



December, 2002
Volume 4, Issue 3

Relationships Between Mood, Cohesion And Satisfaction With Performance Among Soccer Players

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ABSTRACT

The aim of this study was to investigate relationships between pre-competition group cohesion, mood, and performance in a soccer team over the course of a season. A male soccer team in England played eight games and data were analyzed on a game-by-game basis. Participants completed the Group Environment Questionnaire (Carron, Brawley, & Widmeyer, 1985) and Brunel Mood Scale to assess Anger, Confusion, Depression, Fatigue, Tension, and Vigor (Terry, Lane, Lane, & Keohane, 1999) before each competition. Post-competition, participants rated the quality of performance on a two-item scale. Results indicated that GEQ scores related to Vigor, lending support to the notion that being part of a cohesive team is associated with positive mood states. Relationships showed that Vigor and AGTT were associated with perceiving performance to be successful. Depressed mood was shown to be associated with a poor perception of performance. We suggest that future research should investigate the efficacy of applied interventions designed to improve cohesion and mood.

Introduction

A quest for sport psychologists working with teams is to identify constructs that relate with performance and manipulate these constructs to improve performance. Sport psychologists are faced with a plethora of possible constructs that could relate with performance, and thus selection of ones to work with is difficult (Murphy & Tammen, 1998). One variable that has been found to predict performance is mood. There is a vast amount of anecdotal evidence suggesting that poor

performance is associated with a failure to get into an appropriate mood. Investigation of relationships between mood and performance has been a major focus of research in sport psychology (LeUnes & Burger, 1998; LeUnes, 2000). Morgan (1980) popularized mood research in sport with findings showing successful performance was associated with above average vigor coupled with below average anger, confusion, depression, fatigue, and tension, a profile that when plotted graphically resembled an iceberg. Several studies have provided contrasting views on the predictive effectiveness of mood (Beedie, Terry, & Lane, 2000; Renger, 1993; Rowley, Landers, Kyllö, & Etnier, 1999; Terry, 1995). Despite the vast amount of research, findings are unclear. Recent research has suggested that mood is an effective predictor of performance when certain conditions are met (Beedie et al., 2000; Terry, 1995). Importantly, researchers should be aware that mood states could predict performance in some conditions, but not in others.

Beedie et al. (2000) argued that a great deal of the controversy related to mood performance research has stemmed from methodological and theoretical inconsistencies between studies. For example, Beedie et al. (2000) distinguished research that predicted level of achievement (i.e., mood differences between elite athletes and novice athletes or non-athletes) from research that investigated relationships between pre-competition mood and performance. The review articles of Renger (1993) and Rowley et al. (1995) discussed mood research as though it was investigating one question. Consistent with reviews by Renger (1993) and Rowley et al. (1995), Beedie et al. found that mood was a poor predictor of performance for level of achievement (Effect sizes: Tension = -0.14; Depression = 0.06; Anger = -0.02; Vigor = 0.22; Fatigue = -0.04; Confusion = -0.11). Beedie et al. (2000) showed that pre-competition mood was an effective predictor of a single performance. Meta-analysis results for open-skilled sports, which would include soccer (the sport used in the present study), were supportive of the predictive effectiveness of pre-competition mood on performance (Effect sizes: Tension = -0.21; Depression = -0.42; Anger = -0.28; Vigor = 0.48; Fatigue = -0.34; Confusion = -0.34).

Recent research has further supported the notion that mood can predict performance in basketball, an open-skilled invasion game like soccer. Lane and Chappell (2001) showed that mood-performance relationships in basketball increased when performance was assessed using a self-reference measure. **A self-reference measure of performance comprises comparing performance of an individual with his/her previous performance.** In their study, Lane and Chappell (2001) asked players to rate performance in competition in response to feeling about performance in the last game and the extent to which performance related to pre-game expectations using the items; "How do you feel about your performance in the last game" and "How did your performance relate to your pre-game expectations?". In team sports where the result is win/loss/ or draw, it is possible for a player to perform very well and the team still loses. Thus to assess the relatively subtle effect of mood on performance, it is suggested that a self-referenced measure of performance should be used. Terry (1995) argued that this approach should be adopted when conducting mood-performance research. It should be noted, that due to lack of studies, Beedie et al. (2000) did not investigate whether the type of sport interacts with the measure of performance to influence the strength of mood-performance relationships.

