Use and Perceived Effectiveness of Pre-competition Mood Regulation Strategies Among Athletes

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Abstract

The well-established link between mood and sport performance highlights a need for athletes to develop mood regulation strategies. The present study investigated such strategies among 195 volunteer athletes. Participants completed the Regulation of Feelings Scale, a 37-item measure assessing frequency of use and perceived effectiveness of strategies to reduce feelings of anger, confusion, depression, fatigue, tension, and increase feelings of vigour on the day of a competition. The most popular strategies were "engage in physical pre-competition activities", "spend time alone", "give myself a pep talk", "talk to someone about my feelings", and "use humour". Frequency of use and perceived effectiveness of strategies varied according to the specific mood dimension athletes sought to regulate. Strategies did not differ by gender, type of sport, or level of competition, but the order in which strategies were presented to the athletes influenced their responses. Exploratory factor analyses for each of the six mood dimensions did *not* support a theoretical model, which proposed that mood regulation strategies can be grouped into four types – behavioural distraction, behavioural engagement, cognitive distraction, and cognitive engagement. The present findings provide a rich source of information that may help to guide interventions among applied practitioners.

Introduction

The link between pre-competition mood and sport performance has been supported both anecdotally and empirically (see Beedie, Terry, & Lane, 2000; Terry, 2004 for reviews). Given this link, it is advantageous for athletes to be able to implement strategies to manage their pre-competition moods. However, the effectiveness of various mood regulation strategies is not well understood, especially with respect to strategies that may be appropriate in regulating specific moods.

It is generally accepted that most individuals intuitively develop mood regulation strategies; indeed there are at least 162 identified in the literature. Parkinson and Totterdell (1999) proposed that strategies can be grouped into the four categories of behavioural distraction (e.g., "chat with other people to distract myself from the feeling"), behavioural engagement (e.g., "write my feelings down"), cognitive distraction (e.g., "think about something else") and cognitive engagement (e.g., "try to put my feelings into perspective").

Among the general population, Thayer and colleagues found the most popular strategies to eliminate bad mood to be affiliative-communicative (call, talk to, or be with, someone), thought control, listening to music, avoiding the cause of the bad mood, and being alone; although exercise was generally shown to be the most effective strategy. To enhance energy, the most popular strategies were taking a nap, taking a shower, getting some fresh air, doing something to keep busy, drinking coffee, and listening to music, which was shown to be the most effective strategy (Thayer, Newman, & McClain, 1994).

Little is known about the mood regulation strategies used by athletes, although Stevens and Lane (2001) showed the most popular and effective strategies among a sample of 107 athletes to be exercise, listening to music, talking to or being with someone, and thought control. More recently, Hewston and colleagues (2005a, 2005b) showed music to be effective at generating pre-competition mood states

associated with successful performance and effective coping; and they emphasised the individualised nature of affective responses to music.

The present study re-examined the frequency of use and perceived effectiveness of various strategies in regulating specific mood dimensions among athletes. It also assessed whether athletes' use and perceived effectiveness of mood regulation strategies reflected the four categories proposed by Parkinson and Totterdell (1999).

Method

Participants

Participants were 195 athletes (♂ = 102, ♀ = 72) aged 18 to 33 (mean = 21.2 yr.), representing a wide range of sports. Level of competition ranged from club (n = 52), county (n = 37), regional (n = 25), national (n = 21) and international (n = 25). Participants were sport science undergraduates at a university in the United Kingdom.

Measures

Frequency of use and perceived effectiveness of mood regulation strategies was assessed by the Regulation of Feelings Scale (ROFS), a 37-item scale designed for the present study but based on previous lists (Stevens & Lane, 2001; Thayer et al., 1994). Participants rated the frequency with which they used each strategy to reduce feelings of anger, confusion, depression, fatigue, and tension, and increase feelings of vigour on the day of competition.

