

THE IMPACT OF COMPETITION LOCATION AND GENDER ON INDIVIDUAL
PERCEPTION OF TEAM EMOTION, CONTROL,
AND COLLECTIVE EFFICACY

By

Lindsey Weller

Submitted to the

Faculty of American University

in Partial Fulfillment of

the Requirements for the Degree of

Masters of Arts

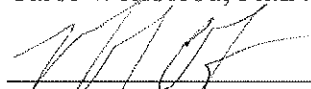
In

Psychology

Chair:



Carol Weissbrod, Ph.D.



Michele Carter, Ph.D.



Keith Gill, MA



Dean of the American University

August 27, 2012

Date

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ABSTRACT

This study investigated the effects of location, gender, and team win percentage, on perceived team anxiety, dejection, excitement, anger, happiness, team control, external control, environmental factors control, ability, effort, persistence, preparation, unity, and total collective efficacy (TCE), for field hockey (N=34), soccer (N=12), and lacrosse athletes (N=19). Data was collected ninety minutes before home and away competitions. Athletes reported more team anxiety, anger, and excitement before home games, and more team ability, persistence, preparation, unity, and TCE before away games. Women had more similar home/away ratings than men for effort, persistence, preparation, unity, and TCE. For women, team win percentage was predictive of dejection, excitement, happiness, effort, persistence, preparation, and TCE. For men, it was predictive of team control, external control, and environmental factors control. Location, gender, and team success affect the psychology of athletes before competition, but not always as expected.

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CHAPTER 1

INTRODUCTION

The home field advantage is a well-documented phenomenon, spanning decades, sports, skill levels, and sport type (individual and group). Schwartz and Barsky (1977) were the first to highlight three potential categories that create the home field advantage: learning factors (familiarity with the playing environment and all its components), travel factors, and crowd factors. It is notable that these three categories are primarily physical, external factors. Ultimately, Schwartz and Barsky (1977) label crowd factors as the most influential of the three. They define the home advantage as a “triangular relationship between audience, performer, and community” (p. 658). Courneya and Carron (1992) expanded upon these factors, proposing a theoretical framework that includes five major components: game location, game location factors (crowd, familiarity, travel, and rule factors), critical psychological states, critical behavioral states, and performance outcome. They begin to incorporate psychological, internal factors as pieces of the home field advantage puzzle, but the psychological factors have yet to be explored in detail.

This study aims to begin to identify the psychological underpinnings of the home field advantage, by looking at three potential psychological contributors: perceived team emotion, control, and collective efficacy.

Home Field Advantage Factors

Several studies have examined these factors individually, a vast majority supporting the above model by finding that the aforementioned factors make a difference, and the difference is a greater advantage for the home team. Nevill, Newell, and Gale

(1996), who studied end-of-season results and statistics from English and Scottish soccer teams, and Agnew and Carron (1994), who looked at archival data from two seasons of Canadian ice hockey, found that larger and denser crowds give the home team an advantage. Venue familiarity was studied by Pollard (2002), who found that baseball, basketball, and ice hockey teams that relocated to new stadiums or playing facilities from 1987 to 2001 exhibited a clear decrease in home field advantage. In a related earlier study using archival data, Pollard (1986) found that soccer teams, who had fields that were larger or smaller than the standard size field, had a larger home field advantage than teams with an average size field, due to their familiarity with the uniqueness of the field. Travel distance was studied using archival data for ice hockey, soccer, and basketball teams, and found to play a role in that, the farther an away team traveled the larger the home field advantage became for the home team (Pace & Carron, 1992; Pollard, 1986; Snyder & Purdy, 1985).

Critical behavioral states in the Courneya and Carron (1992) model refer to the actions of the players and referees that contribute to an increased home field advantage for the home versus away team or individual. For example, Nevill, Balmer, and Williams (2002) showed soccer referees videotapes of tackles/challenges and had them make calls as if in a game. The referees who watched videos with more crowd noise were more uncertain in their decision-making and called significantly less fouls against the home versus away team.

Courneya and Carron (1992) effectively explain and conceptualize how the many components of game location create a home field advantage, but they do not go so far as examining potential moderators of the phenomenon. Jamieson (2010) conducted a meta-

analysis of the occurrence of the home field advantage and six possible external moderators: sport type (individual or group), level of competition, time era, season length, game type, and sport. A significant home field advantage was found for the ten sports reviewed (baseball, golf, cricket, football, hockey, boxing, tennis, basketball, rugby, and soccer) when looking at the overall effect across all aforementioned moderators, with soccer exhibiting a significantly stronger home field advantage than any of the other nine sports. According to Jamieson's (2010) analyses, on average, the home team is expected to win 60% of the time, and this does not differ between individual and group sports, or between collegiate and professional games. The home field advantage was significantly greater for games prior to 1950 than games that took place from 1951-2007. Sports with more than 100 games per season had a significantly smaller home field advantage than those with less than 100 games. Finally, Jamieson (2010) found that high-pressure playoff and championship games produce a stronger home field advantage than do lower pressure regular season games. This suggests that the home field advantage does, in fact, exist, and that it is affected by a number of moderators. The current study attempts to identify some of the psychological moderators of the home field advantage.

Emotion

Of the three mechanisms investigated in this study, pre-competition emotion is the most researched. The emotional states of athletes have been shown to be very important in determining successful performance (Hanin, 2007; Jones, 2003). Duffy and Hinwood (1997) for example, examined the impact of anxiety in 30 English professional male soccer players one hour prior to one home and one away match. They found that anxiety was only slightly, and non-significantly, higher prior to the away match, suggesting that

anxiety may not be a contributor to home field advantage. However, these results are based on a small sample size and consisted of measurement prior to only one home and one away match.

However, some research points to anxiety as a facilitator of successful performance, suggesting that anxiety in itself directs movement away from threats, which causes people to behave in a way that would enable them to avoid failure (Carver, 2001; Carver, 2004; Tamir, Chiu, & Gross, 2007). Although, more often than not, the aforementioned anxiety-related attention to threats has been shown to have a damaging effect on performance. Anxiety has been shown to direct attention toward negative stimuli, and, therefore, takes attention and energy away from neutral or positive stimuli (Hansen & Hansen, 1994; Jones, 2003; Ohman, Flykt, & Esteves, 2001). In addition, high intensity anxiety has been shown as very difficult to ignore (Vast, Young, & Thomas, 2010).

Similarly, positive emotions have been shown to occur without negatively affecting attention to performance. Carver (2004) and Carver and Scheier (1990) found that positive emotions can occur simultaneously with activity without negatively affecting performance, and can actually promote beneficial movement toward incentives and goal attainment. Along the same lines, Gardner and Moore (2006) speculate that positive emotions actually free up an individual's attention resources, facilitating better goal orientation and achievement. Vast et al. (2010) found that for female softball players following a national competition, happiness and excitement were positively correlated with perceived concentration, while dejection and anger were negatively correlated with perceived concentration. Excitement and happiness were also viewed as more likely than

anxiety, dejection, or anger, to promote focus on performance enhancing factors. The intensity of the positive emotions was directly correlated with focus on performance-relevant factors, so the higher the intensity of the positive emotions, the higher the focus on performance-relevant factors. Therefore, it can be speculated that more positive emotions prior to and during a competition could result in better performance. In relation to the home field advantage, if positive emotions are related to better performance, then it would be expected that home teams would report more positive emotions prior to a game than away teams.