A second variable that seems pertinent to investigating performance in team sports is group cohesion. The cohesiveness of the team is likely to influence the team's performance and the player's mood. A successful team is likely to be associated with positive mood and engender

feelings of cohesion. A difficult issue for researchers is to unpack the direction of relationships between mood, cohesion, and performance. Research has found cohesion is not only related to sport performance (Bray & Whaley, 2001; Grieve & Whelan, & Meyes, 2000), but is also related to mood (Terry, Carron, Pink, Lane, Jones, & Hall, 2000). Terry et al. (2000) reported that being a member of a cohesive group is associated with positive mood among a sample of 415 athletes from three different sports. Using the Group Environment Questionnaire (Carron, Brawley, & Widmeyer, 1985) and the Profile of Mood States-A (Terry, Lane, Lane, & Keohane, 1999, which has since been renamed the Brunel Mood Rating Scale as validity has been extended to adult and the term adolescent no longer applies, see Terry, Lane, & Fogarty, in press), they found that high attraction to the group in terms of task cohesion, predicted low tension and anger, and high group integration for task cohesion predicted low depression. For social cohesion, they found that high attraction to the group predicted low tension, low depression and high vigor.

Collectively, research suggests that mood and cohesion are related. No published research has examined changes in mood and cohesion during the course of a season. Examining relationships between cohesion, mood, and performance on a game by game basis would allow for examination of the direction of relationships. Research has suggested that strategies designed to improve group cohesion might also be associated with mood-improvement (Widmeyer & Ducharme, 1997). The aim of the study is to investigate relationships pre-competition group cohesion, mood and performance in a soccer team on a game-by-game basis.

Method

Participants

A University soccer team in Southern England was recruited. A male team was used, as at the time of conducting the study, the University did not run a female team that played in League competition. Data were collected from eight games of which five were won and three were lost. Thirty-two players participated in the study (Age: $M = 21.22$ years, $SD = 2.09$ years) with an average of 11 years of playing experience ($SD = 2.81$ years).

Measures

Cohesion. Perceptions of team cohesion were assessed using the 18-item Group Environment Questionnaire (GEQ: Carron et al., 1985). The GEQ assesses four dimensions of cohesion. The four subscales of the GEQ are referred to as Individual Attractions to the Group-Task (ATG-T: e.g., 'I like this team's style of play', Individual Attractions to the Group-Social (ATG-S; e.g., 'Some of my best friends are on this team'), Group Integration-Task (GI-T, e.g., 'Well all take responsibility for any loss or poor performance by our team'), and Group Integration-Social (GI-S, e.g., 'Our team would like to spend time together in the off-season'). Participants rate their agreement to items (e.g., "Some of my best friends are on this team") on a 9-point scale anchored by 1 ("strongly disagree") to 9 ("strongly agree"). Brawley, Carron, and Widmeyer (1987) provided evidence of the content validity, concurrent validity, and predictive validity of the GEQ for use with sport teams. Li and Harmer (1996) further supported the factorial validity of the GEQ using confirmatory factor analysis. Schutz, Eom, Smoll, and Smith (1994) found evidence to show poor factorial validity. Carron, Brawley, and Widmeyer (1998) provide a rebuttal to

Schutz et al. (1994) arguments. Carron et al. argued that research investigating factorial validity of groups should use heterogeneous groups.

The assessment of reliability of the GEQ has focused on examining the internal consistency. Carron et al. (1998) report that GEQ scales have shown acceptable internal coefficients in previous research.

Mood. Mood was assessed using the 24-item Brunel Mood Scale (Terry et al., 1999; Terry et al., in press). The Brunel Mood Scale assesses anger, confusion, depression, fatigue, tension, and vigor. Anger items include "bad-tempered" and "angry", confusion items include "mixed-up" and "uncertain", depression items include "depressed" and "downhearted", fatigue items include "worn out" and "tired", tension items include "worried" and "anxious", and vigor items include "lively" and "energetic". Items are rated on a 5-point scale anchored by 0 ("not at all") to 4 ("extremely").

Terry et al. (1999) provide evidence of content validity through investigating the comprehensibility of items by using English language experts. They also used a sample of school-children to check the comprehensibility of items. Confirmatory factor analysis results lend support to a 24-item six-factor structure. Terry et al. (in press) reported that the Brunel Mood Scale showed evidence of factorial analysis and concurrent validity.