Participants only rated those strategies they had actually used. Frequency of use was rated on a 4-point scale, where 4 = *always, or 100% of the time*, 3 = *often, or 75% of the time*, 2 = *sometimes, or 50% of the time*, and 1 = *seldom, or 25% of the time*. Perceived effectiveness was rated on a 9-point scale anchored by 1 (*not at all effective*) and 9 (*extremely effective*), as recommended by Stevens and Lane (2001) and Thayer et al. (1994).

Procedure

Participants provided written informed consent and were treated in accordance with the ethical guidelines of the American Psychological Association. They were not offered any incentives for participation and were free to withdraw from the study at any time without explanation. Confidentiality of responses was assured prior to data collection, which occurred in a classroom setting. To assess order effects, four separate lists of strategies were generated. The same 37 strategies were contained in each list but in different orders. Participants were randomly assigned to complete one of the four lists.

Results

Table 1 shows descriptive statistics for the 37 strategies averaged across the six mood dimensions. The popularity column shows the percentage of athletes who reported using the strategy. The frequency column shows, among those athletes reporting use of particular strategies, how often they used them. The effectiveness column shows the perceived effectiveness of particular strategies among those athletes who reported their use.

The most popular mood regulation strategy on the day of competition was to "engage in physical pre-competition activities", which was used by about 30% of athletes, who used it often (almost 75% of competitions) and generally (but not always) found it effective. The next most popular strategies were "spend time alone", "give myself a pep talk", "talk to someone about my feelings", and "use humour". Across strategies, there was a high correlation between frequency of use and perceived effectiveness (r = .86, p < .001). This is unsurprising, given that athletes are likely to employ most often those strategies they find most effective.

The relationship between popularity and perceived effectiveness was significant but much weaker (r = .54, p < .01) indicating less than 30% overlap between how many athletes used a strategy and how well it was perceived to regulate mood. For example, "control my thoughts so they are only positive" was one of the less popular strategies but was seen as the most effective of all 37 strategies by those athletes who used it. Similarly, "try to put my feelings into perspective" and "deal with the cause of the feelings" were only moderately popular but, among those who used them, were utilized often and were perceived as highly effective.

Table 1: Popularity, frequency of use, and perceived effectiveness of mood regulation strategies (N = 195).

Strategy	Pop %	Freq	Eff
Engage in physical pre-competition activities	29.7	2.8	5.7
Spend time alone	29.0	2.6	5.1
Give myself a pep talk	28.0	2.7	5.4
Talk to someone about my feelings	27.5	2.5	5.3
Use humour	26.9	2.5	5.2
Chat with other people to distract myself from the feeling	25.9	2.6	5.2
Take a shower or bath	25.7	2.5	5.0
Use relaxation techniques	25.4	2.8	5.7
Let the feeling out	25.4	2.5	4.6
Think about something else	25.3	2.6	4.9
Focus on competition strategies	24.5	2.7	5.6
Listen to fast, upbeat music	23.9	2.7	5.1
Participate in non-sporting activity	23.8	2.1	4.0
Mentally switch off	23.4	2.5	5.0
Use sport-related imagery	23.3	2.8	5.1
Try to put my feelings into perspective	22.8	2.9	5.8
Rest, take a nap or sleep	22.7	2.3	4.6
Eat something	22.6	2.3	4.3
Watch TV or a movie	22.3	2.7	5.0
Change my expression or posture	22.3	2.7	5.1
Seek physical affection	22.2	2.5	4.6
Splash face with cold water	22.1	2.1	3.9
Drink alcohol	22.0	2.4	4.4
Deal with the cause of the feeling	21.6	2.7	5.8
Pamper myself	20.9	2.3	4.8
Listen to slow, soft music	20.8	2.4	4.6
Control my thoughts so that they are only positive	20.2	2.8	6.0
Do superstitious things	19.7	2.2	4.6
Have a massage	19.4	2.2	4.8
Pay attention to my equipment	19.3	2.3	4.3
Avoid the thing causing this feeling	19.1	2.6	5.0
Participate in non-competitive exercise	18.7	2.3	4.7
Drink coffee or another caffeinated beverage	18.3	2.3	3.9
Write my feelings down	18.1	2.0	3.9
Read a book or magazine	17.9	2.2	3.9
Engage in religious or spiritual activity	17.3	2.1	4.3
Smoke a cigarette	13.8	1.9	4.3