Emotion is primarily thought of as an individual state; but emotions are capable of being communicated and passed on to others both verbally and nonverbally. Hatfield, Cacioppo, and Rapson (1994) found that within teams, emotions were frequently mimicked and even transferred between teammates. This indicates that teams are capable of having a collective set of emotions, which have been found to be predictive of group performance (Barsade, 2002). Allen, Jones, and Sheffield (2009a) echoed these findings when looking at the pre-competitive emotional state of various sports teams (field hockey, football, rugby, lacrosse, netball, ultimate Frisbee, and basketball). They found that overall, prior to competition, members of winning teams had lower levels of anxiety than losing teams. Following from the home field advantage research, since winning teams are more often the home team, it would be expected that home teams would exhibit less anxiety than away teams prior to competition.

The current study measured many of the same aforementioned emotions, but in the fairly rare pre-game context. Emotion in relation to gender was also assessed, which is a relatively unexplored area in sport psychology. This study asked the question: do pre-

game emotions differ prior to home and away games and between male and female athletes?

Collective Efficacy

Collective efficacy is an additional mechanism to consider. As defined by Bandura (1997), collective efficacy is a group's belief that they are capable of performing well. This belief has been shown to factor into the success, or lack thereof, of sports teams (Myers, Feltz, & Short, 2004; Myers, Payment, & Feltz, 2004). Specifically, Myers, Feltz, and Short (2004) studied collective efficacy and team performance among offensive football players, and found that pre-competition collective efficacy scores were positively correlated with subsequent performance. Myers, Payment, and Feltz (2004) found a similar finding among female ice hockey players, in which pre-competition collective efficacy was positively correlated with team performance. Dithurbide, Sullivan, and Chow (2009) found that recreational volleyball teams with higher subjective perceptions of performance and objective measures of performance had stronger perceived collective efficacy than teams with lower subjective performance perceptions and objective performances. Along the same lines, Allen et al. (2009a) found that winning teams from a variety of sports (field hockey, soccer, rugby, netball, ultimate Frisbee, basketball, and football) displayed higher levels of pre-competition collective efficacy than losing teams. Therefore, it would be expected that in conjunction with the home field advantage, home teams would report higher collective efficacy than away teams.

The current study sought to answer the question: do athletes report a higher perceived collective efficacy when playing at home than when they play away? In

addition, is there a gender difference in perceived collective efficacy overall, and/or prior to home or away games? The answers to these questions would be important to uncover because of their potential to help athletes, teams, and coaches better understand how to prepare depending on game location and the gender of the team.

Control

Winning teams have been shown to demonstrate an increased amount of perceived control, viewing success and outcome as controllable by the team (Allen et al., 2009a). Once again, since winning teams are more often the home team, it would follow that home teams would show a higher level of perceived control of game outcome than away teams.

Greenlees et al. (2007) identified another moderator of perceived control: the perceived importance of a game or match. After a competitive match, athletes completed the Causal Dimension Scale for Teams questionnaire along with measures of perceived success and match importance. It was found that the more important a game is reported to be, the fewer external attributions an athlete will make. In other words, the more important a game is perceived to be, the more likely an individual is to view the outcome as something within personal, internal control; and not something which is controlled by external factors. In the current study, perceived game importance will not be studied, but win percentage up until the game at which data is collected will be used as an objective measure of team ability.

Gender can be considered a factor as well. It has been a relatively ignored area when it comes to emotion, control, and collective efficacy in sport, as well as the home field advantage in general. As far as perceived control is concerned, Greenlees et al.

(2007) found that the more successful a game performance is perceived to be the more internal attributions about that game performance an individual makes, and males use significantly more internal attributions in regards to game performance than females. In other words, men are more likely than women to attribute athletic control and outcome responsibility to themselves or their team rather than to external forces. Therefore, it would be expected that regardless of home or away game location and amount of success, male teams would report higher control ratings than female teams.

The current study posed the question: is there a difference in perceived control for individual teams prior to home and away games? In addition, is there a significant difference in perceived pre-competition control between male and female teams in general, and prior to home and/or away games?

Current Study

This study is the one of the few to look at emotion, control, and collective efficacy in sport in a pre-competition setting and between male and female teams. The current study aims to take a more in depth look at the “critical psychological states” piece of the home field advantage identified by Courneya and Carron (1992). Specifically, the researchers wanted to identify differences in psychological state prior to home and away games, with the hope of shedding light on the psychological mechanisms at work prior to the start of competition.

It was hypothesized that individuals would report significantly less perceived team negative emotion (anxiety, dejection, and anger), more perceived team positive emotion (happiness and excitement), more perceived team control of game outcome, and more perceived team collective efficacy prior to home versus away games. In addition, it

was thought that the difference between home and away questionnaire ratings would be smaller for male teams than for female teams. Finally, it was predicted that male teams, both home and away, would have higher collective efficacy and game outcome control ratings than female teams.

CHAPTER 2

METHOD

Participants

Participants were recruited from NCAA Division 1 men and women's lacrosse, field hockey, and soccer teams. These sports were chosen because they are team sports, have similar playing surfaces, have similar field setup and motion, and are some of the less researched sports, particularly field hockey and lacrosse. The sample was comprised of one men's lacrosse team, one men's soccer team, one women's soccer team, and two women's field hockey teams. In total, 84 (48 men and 36 women) participated in the study. However, only those athletes who completed questionnaires prior to both home and away games were included in the analyses, which left a total of 65 athletes (31 men and 34 women). All were required to be at least 18 years old and on the roster of one of the aforementioned teams. Participant demographics of those included in the study are presented in Table 2.1.

Measures

Demographics/Player Information. An 8-item questionnaire was created for this study to ascertain background information including: sex, age, year in school, sport, position, starter or non-starter, average number of minutes played per game, and location of the game (See Appendix A).

Modified Causal Dimension Scale for Teams (CDS-T). This measure was used to assess perceived team control prior to home and away matches. Greenlees, Lane, Thelwell, Holder, and Hobson (2005) developed and validated the measure as a team-

Table 2.1

Participant Demographics

	Field Hockey	Lacrosse	Soccer
Sex			
Male (n)	0	19	12
Female (n)	34	0	0
Age (M, sd)	19.24, 1.23	20.11, 1.41	20.25, 1.29
Year in School			
Freshman (n)	13	6	0
Sophomore (n)	6	3	4
Junior (n)	11	6	2
Senior (n)	4	2	5
Grad (n)	0	2	1

referent attribution scale. The original questionnaire consists of 16 items encompassing four subscales: locus of causality (Cronbach's Alpha= 0.82), stability (Cronbach's Alpha= 0.77), team control (Cronbach's Alpha= 0.89), and external control (Cronbach's Alpha=0.74). For the purpose of this study, only the team control and external control subscales were used. In addition, three items were added in order to capture field familiarity, crowd influence, and travel influence. These three items created an environmental factors control subscale. The Cronbach's Alphas for the three subscales in the current study were: team control= 0.92, external control= 0.85, and environmental factors control= 0.54. Item 11 in the environmental factors control subscale was

eliminated because it did not fit well with the other two items, as indicated by the low alpha. After it was eliminated, the Cronbach's Alpha for the environmental factors control subscale became 0.70. Ultimately, the measure used included a total of 10 items. All items, including the three additions, consisted of two opposing statements relating to control (i.e. your team can control versus your team cannot control). The opposing statements appeared at either end of a 9-point scale. Circling the numbers on the scale closest to either statement indicated agreement with that statement.