Performance satisfaction. Performance satisfaction was assessed using the same self-reference measure of performance used by Lane and Chappell (2001). Participants rated perceptions of performance on two items. One item was "How do you feel about your performance in the last game?", and the other items was "To what extent did your performance relate to your pre-game expectations?" Items were rated on a nine-point scale anchored by 'Extremely dissatisfied' (1) and 'Extremely pleased' (9). The Alpha coefficient to assess internal consistency was .79, a figure consistent with the Alpha coefficient reported by Lane and Chappell (2001) of .87.

Procedure

Data were collected by the team's coach, who is the first author of this study. Although this is acknowledged as a limitation, it should be noted that previous research has involved members from the support team collecting data for research purposes (Terry, 1993, 1994). Terry (1995) argued that mood research should not be used for selection purposes. The coach informed the players of the purpose of the study. He explained that the long-term aim was to develop individually tailored interventions designed to improve psychological states and performance. An important feature of this work was to develop interventions based on empirical data. To this end, participants were encouraged to report honestly. Participation by players was entirely voluntarily. Participants were free to withdraw at any part of the study with none of them withdrawing.

Participants completed the GEQ (Carron et al., 1985) and the Brunel Mood Scale (Terry et al., 1999; Terry et al., in press) within 1 hour pre-game. One hour after the game, participants completed a two-item questionnaire to assess performance satisfaction. Data analysis comprised investigating changes in mood and cohesion over time. Second, we investigating relationships

between mood, cohesion, and performance.

We used suggestions by Lane and Chappell (2001) as a guide for setting the appropriate probability value for data analysis. Lane and Chappell (2001) used arguments raised by Schutz and Gessaroli (1993) who proposed that greater emphasis should be placed on the size of the correlation rather than the significance. A limitation with reliance on statistical significance alone to interpret the meaningfulness of findings is that sample size has a considerable influence on the probability value. This means that the higher the sample size, the smaller the correlation has to be for it to be significant. In the present study, with only 11 players per team, statistical power was low.

In the present study, we used the meta-analysis results of Beedie et al. (2000) as a guide to establish the likely strength of the association between mood and performance, and to set an alpha level accordingly. Beedie et al. (2000) reported the following effect sizes (ES) for groups that could include soccer: Open skilled sports ($\underline{ES} = 0.39$), team sports ($\underline{ES} = .30$), and long duration sports ($ES = 0.26$). Thomas and Nelson (1996) argued that an effect size of > 0.8 is large, around 0.5 is moderate, and < 0.2 is small. Thus, Beedie et al. found that the likely effect of mood on performance was moderate to small.

Vincent (1995) reported that as a general rule, an r value of .5 to .7 is considered low, .7 to .8 moderate, and .9 or higher to be high. We extended consideration for significance to the $< .10$ level to be consistent with the likely effect size, thus with $df = 10$, the r value had to be greater than .55 to be significant. Although raising the p value threatens the internal validity of the study, we suggest that researchers test the reproducibility of findings from the present study to a different sample.

Results

Descriptive statistics and correlations for cohesion and mood scores by games are contained in Tables 1 and 2 and depicted graphically in Figure 1. Multivariate analysis of variance of mood scores, cohesion scores and performance yielded a significant effect (Wilks's lambda (77, 504) = .27, $p < .01$). Univariate effects were evidence for GITT ($\underline{F} (7,93) = 4.13$, $p < .001$), GISS ($\underline{F} (7,93) = 3.25$, $p < .01$), and performance ($\underline{F} (7,93) = 4.20$, $p < .001$). Self-referenced performance measures were rated higher after winning games than losing games. There were no significant differences in pre-competition mood. Figure 1 shows that mood scores tended to vary between games. An examination of standard deviation scores showed a great deal of variation. Levene's test of equality of variance indicated significant variations in Anger ($\underline{F} = 2.41$, $p < .05$), Confusion ($\underline{F} = 3.11$, $p < .01$), Depression ($\underline{F} = 4.31$, $p < .01$), and Vigor ($\underline{F} = 2.18$, $p < .05$), hence indicating that individual variation masked changes in mean scores.