Note. Popularity (Pop) represents percentage of athletes who reported using the strategy. Mean frequency (Freq) and effectiveness (Eff) ratings apply only to athletes who reported using the strategy. Frequency was rated on a 4-point scale; effectiveness was rated on a 9-point scale.

Regulation of specific mood dimensions

A key objective of the present study was to identify strategies used by athletes to regulate specific mood dimensions; namely, anger, confusion, depression, fatigue, tension and vigour. An overview is provided in Table 2, which shows the mean popularity, frequency of use, and perceived effectiveness for each mood dimension. It can be seen that 26% of athletes attempt to regulate tension compared with only 20% for confusion. Tension-regulation strategies were generally implemented more frequently and perceived as more effective than strategies to regulate other moods.

Table 2: Mean popularity, frequency of use, and perceived effectiveness for each mood dimension.

Mood	Popularity	Frequency	Effectiveness
Anger	23.1	2.4	4.7
Confusion	19.9	2.4	4.6
Depression	23.1	2.5	4.9
Fatigue	21.9	2.4	4.8
Tension	26.3	2.7	5.3
Vigour	20.4	2.3	4.8

Results for specific strategies are included in Table 3. Given the large number of strategies evaluated and the extensive results, only statistics for the *five most popular* strategies to regulate each mood dimension are presented here. Full results are available on request from the first author.

A clear feature of the results is the trend for athletes to use different strategies to regulate different mood dimensions. For example, the top four strategies for regulating fatigue do not feature in the top five strategies for other mood dimensions. Similarly, "listen to fast, upbeat music" and "use sport-related imagery" are popular strategies for increasing vigour but not for regulating other moods; while "seek physical affection" is popular for relieving depressed mood but not for other moods. On the other hand, "use humour" features in the top five strategies for anger, confusion, depression, and vigour. Similarly, "spend time alone" and "talk to someone about my feelings" are prominent strategies for regulating anger, confusion, and depression; and "chat with other people to distract myself from the feeling" and "engage in physical pre-competition activities" also feature three times each. Overall, some strategies were popular across several mood dimensions whereas others were more mood-specific.

Perceived effectiveness varied by mood dimension, even for the same strategy. For example, "spend time alone" was seen as a very effective strategy to reduce anger but much less effective as a strategy to reduce depressed mood, even though its popularity and frequency of use was about equal for those two mood dimensions.

Table 3: Five most popular strategies for regulating specific mood dimensions ($N = 195$).

Mood	Pop	Freq	Eff
Anger			
Let the feeling out	35.9	3.0	5.3
Spend time alone	34.9	2.7	5.9
Talk to someone about my feelings	31.8	2.7	5.2
Deal with the cause of the feelings	29.7	2.9	5.9
Use humour	28.7	2.4	4.6
Confusion			
Talk to someone about my feelings	30.8	2.7	5.7
Give myself a pep talk	28.2	2.7	5.3
Use humour	26.7	2.6	5.2
Spend time alone	26.2	2.7	5.0
Chat with other people to distract myself from the feeling	25.6	2.5	5.4

