervention phases, and follow-up data are shown on the right. The dashed vertical lines separate each section. Each data point
909 represents the mean score for one type of appraisal or emotion at one data collection point. The same system applies to figures 2-4).

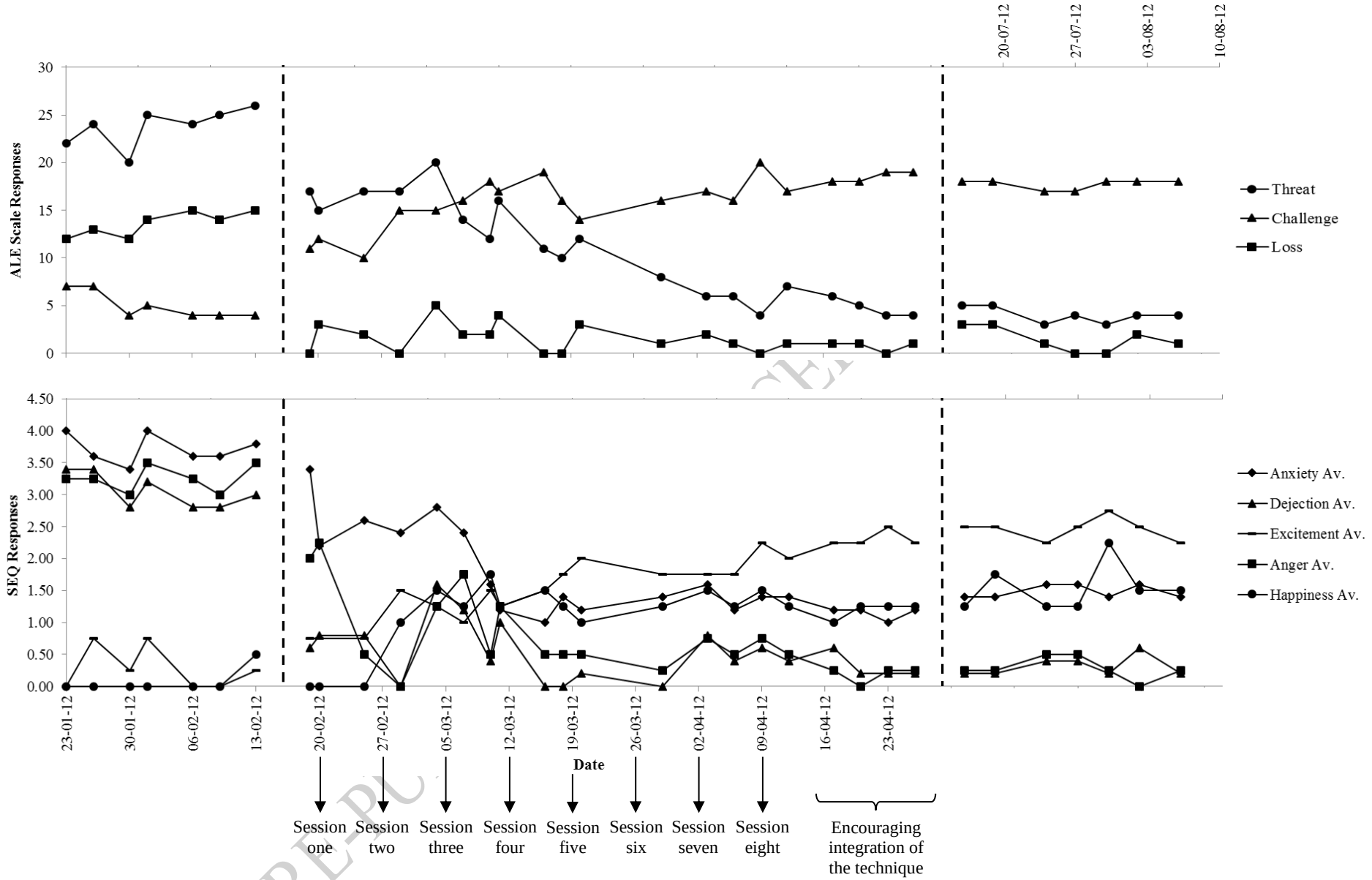


*Figure 2.* ALE scale and SEQ responses from participant B.