Table 1. Relationships between cohesion, mood and performance for games 1-4

	Game 1 (Game Won)	Game 2 (Game Lost)	Game 3 (Game Won)

	<i>r</i>	<i>M</i>	<i>SD</i>	<i>r</i>	<i>M</i>	<i>SD</i>	<i>r</i>	<i>M</i>	<i>SD</i>
AGTS	.16	32.08	7.13	.20	33.21	6.83	-.07	35.	7.37
AGTT	.33	23.00	3.81	-.21	23.65	4.91	.40	26.	3.86
GITT	.15	30.17	3.51	-.30	29.65	4.64	-.00	31.	3.41
GISS	.30	21.75	4.75	.31	23.81	5.00	.23	25.	4.67
Anger	-.34	60.54	14.03	-.59*	55.48	18.01	.09	52.	14.73
Confusion	-.39	46.03	7.18	-.32	46.36	5.00	.03	43.	2.50
Depression	-.69*	54.63	12.92	-.59*	53.06	11.17	-.32	50.	9.33
Fatigue	-.15	53.82	10.16	-.46	53.05	11.18	-.28	46.	5.97
Tension	-.11	44.97	5.89	-.25	44.08	5.56	-.24	43.	5.51
Vigor	.64*	54.01	8.99	.69*	52.90	9.02	.44	53.	6.33