The original CDS-T was created for post-competition use, and begins by asking participants to identify the major cause of the result of the game they have just played. It then asks individuals to think about the cause and whether "the cause(s) is something..." followed by the original 16 items. For the purpose of this study, the open-ended question and the first two sentences of the aforementioned instructions were removed, and the 11 included items referenced the modified statement: "is the outcome of the upcoming game something..." to fit the pre-competition setting of the study (See Appendix B). The mean of each subscale was used to measure perceived team control prior to home and away games, and between men and women.

Modified Sport Emotion Questionnaire (SEQ). This 22-item questionnaire was used to assess perceived team emotion prior to home and away matches. Jones, Lane, Bray, Uphill, and Catlin (2005) developed and validated the questionnaire as a pre-competitive measure of emotion in sport settings. The 22 items are divided into 5 overarching emotion categories including: anxiety (Cronbach's Alpha= 0.87), dejection (Cronbach's Alpha= 0.82), excitement (Cronbach's Alpha= 0.81), anger (Cronbach's Alpha= 0.84), and happiness (Cronbach's Alpha= 0.88). The Cronbach's Alphas for the

current study were: anxiety= 0.75, dejection= 0.82, excitement= 0.86, anger= 0.87, and happiness= 0.85. Items were rated on a 5-point scale from 0 (“Not At All”) to 4 (“Extremely”). The original questionnaire was developed to assess the emotion of individual athletes prior to competition. In this case participants were instructed to indicate how they believed *their team* was feeling at that moment, in relation to the upcoming game (See Appendix C). The means of the five emotion subscales were used to measure perceived team emotion prior to home and away games, and between men and women.

Collective Efficacy Questionnaire for Sports (CEQS). This 20-item questionnaire was used to assess perceived team collective efficacy prior to home and away games. Short, Sullivan, and Feltz (2005) developed and validated the CEQS (Cronbach’s Alpha= 0.97). Participants were asked to “rate [their] team’s confidence, in terms of the upcoming game or competition, in their collective ability to...” followed by 20 statements (i.e. “perform under pressure”), which encompass 5 areas including: ability (Cronbach’s Alpha= 0.92), effort (Cronbach’s Alpha= 0.88), persistence (Cronbach’s Alpha= 0.85), preparation (Cronbach’s Alpha= 0.89), and unity (Cronbach’s Alpha= 0.85). The Cronbach’s Alphas for the current study were: ability= 0.94, effort= 0.86, persistence= 0.87, preparation= 0.87, unity= 0.87, and total CEQS= 0.97. Each item was rated on an 11-point scale from 0 (“Not at All Confident”) to 10 (“Extremely Confident”) (See Appendix D). The means of the five subscales and the twenty items together were used to measure perceived team collective efficacy prior to home and away games, and between men and women.

Procedure

Coaches were contacted through email and phone to gain permission to work with their athletes. After permission was granted, athletes were sent an email introducing them to the study and offering them the opportunity to participate. Game days were then agreed upon between the researcher and coach. Two home and two away games was the preferred amount, but many coaches were not willing to participate to that degree. Therefore, four teams completed packets prior to one home and one away game, and one team completed packets prior to two home and two away games.

On game day, packets containing the original recruitment letter, consent form, Demographic/player information, Modified Causal Dimension Scale for Teams, Modified Sport Emotion Questionnaire, and Collective Efficacy Questionnaire, were left in the locker room for the athletes to complete prior to heading out to the field for pre-game warm-up. The athletes filled out the packets in the locker room in the absence of coaches and the researcher, and participation was completely voluntary. The packets were collected by one athlete in the locker room, placed in a sealed manila envelope, and then given back to the researcher or, if necessary, the coach, who then returned them to the researcher. Coaches were not aware who chose to participate and who did not in order to protect the confidentiality of the athletes. On average, packets were filled out 1.5 hours prior to game time. The locker room setting and time frame were chosen to ensure that athletes were focused on the upcoming match, and to capture the most accurate and relevant answers as possible.

Due to the circumstances under which data was collected, the games chosen for each team depended greatly on the approval and comfort of the coaching staff. Therefore,

the researchers had little control in terms of game order (home first versus away first) and time of season in which the games took place. All of the four teams began with home games, primarily due to team availability and coach agreement. Season lengths were approximately two and a half months (10 weeks) long, and agreed upon games were at various points in the season (1-3 weeks= early, 4-6 weeks= midseason, 7-10 weeks= late). Data collection occurred for early to midseason games for one team, mid to late season games for two teams, early and late season games for one team, and early, mid, and late season games for one team.

CHAPTER 3

RESULTS

Hypothesis 1a predicted that athletes would report significantly less perceived team negative emotion (anxiety, dejection, and anger), and significantly more perceived team positive emotion (happiness and excitement) prior to home versus away games. In general, the ratings obtained in the current study are higher than those obtained in prior research (Allen, Jones, & Sheffield, 2009a; Allen, Jones, & Sheffield, 2009b; Vast, Young, & Thomas, 2010). Paired-sample-t-tests were conducted to compare the positive and negative emotions in home game and away game conditions. First, the negative emotion ratings were analyzed. There was no significant difference between home and away ratings for dejection. There were significant differences between home and away perceived team anxiety and perceived team anger ratings (See Table 3.1). Specifically, individuals reported significantly more perceived team anxiety and anger prior to home games versus away games, which was the opposite of what was predicted.

The positive emotions were analyzed next. There was no significant difference in home perceived team happiness ratings and away perceived team happiness ratings. There was a significant difference between home perceived team excitement ratings and away perceived team excitement ratings, with individuals reporting significantly more perceived team excitement prior to home games versus away games, which is consistent with the original prediction (See Table 3.1).

Hypothesis 1b predicted that individuals would report significantly more perceived team control of game outcome prior to home versus away games. In general,

Table 3.1

Perceived Positive and Negative Team Emotion Home and Away

	Home	Away		
	M (sd)	M (sd)	t	p value
Positive				
Excited*	10.46 (3.51)	9.81 (4.00)	1.857	0.034*
Happy	7.38 (3.71)	7.08 (3.90)	0.924	0.180
Negative				
Anxious*	6.65 (3.37)	6.08 (3.66)	1.697	0.047*
Dejected	1.28 (2.64)	1.16 (2.17)	0.332	0.371
Angry**	2.45 (3.33)	1.62 (2.53)	2.541	0.007**

***p<.001, **p<.01, *p<.05

the ratings obtained in the current study are comparable to those obtained in prior research (Allen, Jones, & Sheffield, 2009a; Greenlees et al., 2007). Paired-sample-t-tests were conducted to compare the team control, external control, and environmental factors control subscale ratings prior to home and away games. There was no significant difference between home perceived team control ratings and away perceived team control ratings; between home perceived team external control ratings and away perceived team external control ratings; and between home perceived team environmental factors control ratings and away perceived team environmental factors control ratings (See Table 3.2).