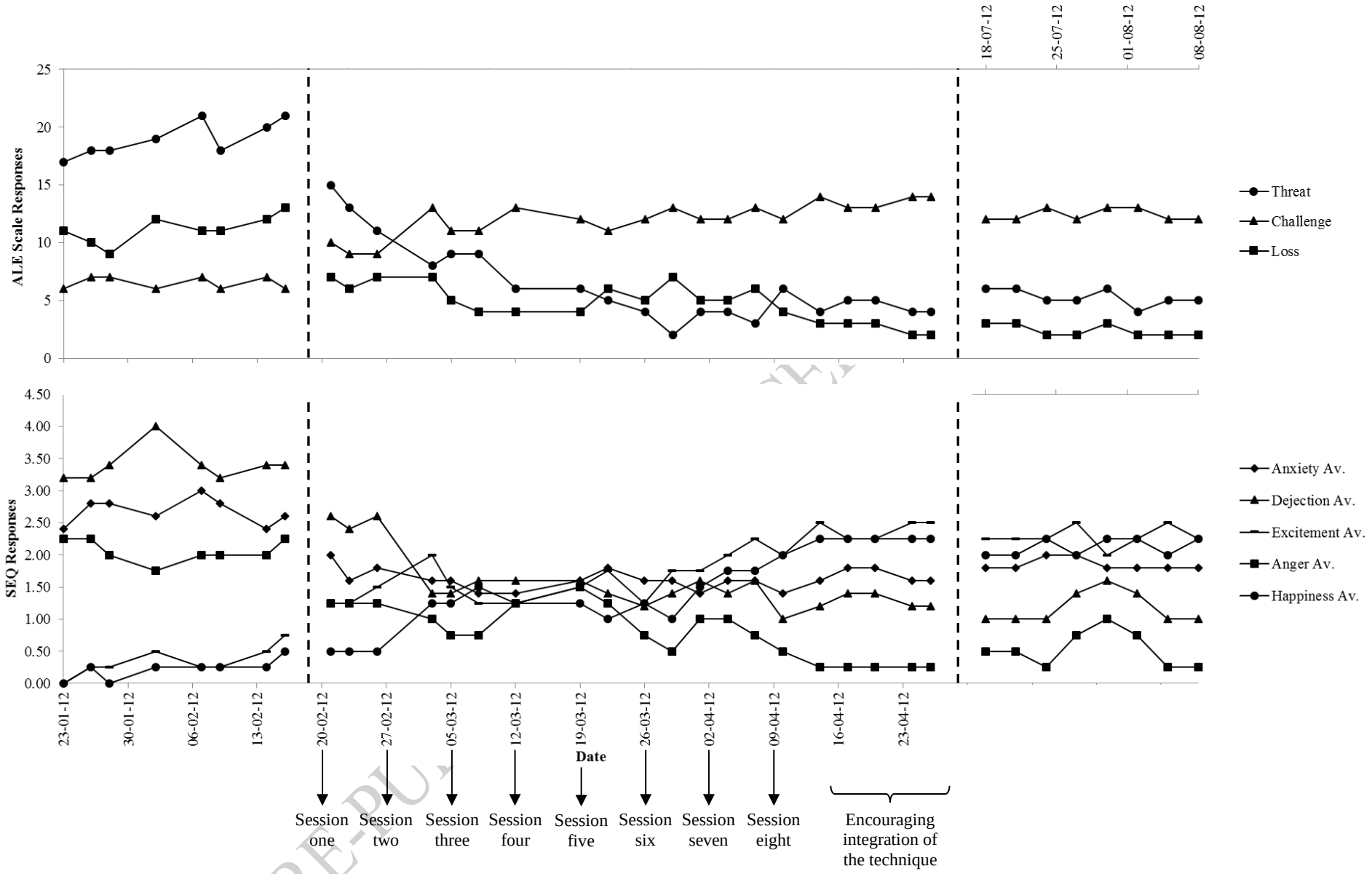


*Figure 3.* ALE scale and SEQ responses from participant C.