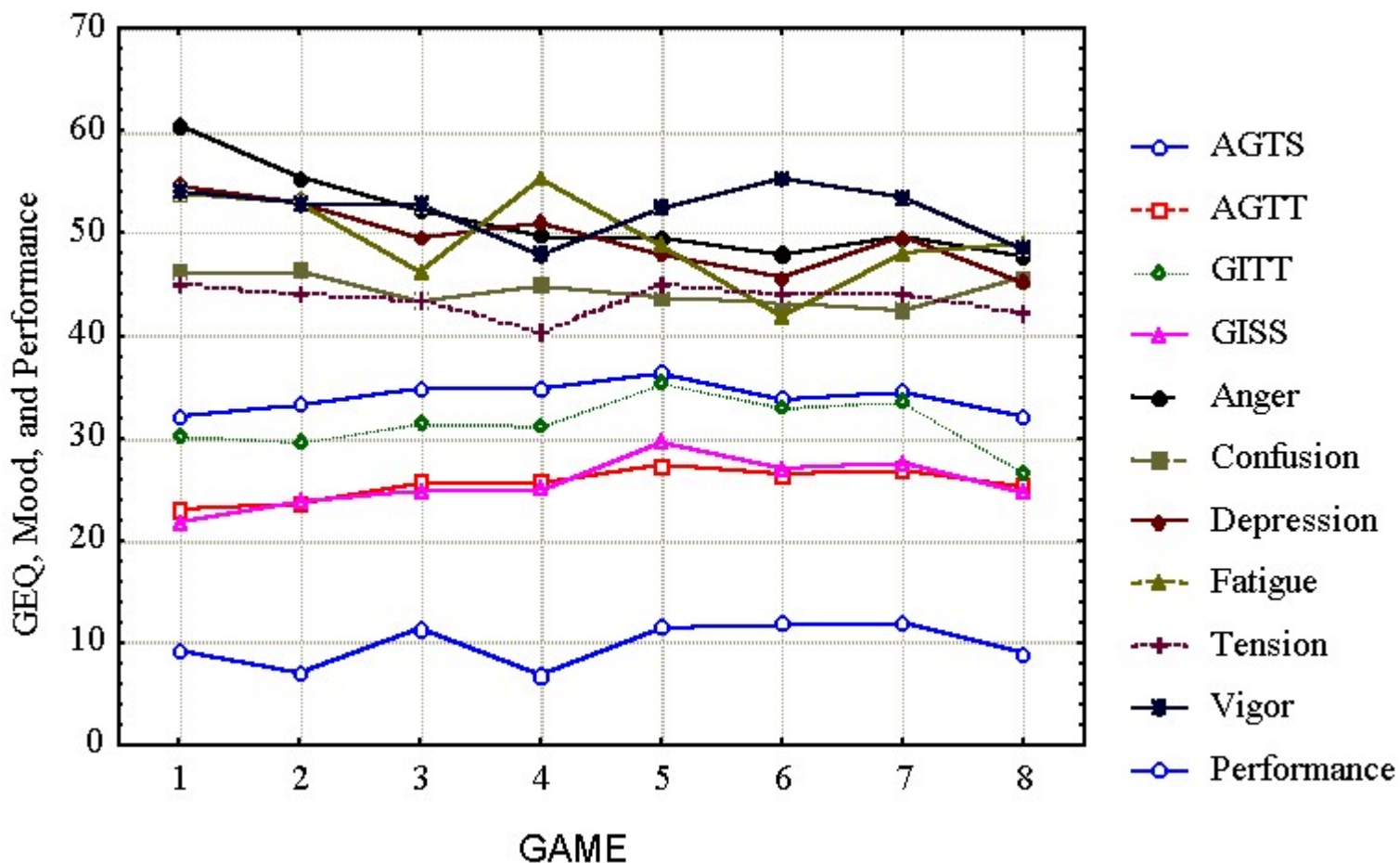
* $p < .10$

Table 2. Relationships between cohesion, mood, and performance for games 5-8.

	Game 5 (Game Won)			Game 6 (Game Won)			Game 7 (Game Won)		
	<i>r</i>	<i>M</i>	<i>SD</i>	<i>r</i>	<i>M</i>	<i>SD</i>	<i>r</i>	<i>M</i>	<i>SD</i>
AGTS	-.03	36.36	5.75	-.17	33.80	5.51	-.32	34.42	4.89
AGTT	.62*	27.36	5.11	.59*	26.44	6.15	.09	26.86	5.01
GITT	-.18	35.36	4.92	.36	32.94	4.46	-.06	33.78	4.77
GISS	-.03	29.64	4.67	.10	27.05	2.83	-.36	27.55	3.27
Anger	-.37	49.50	8.35	-.05	47.90	4.56	-.20	49.64	8.04
Confusion	.37	43.76	3.00	-.37	43.10	2.54	-.41	42.47	.95

Depression	-.67*	47.93	4.72	-.42	45.71	1.44	.16	49.66	9.25
Fatigue	-.33	48.84	10.46	-.02	41.97	3.54	.19	48.05	12.13
Tension	.20	44.93	10.34	-.14	44.16	5.99	.11	44.04	6.47
Vigor	.49	52.45	10.68	.12	55.41	8.64	.43	53.50	6.38
* $p < .10$									

Figure 1. Mood, cohesion and performance scores by game.



Performance relationships for game 1 indicated that Vigor positively related and Depression were inversely related. For game 2, results show Vigor was positively related to performance while Anger and Depression inversely related to Performance. For Game 3, there were no significant relationships and for Game 4, Vigor positively related to Performance. Relationships for Game 5 indicated that AGTT positively related to Performance and Depression inversely related to Performance. For game 6, AGTT positively related to Performance. For game 7, there were no significant relationships, and for game 8 indicated that AGTT, Anger, Tension, and

Vigor positively related to Performance, while Fatigue inversely related to Performance.

To provide a clear overview of relationships between mood, cohesion, and performance we merged data into a single file. Merging data facilitates using multiple regression, although an acknowledge limitation of this approach is that mood taken at different points in time is treated as independent data. This strategy for analyzing data was also used in previous research (Lane & Chappell, 2001; Terry, 1995). Multiple regression results indicated 49.60% (**Multiple R** = .70, $p < .01$) of Performance variance was predicted by mood and cohesion. Significant predictors included ATGT ($\beta = .18$, $p < .05$), ATGS ($\beta = .21$, $p < .05$) and Vigor ($\beta = .54$, $p < .01$). Vigor correlated with AGTS ($r = .27$, $p < .05$) and AGTT ($r = .28$, $p < .05$). Although this comprises the independence of cases, multiple regression provides a clear way of showing the strength of relationships between variables.

Discussion

The aim of the present study was to investigate relationships between cohesion, mood, and perceptions of performance. Distinguishing questions which mood should be used to answer has advanced mood research. Expecting mood to distinguish elite athletes from novice athletes is likely to yield non-significant values (Beedie et al., 2000; Rowley et al., 1995). Recent research has suggested mood is an effective predictor of performance when mood is assessed shortly before competition and when performance is assessed using self-referenced measures similar to the measure used in the present study (Beedie et al., 2000; Lane & Chappell, 2001).