Depression			
Spend time alone	35.9	2.9	4.9
Talk to someone about my feelings	35.4	2.8	5.9
Chat with other people to distract myself from the feeling	32.3	2.7	5.6
Seek physical affection	31.2	3.0	5.8
Use humour	29.7	2.6	5.6
Fatigue			
Take a shower or bath	34.9	2.8	6.0
Rest, take a nap or sleep	33.3	3.1	6.0
Splash face with cold water	32.8	2.6	5.3
Eat something	31.8	2.8	5.5
Engage in physical pre-competition activities	27.2	2.6	5.4
Tension			
Engage in physical pre-competition activities	42.1	3.2	6.4
Focus on competition strategies	33.3	3.0	5.9
Use relaxation techniques	32.8	3.3	6.5
Give myself a pep talk	32.8	2.9	6.0
Chat with other people to distract myself from the feeling	32.3	2.7	5.8
Vigour			
Engage in physical pre-competition activities	34.9	3.3	7.0
Listen to fast, upbeat music	31.3	3.1	6.3
Use humour	28.7	2.6	5.5
Use sport-related imagery	28.2	3.1	6.4
Focus on competition strategies	27.7	2.9	6.3

Note. Popularity (Pop) represents percentage of athletes who reported using strategy. Mean frequency (Freq) and effectiveness (Eff) ratings apply only to athletes who reported using the strategy. Frequency was rated on a 4-point scale; effectiveness was rated on a 9-point scale.

Group differences in mood regulation strategies

Single-factor MANOVAs were used to determine the extent to which use and effectiveness of strategies varied according to athlete gender, level of competition, and type of sport. Results showed no differences in strategies used by male (n = 102) and female (n = 72) athletes (Wilks' λ = .98, p > .05), nor by level of competition [club (n = 52), county (n = 37), regional (n = 25), national (n = 21) and international (n = 25] to regulate any of the six mood dimensions (Wilks' λ = .93, p > .05). Differences in use of mood regulation strategies by individual (n = 55) and team sport athletes (n = 131) were minimal, with one notable exception. Athletes in individual sports reported significantly greater use of the strategy "Give myself a pep talk" across all mood dimensions. Effect sizes were moderate to large (δ = .60 - .90).

Assessment of order effects

Results of a single-factor MANOVA showed that the order in which the strategies were presented to the athletes had a significant effect on their reported use (Wilks' λ = .43, p < .001). This effect was present for all mood dimensions except confusion. There was no discernable pattern to this effect, other than it was more evident for the regulation of fatigue than other mood dimensions.

Factor analysis of mood regulation strategies

To assess whether athletes use of mood regulation strategies was consistent with the two-dimensional model proposed by Parkinson and Totterdell (1999), exploratory factor analyses with varimax rotation were run for each mood dimension. Explained variance across the six mood dimensions ranged from 38.9% to 46.8%. A rotated solution for anger regulation is shown in Table 4, which shows a complex solution, typical of the solutions for all moods. None of the mood dimensions produced a solution that corresponded to the hypothesized groupings, even after cross-loading items were removed.

Discussion

The present study investigated use and perceived effectiveness of mood regulation strategies among athletes. There were at least four key features of the results. Firstly, all participating athletes reported using multiple strategies to regulate pre-competition moods. Indeed, most of the 37 strategies listed were used by 20% to 30% of the athletes and were rated as effective to very effective. Secondly, athletes tended to report using different strategies to regulate the specific mood dimensions addressed in the present study. Strategies to regulate tension were used most often and were rated as most effective. Furthermore, some strategies were rated as generally effective methods of regulating moods whereas other strategies were more closely aligned to particular mood dimensions. Thirdly, the most popular strategies were not always perceived as the most effective, suggesting scope for practitioners to promote some of the more effective but less popular strategies more widely.

Table 4: Rotated 4-factor solution for anger regulation strategies.