Table 3.2

Perceived Team Control of Game Outcome Home and Away

	Home	Away		
	M (sd)	M (sd)	t	p value
Team control	31.54 (5.32)	31.39 (5.46)	0.283	0.389
External control	16.42 (7.11)	17.39 (5.94)	-1.417	0.081
Environmental factors control	9.78 (4.01)	9.20 (3.17)	1.387	0.170

***p<.001, **p<.01, *p<.05

These results indicate that individuals did not report a significant difference in any perceived control domains prior to home versus away games.

Hypothesis 1c predicted that athletes would report significantly more perceived team collective efficacy prior to home versus away games. The minimum possible score on each CEQ subscale was 0, while the maximum was 40. The minimum possible total CEQ score was 0, while the maximum possible score was 200. There are few studies that have used the pre-competition methodology, and, therefore, relatively few studies that have included the CEQS, so it is difficult to gauge where the ratings obtained in the current study stand in comparison. Paired-sample-t-test were conducted to compare the ability, effort, persistence, preparation, and unity subscale ratings, as well as the total collective efficacy ratings prior to home and away games. There was no significant difference between home perceived team effort ratings and away perceived team effort ratings. There was a significant difference between home perceived team ability ratings

and away perceived team ability ratings; between home perceived team persistence ratings and away perceived team persistence ratings; between home perceived team preparation ratings and away perceived team preparation ratings; between home perceived team unity ratings and away perceived team unity ratings; and between home perceived team total collective efficacy (CEQ) ratings and away perceived team total collective efficacy (CEQ) ratings (See Table 3.3). Specifically, individuals reported

Table 3.3

Perceived Team Collective Efficacy Home and Away

	Home	Away		
	M (sd)	M (sd)	t	p value
Ability***	27.82 (7.51)	31.58 (5.87)	-4.022	<0.001***
Effort	30.16 (6.93)	31.11 (5.76)	-1.236	0.111
Persistence**	27.72 (6.59)	29.39 (6.19)	-2.770	0.004**
Preparation**	29.55 (6.10)	31.19 (6.23)	-2.749	0.004**
Unity***	27.86 (7.15)	29.89 (6.39)	-3.609	0.0005***
Total CE***	143.12 (30.34)	153.16 (27.71)	-3.640	0.0005***

***p<.001, **p<.01, *p<.05

significantly more perceived team ability, persistence, preparation, unity, and total collective efficacy prior to away versus home games, which is not consistent with the original predictions.

Preliminary analyses were conducted for the gender hypotheses, hypotheses 2 and 3. Chi square tests were conducted in order to determine if demographic variables were related to gender. If they were indeed related to gender, then they could be accounting for or contributing to any subsequently found gender differences in subscale ratings. First, year in school was tested. There was no significant relationship between year in school and gender ($\chi^2(3)=3.49, p=0.322$). Whether or not athletes were starters or non-starters was tested next. There was also no significant relationship between starter/non-starter status and gender ($\chi^2(1)=3.504, p=0.061$).

Following these preliminary analyses, hypothesis 2 and 3 were addressed. Hypothesis 2 predicted that the difference between home and away ratings for all measures would be smaller for male athletes than for female athletes. Paired-sample-t-tests were conducted to compare the home minus away control, emotion, and collective efficacy rating differences between men and women. There were no significant mean home/away rating differences between men and women for team control, external control, or environmental factors control (See Table 3.4).

Perceived team emotion subscales were then analyzed. There were no significant home/away rating differences between men and women for anxiety, dejection, excitement, or anger. The happiness home/away rating difference between men and women approached significance, with women having a lower home/away rating difference than men. Overall, there were no significant mean emotion home/away rating differences between men and women (See Table 3.4).

Table 3.4

Home/Away Rating Differences Between Men and Women

	Men	Women		
	M (sd)	M (sd)	t	p value
Control				
Team control	0.41 (5.86)	0.50 (3.00)	-0.082	0.468
External control	1.13 (6.86)	1.19 (5.54)	0.038	0.485
Environmental factors control	0.00 (3.40)	0.97 (3.65)	-1.219	0.232
Emotion				
Anxious	0.59 (2.34)	0.09 (3.26)	0.875	0.194
Dejected	0.19 (3.49)	0.50 (1.63)	1.004	0.162
Excited	0.91 (2.52)	0.06 (3.40)	1.427	0.082
Angry	1.09 (3.60)	0.25 (1.34)	1.226	0.115
Happy	0.78 (2.89)	0.25 (2.09)	1.602	0.060
Collective efficacy				
Ability	4.41 (10.52)	1.84 (5.01)	-1.342	0.095
Effort**	2.84 (6.90)	1.09 (6.46)	-2.481	0.010**
Persistence**	3.19 (6.10)	0.28 (4.03)	-2.865	0.004**
Preparation*	2.81 (6.08)	0.31 (3.75)	-2.107	0.022*
Unity*	3.06 (6.43)	0.47 (2.05)	-2.309	0.014*
Total CE**	16.31(29.48)	1.25(15.88)	-2.710	0.006**

***p<.001, **p<.01, *p<.05

Finally, perceived team collective efficacy subscales and total collective efficacy ratings were analyzed. There was no significant perceived team ability home/away rating difference between men and women, which was the only non-significant finding for collective efficacy. Men had a significantly higher home/away rating difference than women for perceived team effort, persistence, preparation, unity, and total perceived collective efficacy (See Table 3.4). These findings, contrary to the hypothesis, show women as having more similar home and away ratings than men.

Hypothesis 3 predicted that male athletes, both home and away, would have higher game outcome control and collective efficacy ratings than female athletes. Paired sample t-tests were conducted for each sex separately to determine whether there were significant differences between home and away ratings, and, in turn, whether the home and away ratings could be collapsed for each sex. For men, there were no significant differences between home and away ratings for perceived team control, external control, and environmental factors control. There were significant mean home and away differences for the following collective efficacy subscales: perceived team ability, perceived team effort, perceived team persistence, perceived team preparation, and perceived team unity. The mean home and away difference for total perceived collective efficacy was also significant for men (See Table 3.5). For all of these collective efficacy differences, men had significantly higher away ratings.

For women, there were no significant differences between home and away ratings for perceived team: team control, external control, environmental factors control, effort, persistence, preparation, unity, and total collective efficacy. The only significant home/away difference for women was for perceived team ability (See Table 3.5).

