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Research article

Emotional intelligence and emotions associated with optimal and dysfunctional athletic performance

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Abstract

This study investigated relationships between self-report measures of emotional intelligence and memories of pre-competitive emotions before optimal and dysfunctional athletic performance. Participant-athletes (n = 284) completed a self-report measure of emotional intelligence and two measures of pre-competitive emotions; a) emotions experienced before an optimal performance, and b) emotions experienced before a dysfunctional performance. Consistent with theoretical predictions, repeated MANOVA results demonstrated pleasant emotions associated with optimal performance and unpleasant emotions associated with dysfunctional performance. Emotional intelligence correlated with pleasant emotions in both performances with individuals reporting low scores on the self-report emotional intelligence scale appearing to experience intense unpleasant emotions before dysfunctional performance. We suggest that future research should investigate relationships between emotional intelligence and emotion-regulation strategies used by athletes.

Key words: Affect, emotion, stress-management, personality, effect regulation.

Introduction

Research in general psychology has emphasized the utility of emotional intelligence (Austin et al., 2004; Petrides et al., 2007) and it is proposed to be a construct associated with adaptive psychological functioning (Kirk et al., 2008). Defined as *'the ability to monitor one's own and others' feelings and emotion, to discriminate among them and to use this information to guide one's thinking and actions'* (Salovey and Mayer, 1990, p. 189), measures of emotional intelligence associate with successful performance in a number of applied settings (Van Rooy and Viswesvaran, 2004) including sport (Zizzi et al., 2003). They also associate with a number of health-related variables, including minimizing the effects of stress (Schutte et al., 2007).

There is a growing interest in emotional intelligence in sport (Meyer and Zizzi, 2007). Recent research found emotional intelligence related to emotions experienced before successful and unsuccessful performance (Lane et al., 2009b). Lane et al. (2009b) found that emotions correlating with successful performance vigor, happiness, and calmness, whereas emotions associating with poor performance include confusion, depression and fatigue. Emotional intelligence correlated positively with pleasant emotions and negatively with unpleasant emotions. Further, Lane et al. (2009c) found emotional intelligence scores correlated with frequent use of psychological skills. Athletes reporting frequent use of psychological skills (Thomas et al., 1999) also appear to report high scores on the self-report emotional intelligence scale (Schutte et al., 1998). Many of the studies cited above propose to assess mood rather than emotion. Differences between mood and emotion are subject to considerable discussion within the literature (Beedie et al., 2005). Whilst it is possible to distinguish between the two concepts at a theoretical level, it has proved more difficult in terms of measurement. Research that uses single-adjective checklists such as the Profile of Mood States (McNair et al., 1971) cannot distinguish mood from emotion (Beedie et al., 2005). In the present study, we asked participants to report how they were feeling shortly before competition. Whilst it is possible that high scores could be a product of intense mood states to which the athlete cannot attribute the cause, we propose that by assessing feeling states shortly before competition, reported feelings are more likely to be emotions resulting from anticipated and actual performance. Consequently, we use the term emotion to describe feelings experienced before competition.

A productive avenue for emotional intelligence research is through establishing a relationship with pre-competition emotion. A wealth of evidence supports the notion that variations in emotions relate to variations in sport performance (Beedie et al., 2000; Lane et al., 2009b; Robazza et al., 2008). Meta-analysis results show that successful performance is associated with higher scores of vigor and lower scores of anger, confusion, depression, fatigue and tension (Beedie et al., 2000). However, meta-analysis results show inconsistent emotion-performance relationships for anger and tension. Anger and /or tension positively correlate with performance in some studies and negatively correlate with performance in others (Beedie et al., 2000; Lane and Terry, 2000). However, it should be noted that studies using an ideographic research design tend to find considerable intra-individual differences in the intensity of emotions associated with performance (Devonport et al., 2005; Jokela and Hanin, 1999; Lane et al. 2009b). It is possible that this variation is attributable to the varied and personally meaningful goals that individuals establish in respect of performance, as well as the uncertainty that accompanies the pursuit of such goals (Hagtvet, and Hannin, 2007; Lazarus, 2000).