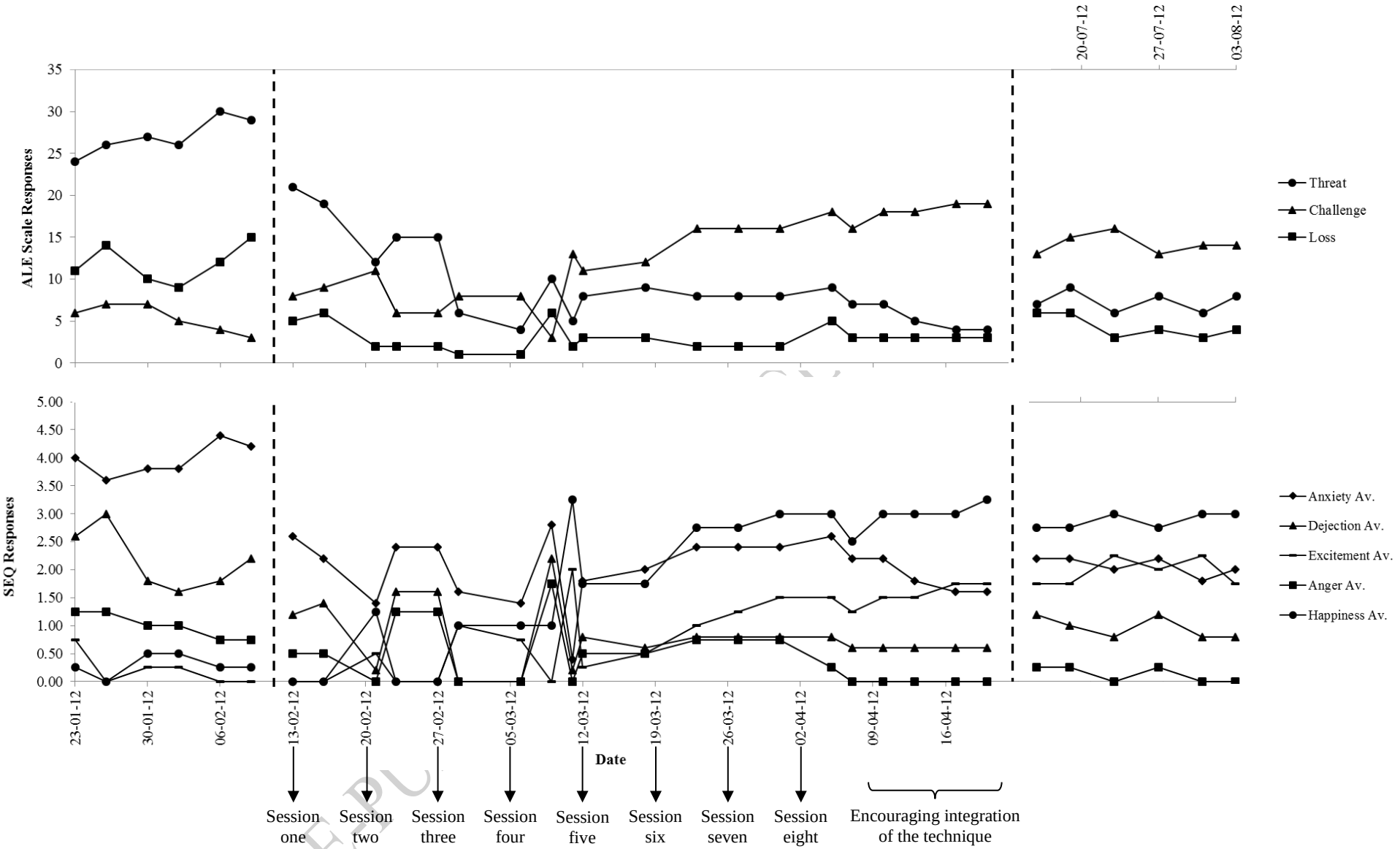


*Figure 4.* ALE scale and SEQ responses from participant D.