Table 3.5

Perceived Team Control and Collective Efficacy Ratings Home and Away Separated by Sex

	Home	Away		
	M (sd)	M (sd)	t	p value
Men				
Control				
Team control	31.08 (5.62)	31.18 (5.27)	-0.114	0.910
External control	17.50 (7.71)	18.25 (5.83)	-0.743	0.462
Environmental factors	9.48 (4.54)	9.15 (3.26)	0.562	0.577
control				
Collective Efficacy				
Ability***	26.70 (8.57)	32.05 (5.27)	-3.49	0.001***
Effort*	27.98 (6.27)	30.60 (5.58)	-2.573	0.014*
Persistence***	26.43 (5.80)	29.70 (5.00)	-3.673	0.001***
Preparation*	27.83 (6.53)	30.23 (6.20)	-2.604	0.013*
Unity**	25.68 (7.29)	28.85 (6.14)	-3.312	0.002**
Total CE***	134.60(30.30)	151.43(24.71)	-3.915	<0.001***
Women				
Control				
Team control	32.09 (4.98)	31.65 (5.76)	0.879	0.386
External control	15.15 (6.21)	16.38 (6.00)	-1.340	0.190

	Home	Away		
	M (sd)	M (sd)	t	p value
Environmental factors	10.15 (3.31)	9.26 (3.12)	1.440	0.159
control				
Collective efficacy				
Ability*	29.15 (5.88)	31.03 (6.54)	-2.200	0.035*
Effort	32.74 (6.86)	31.71 (5.99)	0.957	0.345
Persistence	29.24 (7.21)	29.03 (7.40)	0.304	0.763
Preparation	31.59 (4.91)	32.32 (6.16)	-1.065	0.295
Unity	30.44 (6.13)	31.12 (6.54)	-1.817	0.078
Total CE	153.15(27.58)	155.21(31.12)	-0.758	0.454

***p<.001, **p<.01, *p<.05

Due to the existence of significant home/away rating differences for men and women, the scores could not be collapsed across location. Therefore, home scores and away scores were compared separately by sex. There were no significant home rating differences between women and men for perceived team: team control, external control, environmental factors control, ability, and persistence. There were significant home rating differences between women and men for perceived team: effort, preparation, unity, and total collective efficacy (See Table 3.6). For all of the above findings, women had significantly higher ratings than men, which was the opposite of the original prediction.

Table 3.6

Home and Away Perceived Team Control and Collective Efficacy Ratings Compared by Sex

	Women	Men		
	M (sd)	M (sd)	t	p value
Home				
Control				
Team control	32.09 (4.98)	31.12 (5.89)	0.655	0.259
External control	15.15 (6.21)	17.21 (8.02)	-1.295	0.102
Enviro. factors control	10.15 (3.31)	8.91 (4.38)	1.428	0.163
Collective efficacy				
Ability	29.15 (5.89)	27.29 (9.05)	1.054	0.150
Effort**	32.74 (6.86)	27.76 (6.17)	3.013	0.0025**
Persistence*	29.24 (7.21)	26.71 (5.80)	1.771	0.043*
Preparation**	31.59 (4.91)	27.71 (6.29)	2.889	0.0035**
Unity**	30.44 (6.13)	26.09 (6.84)	2.686	0.0055**
Total CE**	153.15(27.58)	135.56(29.96)	2.504	0.0085**
Away				
Control				
Team control	31.65 (5.76)	30.82 (5.61)	0.523	0.303
External control	16.38 (6.00)	18.35 (6.04)	-1.159	0.128
Enviro. factors control	9.26 (3.12)	9.15 (3.27)	0.146	0.885

	Women	Men		
	M (sd)	M (sd)	t	p value
Collective efficacy				
Ability	31.03 (6.54)	31.85 (5.61)	-0.516	0.305
Effort	31.71 (5.99)	30.65 (5.84)	0.674	0.253
Persistence	29.03 (7.40)	30.00 (5.23)	-0.596	0.278
Preparation	32.32 (6.16)	30.32 (6.39)	1.250	0.110
Unity	31.12 (6.54)	29.21 (5.95)	1.139	0.132
Total CE	155.21(31.12)	152.03(25.57)	0.418	0.340

***p<.001, **p<.01, *p<.05

There were no significant away rating differences between men and women for any of the control or collective efficacy subscales: team control, external control, environmental factors control, ability, effort, persistence, preparation, unity, and total team collective efficacy (See Table 3.6).

Originally, sport type was not a primary concern because of the choice of field sports- field hockey, lacrosse, and soccer- that are similar on a number of dimensions. Field hockey, soccer, and lacrosse are all team sports, played on a field, have 11 players on the field, and have similar field motion and overall objectives. However, because it was not possible to collect data on male and female teams across these three sports, an analysis was done to determine any differences between these three sport teams on the outcome measures of this study, in order to determine any confounds with gender. One-

way ANOVAs were conducted for sport type and each subscale. There were significant sport differences in perceived team: external control, environmental factors control, dejection, excitement, anger, happiness, ability, effort, preparation, unity, and total collective efficacy ratings. Post-hoc analyses were conducted in order to determine where the significant sport rating differences occurred (See Table 3.7). The analyses revealed significant perceived team external control rating differences between field hockey and lacrosse; significant perceived team environmental factors control rating differences between field hockey and soccer and soccer and lacrosse; significant perceived team dejection rating differences between field hockey and soccer and field hockey and lacrosse; significant perceived team excitement rating differences between field hockey and soccer and soccer and lacrosse; significant perceived team anger rating differences between field hockey and soccer and field hockey and lacrosse; significant perceived team happiness rating differences between field hockey and soccer and soccer and lacrosse; significant perceived team ability rating differences between soccer and lacrosse; significant perceived team effort rating differences between field hockey and soccer and soccer and lacrosse; significant perceived team preparation rating differences between field hockey and soccer and soccer and lacrosse; significant perceived team unity rating differences between field hockey and soccer; and significant perceived team total collective efficacy rating differences between field hockey and soccer (See Table 3.7).

The results of the ANOVAs are important, but when analyzing the sport groups it became clear that sport and gender were confounded with one another on a number of measures, due to the fact that there were only female field hockey players, and only male

Table 3.7

One-Way ANOVA Analyses for Sport Effect on Subscale Ratings

	FH	Soccer	Lacrosse		
	M (sd)	M (sd)	M (sd)	F	p value
<hr/>					
Subscales					
Team control	31.87(5.35)	30.33(5.67)	31.46(5.31)	0.720	0.489
External control	15.76(6.09)	16.00(6.09)	18.68(6.98)	3.422	0.035*
Enviro. factors control	9.71(3.22)	7.25(3.27)	10.20(3.88)	6.209	0.003**
Anxiety	6.88(3.43)	5.96(3.61)	5.91(3.56)	1.370	0.257
Dejection	0.56(1.30)	2.17(2.97)	1.63(2.94)	5.536	0.005**
Excitement	11.31(3.50)	6.92(3.57)	10.09(3.39)	14.226	<0.001***
Anger	0.71(1.64)	3.71(3.70)	2.93(3.24)	15.711	<0.001***
Happiness	8.07(4.07)	4.88(3.48)	7.21(3.17)	6.788	0.002**
Ability	30.09(6.24)	26.21(9.18)	30.73(6.38)	3.870	0.023*
Effort	32.22(6.42)	26.38(5.93)	30.54(5.70)	8.224	<0.001***
Persistence	29.13(7.25)	27.46(5.65)	28.32(5.65)	0.658	0.520
Preparation	31.96(5.54)	25.50(6.43)	30.54(5.88)	10.955	<0.001***
Unity	30.78(6.30)	25.83(6.18)	27.86(7.13)	6.006	0.003**
Total CE	154.18(29.20)	131.38(28.37)	148(27.67)	5.680	0.004**

***p<0.001, **p<0.01, *p<0.05

soccer and lacrosse players, making the interpretation of gender findings limited. It is not clear whether the aforementioned significant sport differences in ratings are due to type of sport or gender. In addition, there was only one team for each sport, so the results of the current study could be unique to these specific teams, and not necessarily to the sports in general.

Another variable that was not originally taken into consideration, but was later identified as a potentially important variable is team winning percentage up until the game day data collections for each team. It was speculated that a team's level of success prior to the game at which data was collected, might have affected individuals' perceptions of their team's control of game outcome, emotion immediately prior to the game, and collective efficacy with respect to athletic performance.