Previous mood research in soccer has shown that mood shows moderate to weak relationships with performance in terms of win/draw/lose (Hassmén & Blomstrand, 1995). In the present study, findings show mood had a much stronger relationship, although it is acknowledged that mood did not predict performance for each game. We suggest that differences between the strength of relationships between those found in the present study with those reported by Hassmén and Blomstrand (1995) might be ascribed to how performance was assessed. Previous research has suggested that mood might predict a greater proportion of performance variance in team games if a self-referenced performance measure was used (Beedie et al., 2000; Lane & Chappell, 2001). Hassmén and Blomstrand (1995) used a win-loss criterion to assess soccer performance. Soccer performance comprises individuals playing in different positions. A forward might score two goals and would rate performance in that game positively. If the player reported high scores of Vigor, mood and performance would be related. Extending this example, if the team loses 3 goals to 2, and win-loss is used as the performance measure, mood will show no relationship with performance.

Findings show that vigor showed the strongest relationship with performance (Tables 1 and 2). Findings for negatively oriented mood were inconsistent. Depression tended to be debilitating of performance, but a limitation of depression scores is that it suffers from a restricted range. Lane and Terry (2000) reported that participants typically report zero for each depression item. The nature of correlation relies on range. With a restricted range in scores, and with participants tending to report zero for each item, this suggests that when participants reported some depression, it was associated debilitated performance.

Given that mood showed some utility for predicting satisfaction with performance, identifying factors associated with mood has some relevance. In the context of team sports, cohesion should relate with mood and performance. In the present study, findings show that cohesion and mood were related. Attraction to the Group Task and Attraction to the Group Social related significantly to Vigor. In addition, results show that mean scores for pre-competition measures of mood and cohesion remained at approximately the same level. An examination of the range of scores indicated that there was a considerable variation in scores. In the present study, the team did not remain stable with 32 players being used in eight games. Cohesion is proposed to be relatively stable once the group has been formed (Carron et al., 1998). Findings of the present study suggest that the average score for cohesion was consistent, with some players reporting feeling an increase in cohesion and other players reporting a decrease in cohesion.

Findings showing cohesion scores related with mood are consistent with previous research. Terry et al. (2000) found that being part of a cohesive team was associated with positive mood. Extending this logic, it is possible that individuals use feelings of cohesion to repair negative psychological states after defeat. Recent research has found that individuals use strategies such as talking to people as strategies to improve mood (Stevens & Lane, 2001). A cohesive team not only will not only provide a supporting environment in terms of engendering feelings of belongingness, but also provide individuals with people to confide in. Further research might wish to investigate the type and effectiveness of strategies that athletes used to repair mood following poor performance.

Findings of the present study suggest that interventions to improve cohesion could also lead to improved mood. Widmeyer and Ducharme (1997) found that goal setting influenced group cohesion. The confidence in, and perceived difficulty of self-set goals has also been found to influence mood (Brehm, 1999; Lane, 2001; Locke & Latham, 1990). Failure to achieve important performance related goals has been found to lead to depression (Lane & Terry, 2000). In team sports, the interplay between group members will influence confidence to attain important goals. For example, in soccer, a forward might set a goal to score a goal per game. The likelihood of this outcome is influenced by the number of shots on goal, the extent to which the team attack, etc. In short, a forward relies heavily on the contribution of other players. Thus, goal setting in soccer should involve all players in the team to promote feelings that players are working toward common ends.

A limitation of the present study is that the small sample size restricts the generalizability of findings. The small sample size also led to the adoption of a generous alpha level. Thus, there is need for further research to cross-validate findings from the present study to a different, and larger sample. A second limitation of the present study derives from using the coach to collect data. It is possible that some players might have thought that the coach would use questionnaire scores for selection.

A third limitation is that the sample used was male only. It should be noted that Hassmén and Blomstrand (1995) used a female soccer team. There has been an absence of research testing whether gender moderates mood-performance relationships. Research has either combined males and females into a single sample or controlled for gender using single sex studies. It is suggested that future research might explore the extent to which gender moderates mood-performance

relationships.

In conclusion, the present study found that cohesion and mood related to performance. Cohesion and mood were also found to correlate. We suggest that future research should test the effectiveness of applied interventions designed to improve cohesion.

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