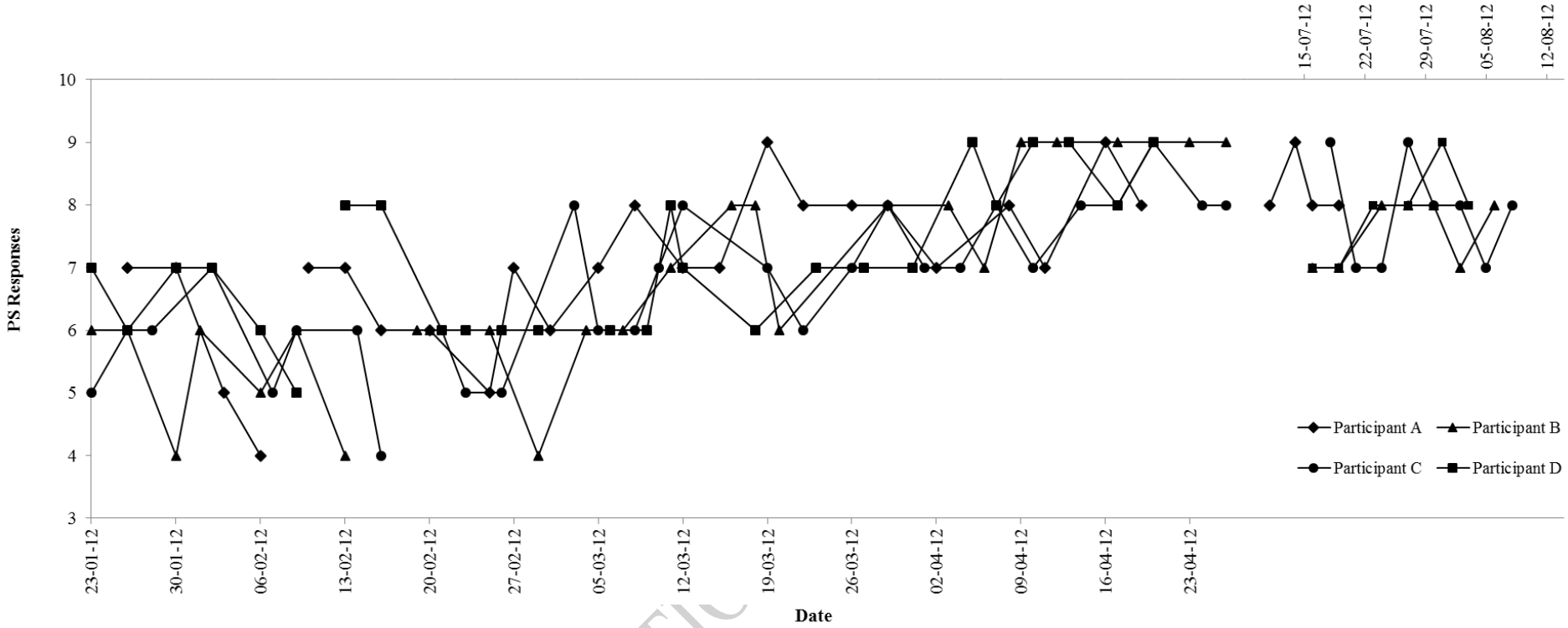


*Figure 5.* Performance satisfaction responses from participants A, B, C, and D (the breaks in each data series represent the points in time when each of the baseline monitoring, intervention, and follow-up phases started and finished. Each data point represents a mean performance satisfaction score at one data collection point).

| 1. Organizational Stressor | 2. Negative Automatic Thoughts | 3. Emotions | 4. Alternative Thoughts | 5. Alternative Emotions |
|---|---|---|---|---|
| **Describe the organizational stressor clearly and concisely.** | **What thoughts do you have about the stressor? Rate the believability of these thoughts from 0% to 100%** | **What are you feeling? Rate the intensity of these emotions from 0% to 100%** | **What more functional thoughts could you have about this stressor? Rate the believability of these thoughts 0% to 100%** | **How might you feel after having the alternative thought? Rate the intensity of these emotions from 0% to 100%** |
| The team are not playing like they want to win. | "So annoying: we will never win" (80%)<br>"What's the point in playing if no one else is trying" (50%) | Irritated (80%)<br>Annoyed (80%)<br>Upset (80%) | "I will keep trying" (100%)<br>"We have the time, we can score" (80%)<br>"It's not over until the whistle blows" (80%) | Determined (90%)<br>Apprehensive (80%)<br>Irritated (30%) |
| The England selectors are watching our game. | "I will not impress" (100%)<br>"I will not play well" (80%)<br>"I may not start the game" (70%) | Nervous (100%)<br>Uneasy (90%)<br>Scared (80%) | "It's worth trying" (100%)<br>"I can play well" (80%)<br>"I can make an impact even if I start from the bench" (80%) | Excited (80%)<br>Nervous (60%) |
| There's a big crowd at the game so I need to not mess up. | "I'm not playing well, my next pass will be rubbish" (90%)<br>"This is gonna be hard" (70%)<br>"I bet I make mistakes" (70%) | Worried (70%)<br>Scared (70%)<br>Anxious (60%) | "I know I can play well" (80%)<br>"I will try my best" (80%)<br>"The crowd makes no difference to how well I can play" (60%) | Excited (70%)<br>Anxious (40%) |
| The coach told us about selection too late. | "F*** sake, that's inconvenient" (90%)<br>"I should be on holiday, not stuck at training" (80%) | Frustrated (90%)<br>Annoyed (85%)<br>Sad (70%) | "He's busy, just be patient" (70%)<br>"I am being selected so training can come first" (60%)<br>"Take it as a compliment" (60%) | Annoyed (70%)<br>Appreciative (60%)<br>Happy (50%)<br>Excited (50%) |

*Figure 6.* Exemplar TAS from participant B. The first three columns were completed during session three and between sessions three to eight of phase III. The fourth column was completed during sessions four to eight and between sessions five to eight of phase III. The fifth column was completed during and between sessions five to eight of phase III.