An independent samples t-test was conducted to determine if a difference in win percentage existed between men and women. There was no significant gender win percentage difference ($t(99) = -1.29, p = 0.201$). Correlations between team winning percentage and the control, emotion, and collective efficacy variables were then conducted to see if there were any strong relationships that warranted further investigation. Separate matrices were created for women and men. For women, team winning percentage was significantly associated with: environmental factors control, dejection, excitement, happiness, effort, persistence, preparation, and total CEQ ratings (See Matrix in Appendix E). In other words, for women the higher the team winning percentage the lower the perceived team dejection ratings, the higher the perceived team environmental factors control ratings, the higher the perceived team excitement ratings, the higher the perceived team happiness ratings, the higher the perceived team effort

ratings, the higher the perceived team persistence ratings, the higher the perceived team preparation ratings, and the higher the perceived team total collective efficacy ratings. For men, team winning percentage was significantly associated with: team control, external control, environmental factors control, and anger (See Matrix in Appendix E). In other words, for men the higher the team winning percentage the lower the perceived team control ratings, the higher the perceived team external control ratings, the higher the perceived team environmental factors control ratings, and the lower the perceived team anger ratings.

Linear regressions were conducted to further examine these significant correlations, and see if differences in team win percentage prior to data collection was significantly predictive of differences in the aforementioned significantly correlated subscales. Team win percentage was the explanatory or predictor variable, while the aforementioned significantly correlated subscales were the dependent variables or outcome variables in the linear regressions. A separate regression was conducted for each subscale; with team win percentage as the predictor variable in all the analyses. Ideally, the regression analyses would have been conducted separately for each sex to further elucidate the correlation findings above. However, due to the limited sample size when the data was separated by sex, and the fact that gender was confounded with sport, the regressions were conducted with men and women together. Significant models emerged for perceived team: external control, environmental factors control, and anxiety. Based on the models, team win percentage accounted for 3% of the variance in perceived team external control ratings, 4.4% of the variance in perceived team environmental factors control ratings, and 3.8% of the variance in perceived team anxiety ratings. In addition,

the significant regression models indicated that as win percentage increased perceived team external control ratings increased, perceived team environmental factors control ratings increased, and perceived team anxiety ratings decreased (See Table 3.8).

Table 3.8

Linear Regression Analyses Results for Team Win Percentage and Subscales

	Win %				
	B	t	p value	F	R squared
Outcome Variables					
Team control	-0.045	-0.544	0.587	0.296	0.002
External control*	0.174	2.129	0.035*	4.533	0.030
Environmental factors control**	0.210	2.596	0.010**	6.740	0.044
Anxiety*	-0.195	-2.406	0.017*	5.788	0.038
Dejection	-0.037	-0.442	0.659	0.196	0.001
Excitement	-0.075	-0.914	0.362	0.836	0.006
Anger	-0.126	-1.530	0.128	2.340	0.016
Happiness	0.082	0.995	0.322	0.989	0.007
Ability	-0.015	-0.184	0.854	0.034	0.000
Effort	0.096	1.168	0.245	1.365	0.009
Persistence	0.095	1.151	0.251	1.326	0.009
Preparation	0.090	1.096	0.275	1.200	0.008
Unity	0.053	0.645	0.520	0.416	0.003
Total CE	0.069	0.841	0.402	0.707	0.005

***p<0.001, **p<0.01, *p<0.05

CHAPTER 4

DISCUSSION

The current hypotheses were based on prior data showing the difference in perceived control, emotion, and collective efficacy between men and women, as well as the existence of home field advantage. With the demonstrated existence of home field advantage, it was thought that various psychological mechanisms could be at work in helping to create a performance and/or outcome difference for teams between home and away games. In addition, it was thought that these psychological mechanisms could work differently for men than for women. Therefore, the current study aimed to determine whether or not there were gender and/or game location differences in perceived team control, emotion, and collective efficacy, with the hope of elucidating the psychology behind home field advantage.

Hypothesis 1a of the current study predicted that individuals would report significantly less perceived team negative emotion (anxiety, dejection, and anger) and significantly more perceived team positive emotion (happiness and excitement) prior to home versus away games. These predictions were made because of the demonstrated association of positive emotions with better performance (Carver, 2004; Carver & Scheier, 1990; Gardner & Moore, 2006; Vast, Young, & Thomas, 2010), and negative emotions with poorer performance (Hansen & Hansen, 1994; Jones, 2003; Ohman, Flykt, & Esteves, 2001; Vast, Young, & Thomas, 2010). Therefore, in relation to the home field advantage, if positive emotions are related to better performance, and negative emotions serve as performance distracters, then it would be expected that teams would report more perceived team positive emotion prior to a home game than an away game. The results of

the current study did not support this hypothesis, with no significant differences found between home and away perceived team anxiety, dejection, excitement, and happiness ratings. Perceived team anger ratings were significantly different home and away, but they were greater prior to home games, which was opposite of the original prediction. These unexpected results could be due to the fact that the sports (field hockey, lacrosse, and soccer) and Division 1 schools (Mount St. Mary's, Bucknell, American, and Georgetown) included in this study do not have many of the situational factors that would provoke more intense emotional states, such as high media exposure and large crowds (Agnew, & Carron, 1994; Courneya & Carron, 1992; Nevill, Newell, & Gale, 1996; Pollard, 1986; Pollard, 2002; Schwartz & Barskey, 1977). Perhaps if this study were conducted with sports like football and basketball at large Division 1 schools, the emotional states of players and perceived state of the teams would be more pronounced; and the predicted results would become apparent due to the more pressurized environments, and the increased importance of the comfort and familiarity of home location as a result of this increased pressure.

Hypothesis 1b predicted more perceived team control of game outcome prior to home versus away games. Winning teams have been shown to demonstrate an increased amount of perceived control, and since winning teams are more often the home team based on home field advantage, it would follow that teams at home would show a higher level of perceived control of outcome than when they are away (Allen, Jones, & Sheffield, 2009a). The current results indicated no significant difference between home and away perceived team control, external control, and environmental factors ratings, so there was not a game location difference as predicted. These results may be due to the

nature of field hockey, lacrosse, and soccer. These sports, unlike more individualized sports, are very much affected by people other than those on the field, such as referees and coaches (Courneya & Carron, 1992; Nevill, Balmer, & Williams, 2002). Games in these sports can be won or lost based on calls made by referees and decisions made by coaches. Therefore, perhaps the teams included in this study reported the same control ratings both home and away because game location was not what was driving their perception of their level of control. In addition, similarly to above, the lack of a more pressurized setting home or away may have resulted in a lack of location difference in perceived control, because without the elements that add extra pressure, perhaps teams felt equally in control in both locations.