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According to theoretical proposals by Salovey and Mayer (1990), emotional intelligence could explain the process through which people recognize which emotions appear to help performance and which emotions might hamper performance. Furthermore, emotional intelligence might also help explain why some people appear to initiate strategies to reduce the discrepancy between current emotions and ideal emotions. Recent research has argued that people learn from their emotional experiences (Baumeister et al., 2007). Baumeister et al. propose previous emotional outcomes and current emotional states contribute people selecting actions according to anticipated emotions. For example, an athlete who failed to achieve his/her competitive goals is likely to feel unhappy and angry after competition. These feelings prompt the athlete to consider how she/he could improve performance to avoid similar outcomes in the future. At the next competition, should the athlete experience mild anger and unhappiness, even anticipatory in nature, then he or she will initiate thoughts or behaviors to regulate these emotions, possibly by using psychological skills. In sport psychology, the notion that emotions provide feedback and that individuals learn to associate certain emotions with success is consistent with suggestions made by Hanin (2003). Hanin argued that individuals develop meta-emotional beliefs regarding which emotions associate with optimal performance and emotions associate with dysfunctional performance.

Given the relative dearth in research examining emotional intelligence in athletic samples, the present study investigated relationships between self-report measures of emotional intelligence and memories of pre-competitive emotions associated with optimal and dysfunctional athletic performance. Consistent with definitions that Lane et al. (2009b, p. 67), optimal performance is defined as a discrete performance in which the individual achieved an important goal. Dysfunctional performance is defined as a discrete-performance when the individual attempted to attain an important goal and failed to meet his/her expectation. In the present study, two hypotheses are tested. The first hypothesis is that there will be significant differences in pre-competition emotions between optimal and dysfunctional performance. Consistent with meta-analysis results (Beedie et al., 2000) and recent research (Lane et al., 2009b), an emotional profile associated with optimal performance should be characterized by higher vigor, calmness and happiness coupled with lower scores on the anger, confusion, depression, fatigue and tension scales. The second hypothesis is that emotional intelligence will significantly relate to pleasant emotion for both performances, even though pleasant emotions will be lower before dysfunctional performance.

Methods

Participants

Participants were 284 volunteer student athletes (Age: M = 21.02, SD = 2.46; Males n = 154, Females n = 130) recruited from two Hungarian, one Italian and one British university. Participants played a number of different sports, including track and field, soccer, rugby union, hockey, basketball, volleyball, cricket, netball, lacrosse, tennis, badminton, martial arts, golf, water polo, boxing, and distance running. Participants ranged in ability from elite to recreational.

Measures

Emotional intelligence

The Emotional Intelligence Scale (Schutte et al., 1998) was used to assess self-report emotional intelligence. Participants rate items on a 5-point likert scale anchored by strongly agree (1) to strongly disagree (5). Recent research has found that the EIS is valid for use among athletic samples (Lane et al., 2009a). Lane et al. (2009a) demonstrated the factorial validity of a single-factor model of EIS for use in sport after removing 14 items that lack emotional content. They removed items such as "I find it hard to understand the non-verbal messages of other people" and "When I am faced with obstacles, I remember times I faced similar obstacles and overcame them" which contain no direct reference to emotions. In the present study, we used the 19-item version of the scale (Lane et al., 2009a). The alpha coefficient for the single-factor scale in the present study was .71.

Emotion

Emotions was measured using the 24-item Brunel Mood Scale (BRUMS: Terry et al., 2003) which has been translated for use with Hungarian athletes and Italian athletes (see Lane et al., 2007). The BRUMS is a shortened version of the Profile of Mood States (POMS: McNair et al., 1971) and assesses anger, confusion, depression, fatigue, tension, and vigor. Subscales of happiness and calmness from the UWIST were included (UWIST: Matthews et al., 1990) to provide a more balanced assessment of emotion. Participants rate items on a 5-point likert scale anchored by "not at all" (0) to "extremely" (4). Internal consistency coefficients for subscales were: Anger, alpha = .82; Calmness, alpha = .81; Confusion, alpha = .77; Depression, alpha = .75; Fatigue, alpha = .82; Happiness, alpha = .83; Tension, alpha = .74; and Vigor, alpha = .81.