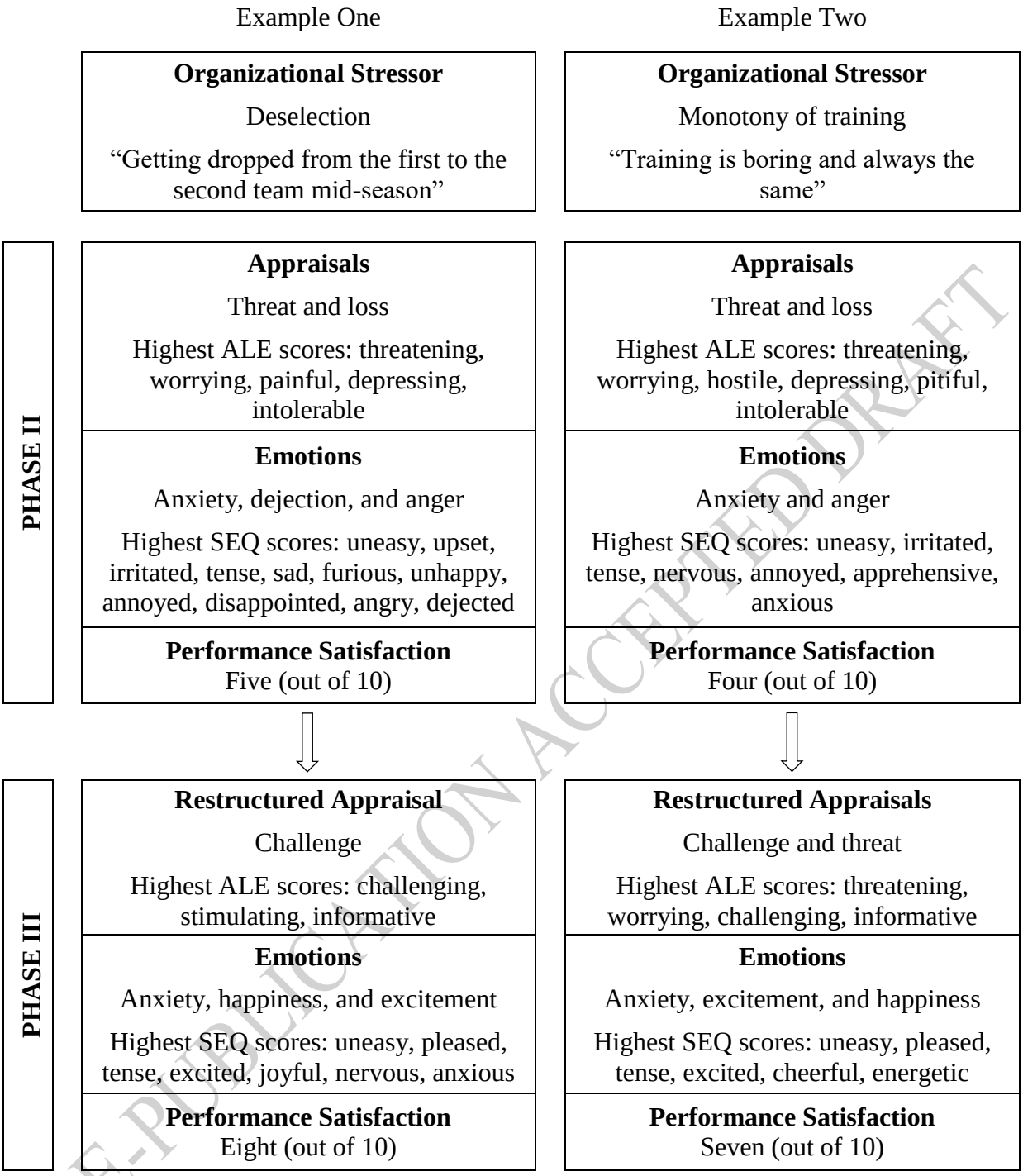


*Figure 7*. Illustrative flow charts showing examples of the organizational stressors encountered and exemplar appraisal, emotion, and performance satisfaction data from the baseline and intervention phases. Verbatim quotes about the stressors are taken from the ALE scale where participants were asked to record the most recent organizational stressor that they had experienced during training or competition. The appraisals with the highest score from the ALE scale and the emotions with the highest scores from the SEQ are reported at each stage.