Hypothesis 1c predicted more perceived team collective efficacy prior to home versus away games because of its link to performance for sports teams (Myers, Feltz, & Short, 2004; Myers, Payment, & Feltz, 2004; Dithurbide, Sullivan, & Chow, 2009; Allen, Jones, & Sheffield, 2009). This prediction was also made because of the documented existence of home field advantage, which would lead to the belief that teams should report more perceived collective efficacy prior to home versus away games (Schwartz & Barskey, 1977; Courneya & Carron, 1992; Jamieson, 2010; Pace & Carron, 1992; Pollard, 1986; Snyder & Purdy, 1985). Overall, the aforementioned researchers found that team performance was positively correlated with pre-competition collective efficacy. Therefore, it would follow that with the existence of home field advantage individuals would report more perceived team collective efficacy prior to home versus away games. The current study found no significant difference between home and away perceived team effort ratings. However, there were significant differences between home and away

perceived team ability, persistence, preparation, unity, and total collective efficacy ratings. Specifically, individuals reported more perceived team ability, persistence, preparation, unity, and total collective efficacy prior to away games. So there was a significant game location difference as predicted for these variables, but the direction of the difference was opposite of the original prediction. Perhaps these unexpected results are based on the athletes reporting what they would like or hope their team feels as opposed to their actual perception of their team's efficacy. In other words, these results could be indicative of the importance and necessity of feeling as comfortable and confident as possible prior to competition, regardless of how efficacious or confident the team actually is (Allen, Jones, & Sheffield, 2009a; Myers, Feltz, & Short, 2004; Myers, Payment, & Feltz, 2004). Due to the timing of the data collections fairly close to game times, it may have been too difficult and psychologically jarring for athletes to entertain the idea of their team not being prepared and able. If this took place, then it would make sense that this effect would be more pronounced prior to away versus home games, since athletes would need more self-assurance the less familiar and comfortable the environment.

Another possible explanation for the existence of more collective efficacy prior to away versus home games in the current study has to do with the opponent being played, and the athletes' beliefs and perceptions about that opponent. Perhaps in the current study the opponents being played at the away locations were viewed as beatable and not skilled, which would then likely affect the athletes' perceptions about their ability or efficacy. If the opponents being played at the away location were viewed as more easily beaten than those played at the home locations, then it would make sense that the athletes

would report their team as feeling more efficacious at the away location. Therefore, it is possible that the athletes' based their efficacy ratings on the opponent being played, rather than on their location.

Hypothesis 2 predicted that the difference between home and away control, emotion, and collective efficacy questionnaire ratings would be smaller for male teams than for female teams. Hypothesis 3 predicted that male teams, both home and away, would have higher collective efficacy and game outcome control ratings than female teams. Both of these hypotheses were based on prior findings that found men make significantly more internal attributions in regards to game performance than women (Greenlees et al., 2007). So men are more likely than women to attribute athletic control and outcome responsibility to themselves or their team rather than to external forces. This leads to the belief that men would demonstrate more consistency in their responses because their ratings would be more internally based and less affected by external factors, resulting in a certain level of stability from situation to situation. Therefore, in relation to hypothesis 2, it would be expected that men would have more consistent questionnaire ratings than women because of their higher tendency to attribute results to internal causes regardless of situation. Finally, in relation to hypothesis 3, for both home and away game location, male teams would be expected to report higher perceived team control and collective efficacy ratings than female teams for the same internal attribution reasons.

For hypothesis 2, the current study found no significant perceived team control, external control, environmental factors control, anxiety, dejection, excitement, happiness, anger, or ability home/away rating difference between men and women. There were significant perceived team persistence, preparation, unity, and total collective efficacy

home/away rating differences between men and women, with women reporting more similar home and away ratings than men. In other words, women had smaller mean home/away differences for these variables than men, which was the opposite of the original prediction. There is very limited research on psychological differences in athletics in terms of gender, so it is unclear why these results occurred. However, returning to the earlier discussion of the potential need to convince oneself of team confidence and ability prior to competition, perhaps these results indicate that women have more of a psychological need for this self-assurance, and this need is present regardless of location. This would result in their collective efficacy home/away rating differences being smaller than men's, who may not have as much of a psychological need for self-assurance, which would make their answers more variable. This would make sense with prior research that has consistently found that women and men have negative beliefs and confidence about their ability and performance when involved in activities and tasks that are not stereotypically gender-consistent (Giacobbi, 1998; Stone, Chalabaev, & Harrison, 2012). Although views are changing, sport participation, especially serious participation, is still considered primarily a male activity. Therefore, serious female athletes, such as the Division 1 athletes in this study, have to psychologically overcome these social stereotypes to succeed, which can be a big challenge. The results of the current study seem consistent with this psychological struggle, in that women would have more of a general need than men to feel confident and able prior to competition in order to combat the psychological effects of the stereotypes, which is what the results indicate. In addition, it may be that the Greenlees et al. (2007) finding that men make more internal attributions regarding athletic

performance than women, on which the original hypothesis was based, is only applicable when measuring athletes' feelings and views post and not pre-competition, when they are evaluating a past performance and not anticipating an upcoming one.

For hypothesis 3, the current study found no significant home rating differences between men and women for perceived team control, external control, environmental factors control, ability, and persistence. There were significant home rating differences between men and women for perceived team effort, persistence, preparation, unity, and total collective efficacy, with women having significantly higher home ratings than men, which again was the opposite of what was originally predicted. There were no significant away control or collective efficacy rating differences between men and women.

Prior to the main analyses and findings of hypothesis 3, paired-sample-t-tests were conducted in order to determine whether or not the control and collective efficacy ratings for men and women could be collapsed by location. The ratings could not be collapsed because of the existence of home and away differences for both men and women. Women only had one significant location difference for perceived team ability, with away ability being greater than home. However, men had several significant location differences. For men, perceived team ability, effort, persistence, preparation, unity, and total collective efficacy were all significantly greater away than home. These initial analyses can help explain the aforementioned main findings found for hypothesis 3, that there were significant home differences between men and women for perceived team effort, persistence, preparation, unity, and total collective efficacy, but no significant away differences in these same subscales. Men's perceived team collective efficacy ratings significantly increased from home to away, while women's perceived team collective

efficacy ratings did not, resulting in significant home rating differences between men and women, but not away rating differences. Therefore, the question that needs to be answered is why did the men's collective efficacy ratings increase from home to away, while the women's ratings remained the same? The consistent collective efficacy ratings for women and the variable ratings for men may go back to the aforementioned proposal that women may have a greater general psychological need for self-assurance prior to competition, regardless of location, than men. If this is true then it would be expected that women would exhibit more consistent ratings in order to maintain the self-assurance process, regardless of location, while men exhibit self-assurance based on the situation, such as prior to an away competition, and not a general need. This explanation may be supported by the results of the current study.

Finally, analyses were conducted due to the speculation that sport type might have affected questionnaire ratings, and with the hope of further elucidating the aforementioned gender findings. There were significant sport differences for the external control, environmental factors control, dejection, excitement, anger, happiness, ability, effort, preparation, and unity subscales, as well as total collective efficacy. Based on the analyses, soccer accounts for the most sport differences in ratings. Soccer was significantly different from at least one other sport (field hockey or lacrosse) on all but the external control subscale; and soccer was significantly different from both field hockey and lacrosse on five of the subscales: environmental factors control, excitement, happiness, effort, and preparation. In addition, soccer was significantly different from lacrosse on six subscales: environmental factors control, excitement, happiness, ability, effort, and preparation, which are important findings because these differences are

between two male teams. This is an indication that perhaps there is a sports effect.

Contrary to soccer, field hockey and lacrosse were only significantly different from one another on three subscales: external control, dejection, and anger, which means the rest of the differences found could be due to differences between soccer and field hockey and soccer and lacrosse.