Procedure

Ethical approval was received from the Institutional ethics committee of the principle author. Volunteer participants were given three questionnaires to complete; 1) the EIS, 2) retrospective measures of emotion before optimal performance, and 3) retrospective emotion before dysfunctional performance. Lane and Terry (2000) criticize studies using retrospective measures of emotion arguing that such measures should not be treated the same as measures assessed in real time. However, whilst recognizing this possible limitation, it is argued that retrospective mood data provides useful information regarding the development of meta-emotional beliefs (Hanin, 2003). Ekman and Davidson (1994) suggest that people tend to remember emotionally charged events well, and retrospective measures of anxiety have been shown to be reliable up to three months post competition (Hanin, 2000; Tenenbaum and Elran, 2003). Therefore, whilst we acknowledge limitations of using retrospective measures of emotion, they offer insight into the nature of memories of emotion, which according to Baumeister et al. (2007) and Hanin (2003) could provide a useful guide for future emotional

experiences.

Participants first completed the EIS followed by the two modified BRUMS questionnaires. The order in which participants completed the modified BRUMS was randomized.

Data analysis

We analyzed data by comparing emotions associated with optimal performance with emotions associated with dysfunctional performance using a repeated measures multivariate analysis of variance (MANOVA). We hypothesized that a significant multivariate effect would emerge with optimal performance being associated with higher scores of pleasant moods (calmness, happiness, & vigor) coupled with lower scores of unpleasant moods (anger, confusion, depression, fatigue, & tension). If we found this result, then we decided to calculate of a composite measure of emotion by subtracting the sum score of pleasant emotion from the sum score of unpleasant moods. We correlated emotional intelligence and the composite score for emotions separately for optimal and dysfunctional performance. Our rationale for calculating a composite measure of emotion was because the key aim of the present study was to investigate the relationship between emotional intelligence and emotion rather than focusing on specific emotional states. We acknowledge that the act of combining different emotions together might lead to a loss in meaningful information (Lane and Terry, 2000).

Results

In support of the first hypothesis regarding emotion-performance relationships, repeated measures MANOVA results show optimal performance was associated with significantly higher vigor, calmness and happiness scores coupled with low scores on the anger, confusion, depression, fatigue, and tension scales (Wilks Lambda $_{8,275}$ = .34, $p < .001$; $Eta^2 = .66$, see Table 1). In support of the second hypothesis, correlation results show emotional intelligence correlated significantly with retrospective assessments of emotion in both performance conditions. EI correlated with emotions before optimal performance ($r = .34$, $p < .001$) and dysfunctional performance ($r = .22$, $p < .001$). The direction of the relationship shows that emotional intelligence correlates with pleasant emotions.

Discussion

The aim of the present study was to investigate relationships between emotional intelligence and memories of pre-competitive emotional states related to optimal and dysfunctional performance. In support of the first hypothesis, results show optimal performance associated significantly with higher scores on the vigor, happiness and calmness scales coupled with lower anger, confusion, depression, fatigue, and tension scores. The strength of emotion-performance relationships found in the present study is consistent with previous research using a retrospective approach (Devonport et al., 2005; Lane et al., 2009b), and stronger than when pre-competition emotions are assessed prospectively (Beedie et al., 2000). Hanin (2003) argues that individuals can vividly recall the emotional experiences of optimal and dysfunctional performances using retrospective methods, possibly because people experience intense emotions in sport and the timeframe for these emotions is clearly demarcated. Ekman and Davidson (1994) argue that people will tend to remember events where they experience intense emotions.

After establishing differences in emotional states experienced before optimal and dysfunctional performance, the study investigated the extent to which emotional intelligence related to variations in pre-competition emotion. In support of the second hypothesis, emotional intelligence correlated with pleasant emotional states before optimal and dysfunctional performance. Hence, emotional intelligence appears to correlate with emotions such as vigor, happiness, calmness even when participants' performance is below personal standards.