Strategy	1	2	3	4
Engage in physical pre-competition activities	.704			
Change my expression or posture	.693			
Control my thoughts so that they are only positive	.653			.309
Use sport-related imagery	.638			.375
Focus on competition strategies	.613			
Write my feelings down	.557		.351	
Give myself a pep talk	.506			
Do superstitious things	.499			
Engage in religious or spiritual activity	.442			
Deal with the cause of the feeling	.411			
Splash face with cold water	.409			
Pay attention to my	.381	.305		

equipment				
Spend time alone		.723		
Avoid the cause of this feeling		.702		
Think about something else		.571		
Talk to someone about my feelings		.527		.317
Eat something	.337	.514		
Drink coffee or another caffeinated beverage	.334	.476		
Listen to fast, up beat music	.379	.433		
Try to put my feelings into perspective	.361	.367		.327
Watch TV or a movie		.364	.601	
Rest, take a nap or sleep			.594	
Pamper myself		.372	.553	
Participate in non-sporting activity		.406	.518	.404
Seek physical affection	.377		.491	
Read a book or magazine	.424		.460	
Chat with other people to distract myself from the feeling		.408	.447	
Have a massage	.333		.441	
Smoke a cigarette			.436	
Take a shower or bath			.424	.308
Drink alcohol			.350	
Listen to slow, soft music				.706
Let the feeling out		.377		.622
Mentally switch off			.377	.595
Use relaxation techniques	.425			.538
Use humour		.333		.478
Participate in non-competitive exercise			.335	.354

Fourthly, athlete use of mood regulation strategies is largely unrelated to athlete gender, level of competition, and type of sport; although it was notably that athletes in individual sports used the strategy “give myself a pep talk” more often than those in team sports, perhaps because pep talks are usually delivered to teams by the captain or coach.

Differences in use of specific strategies were found between the present sample of athletes and those surveyed by Stevens and Lane (2001), especially with respect to the popularity of strategies such as humour, which was more prevalent in the present study. However, close inspection reveals that some apparent differences can be explained by small variations in methodology between the two studies. For example, 45% of athletes in the Stevens and Lane sample reported using music to regulate mood. In the present study, use of music was separated into “fast, upbeat” (used by 24% of athletes) and “soft, slow” (used by 21% of athletes), suggesting that music was similarly popular in both samples. Likewise, Stevens and Lane found “take a shower, bath, or splash water on face” to be used by 68% of athletes to regulate fatigue. In the present study, “shower or bath” (used by 35% of athletes) and “splash face” (used by 33% of athletes) strategies were presented separately but, collectively, proved equally popular in both samples.

The present results appear especially relevant for applied practitioners, given their role in preparing athletes for competition. For example, “engage in physical pre-competition activities” was seen as especially effective for reducing tension and increasing vigour, suggesting that a pre-event warm-up may be just as much about mood regulation and creating a desirable mindset as it is about physical preparation. Further, the high perceived effectiveness of relaxation techniques to reduce tension suggests they may have a special place in an athlete’s coping repertoire. However, it appears that athletes are relatively poorly equipped to address feelings of confusion and may need assistance from

practitioners to learn mood-specific coping strategies. Conversely, the general effectiveness of certain strategies suggests that several of them should be regarded as essential components of athlete preparation.

The absence of between-group differences in use of mood regulation strategies by level of competition was surprising, given that elite performers might be expected to afford mood regulation a higher priority compared to sub-elite athletes. There is no obvious explanation for this, although perhaps the current paucity of research has kept mood regulation as a low-priority component of athlete preparation, a suggestion supported by the finding that even the most popular of strategies were used by only 30% of athletes.

The lack of support among the present data for the Parkinson and Totterdell (1999) typology of mood regulation strategies suggests that it may need to be rethought, although it is acknowledged that the present sample was relatively small to facilitate a reliable factor analysis. The significant order effect identified in the present study is intriguing. Although we have no compelling explanation for this effect, researchers should give it due consideration when designing future investigations.

Given the well-established link between mood and performance, the present line of enquiry would appear to have considerable promise and further similar investigations are recommended. In particular, field experiments to evaluate the efficacy of specific mood regulation strategies might provide benefits from both theoretical and applied perspectives.

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