Emotional intelligence relates to beliefs concerning ones ability to manage emotions (Austin et al., 2004; Petrides et al., 2007) and self-efficacy expectations to manage emotions (Kirk et al., 2008; Petrides et al., 2007). EI is proposed to assess individual's ability to identify optimal emotional states, to change emotions, and use emotions to enhance performance (Salovey and Mayer, 1990). For example, if an individual believes that an emotional state such as feeling vigorous and happy will help bring about optimal performance, then that person will assess how they are feeling currently in comparison to the optimal emotional profile (Hanin, 2003). Once an individual identifies a discrepancy between current emotional states and optimal emotional states, then this initiates regulatory effort to change emotions to optimal levels. Once an individual has regulated his or her emotions to an optimal level for the task, then emotional intelligence is proposed to help sustain these emotions providing task

Table 1. Emotional states associated with optimal and dysfunctional performance

	Optimal Performance		Dysfunctional Performance			
	Mean	SD	Mean	SD	$F_{1,282}$	Eta^2
Anger	.51	.65	1.28	1.15	85.45*	.33
Calmness	1.61	.92	.97	.77	58.02*	.34
Confusion	.68	.60	1.35	.98	62.86*	.35
Depression	.22	.42	1.11	1.05	111.88*	.43
Fatigue	.54	.68	1.31	1.00	82.82*	.33
Happiness	2.28	.87	1.14	.88	184.77*	.54
Tension	1.31	.77	1.66	1.04	17.52*	.12
Vigor	3.11	.69	1.84	.97	230.29*	.62

* $p < .001$

demands and motivation to achieve goals remain constant.

The notion that individuals identify and seek to regulate emotions to optimal levels assumes a certain degree of accuracy in current and ideal emotional states. Given the nature of emotional intelligence, it raises the question whether participants low in emotional intelligence are providing accurate data; that is, the reliability of emotions recalled from memory and actual emotions should be higher in people who are emotionally intelligent. To address this possible limitation, we suggest future research should investigate the extent to which emotional intelligence moderates the test-retest reliability of actual and recalled emotions. Previous research has not sought to identify individual differences that might moderate the relationship between actual and recalled emotions (Terry et al., 2005), although there is some evidence that skilled athletes are better at this process (Hanin and Syrja, 1996).

According to Baumeister et al. (2007) memories of emotions associated with optimal and dysfunctional performance provide a powerful source of information regarding the generation of future emotions, and cognitions surrounding these emotions. Baumeister et al. propose that the influence of emotion on performance is indirect in that individuals engage in behaviors intended to pursue or avoid anticipated emotional outcomes. If this argument is correct, then it is possible that individuals low in emotional intelligence associating unpleasant emotions with poor performance will develop low expectations in their ability to regulate these emotions. In this example, low emotional intelligence is a product of repeated failed attempts to regulate emotions. Recent research has begun exploring relationships between self-report emotional intelligence and emotional intelligence self-efficacy (Kirk et al., 2008; Petrides et al., 2007). It is suggested that future research should investigate the extent to which emotional intelligence self-efficacy might mediate relationships between emotional intelligence and emotions. An important aspect of emotional intelligence is the notion that it is trainable, and therefore, people could seek to enhance it. Kirk et al. (2008) developed and validated an emotional intelligence self-efficacy scale to provide a scale to further this area of research.

Conclusion

In conclusion, the present study has extended the investigation of emotional intelligence by examining its relationship with emotional states associated with optimal and dysfunctional sport performance. Findings lend support to the notion that emotional intelligence associates with variations in emotional states experienced before optimal and dysfunctional performance.

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Key points

- Athletes reporting high scores of self-report emotional intelligence tend to experience pleasant emotions.
- Optimal performance is associated with pleasant emotions and dysfunctional performance is associated with unpleasant emotions.
- Emotional intelligence might help athletes recognize which emotional states help performance.

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