Based on these findings, it seems as though soccer may be responsible for the observed gender differences in collective efficacy for hypothesis 3. It was found that women had significantly higher home effort, persistence, preparation, unity, and total collective efficacy than men. Based on the sport findings, the soccer ratings were significantly lower than both field hockey and lacrosse on all of the collective efficacy subscales as well as total collective efficacy, which could mean that the soccer ratings pulled down the overall men's ratings, resulting in the significantly higher collective efficacy ratings for women.

Due to the fact that there were only female field hockey players and only male soccer and lacrosse players, gender and sport are confounded, so the results must be interpreted and considered with caution. In addition, there is only one team for each sport in the study, so the observed differences could be unique to the specific teams included in the study. Repetition with more teams per sport, and teams across sports, is necessary to understand the generalizability of the findings.

Although interesting, the results of the current study, for the most part, did not support the original predictions. There are a few primary speculations as to why this might be. First, maybe environmental/physical variables, as identified in prior research, are the primary vehicle through which home field advantage, game outcome, and

psychological state are influenced (Schwartz & Barskey, 1977; Courneya & Carron, 1992; Nevill, Newell, & Gale, 1996; Agnew & Carron, 1994; Pollard, 2002; Pollard, 1986; Pace & Carron, 1992; Snyder & Purdy, 1985; Jamieson, 2010). The very limited number of location differences in perceived control, emotion, and collective efficacy suggest that perhaps location itself is not the driving factor determining the mental state of athletes prior to competition. In other words, perhaps it is not “being away” alone that drives an athlete’s or team’s psychological state, but rather the *specific* environmental or physical factors that accompany a certain field or school that result in psychological changes. For example, a team’s psychological state could be completely different at an away school known for heckling fans and a bad field, than at an away school with small crowds and a high quality surface. So the fact that they were away may not be as important as what goes along with each individual away location.

Second, perhaps emotional and psychological states changed more than expected from the time of measurement to immediately prior to and/or during the games, so the time period in which this study measured them did not accurately capture the psychology of the players. The current study collected data an hour and a half prior to game time, which is very logistically difficult, considering athletes usually begin warming up about an hour prior to the start of the game. Therefore, due to time constraints and coach reluctance due to risk of disturbing team focus and routine, it was and will be difficult, if not almost impossible, to collect data any closer to game time. Nevertheless, the speculated ideal time to collect data and most accurately capture the psychological state of players and the potential effects of game location, would be *immediately* prior to the start of the game, when the players have warmed up and experienced the environment to

a fuller extent. Collecting data at this time would not only more accurately capture the emotions of athletes regarding the game, but it would also better capture the psychological effects of any environmental factors on athletes in addition to any location effects (Agnew & Carron, 1994; Courneya & Carron, 1992; Nevill, Newell, & Gale, 1996; Pollard, 1986; Pollard, 2002; Schwartz & Barskey, 1977). Taking it one step further, data could be collected at both home and away games with varying crowd sizes, field conditions, etc at each location, to try and distinguish between psychological effects due to location and those due to environmental factors.

As far as why some results were significant but opposite of what was predicted, perhaps there are different dynamics involved in sport that make the expected sex and location differences irrelevant. It seems as though for many people athletics trigger more intense and varied emotions and behaviors that are different from their day-to-day psychological experience and behavior. This may explain why expected outcomes were not found here, because athletics presents a unique setting that acts differently on an individual's emotions and behaviors, which much of the prior research does not necessarily take into account (Courneya & Carron, 1992). Unique in the sense that athletic settings are pressurized more so than many other situations with scholarships, rankings, playing time, championships, recruiting, etc. all on the line each time an athlete steps on the field. Also, athletics provides an emotional and physical outlet that enables and provokes individuals to feel and act differently than they would in many other settings.

Coupled with the unique set of circumstances that athletics provides, is the fact that a vast majority of the prior studies looking at control, emotion, and collective

efficacy studied them post-competition, unlike the current study. Only four studies emerged during the research process for the current study, in which the researchers used pre-competition measurement methods (Duffy & Hinwood, 1997; Allen, Jones, & Sheffield, 2009a; Myers, Feltz, & Short, 2004; Myers, Payment, & Feltz, 2004). Therefore, the findings of most of the existing studies related to the subject matter of the current study may be inapplicable in terms of predicting outcomes of pre-competition measurements, due to the fact that the psychological dynamics of athletes could be very different pre- versus post-competition. This is another potential reason why the predicted sex and location differences were not found.

Another possibility for the counterintuitive and unexpected results, is that perhaps prior to competition athletes need to convince themselves of their team's ability, stable and beneficial emotion, etc. in order to avoid feeling afraid or unprepared immediately prior to the game. If this is the case, then this need may be more pronounced prior to away games, which would explain the lack of or significant but opposite aforementioned location results.

Arguably the most interesting findings of the study are the associations between team win percentage and control, emotion, and collective efficacy. Prior to data collection, team win percentage was not one of the original variables of focus, but was later speculated to have potentially affected the athletes' perceived team control, emotion, and collective efficacy ratings. For women, team win percentage was correlated with perceived team environmental factors control, dejection, excitement, happiness, effort, persistence, preparation, and total collective efficacy. For men, the results were virtually

the opposite; with team win percentage correlated with perceived team control, external control, environmental factors control, and anger.

Not only do these results indicate that the prior success, or lack thereof, of a team can affect the current psychology of a team, but they suggest that this effect may have a different psychological impact for men and women. Prior success seems to have an effect on female athlete's perceived team emotion and collective efficacy, while affecting male athletes' perceived team control. The gender piece of these results is particularly important because it illuminates some psychological differences between men and women that could be very valuable in terms of coaching and psychological preparation and maintenance. If a female team is having limited success, then the above results tell us actions must be taken to build and maintain their positive emotion and belief in their team's efficacy, both of which appear to suffer with lack of prior success. If a male team is having limited success, then the above results tell us actions must be taken to build and maintain their belief in their team's level of control. However, due to the existence of a sport and gender confound it cannot be definitively said whether or not these win percentage results are due to membership in a specific sport or being a man or women. Further investigation with additional teams is needed.

In order to attempt to elucidate these correlations further, team win percentage was also entered into linear regressions as a predictive variable for the subscale ratings. Ideally, the regression analyses would have been conducted separately for each sex to further elucidate the correlation findings above. However, due to the limited sample size when the data was separated by sex, and the fact that gender was ultimately confounded with sport, the regressions were conducted with men and women together. Overall, team

win percentage was found to be predictive of perceived team external control, environmental factors control, and anxiety ratings. Although these analyses did not take gender or sport into account, they are still valuable in that they indicate that regardless of gender or sport, team win percentage has a relationship with perceived team external control, environmental factors control, and anxiety ratings.

Overall, location, one of the independent variables in this study, was found to affect perceived team emotion and collective efficacy ratings, with athletes reporting more perceived team anxiety, anger, and excitement prior to home games; and more perceived team ability, persistence, preparation, unity, and total collective efficacy prior to away games. Gender, the other independent variable of interest in this study, was found to affect perceived team collective efficacy ratings, with female athletes having more similar home/away ratings than men for perceived team effort, persistence, preparation, unity, and total collective efficacy. In addition, women had higher home perceived team effort, preparation, unity, and total collective efficacy than men. Finally, team win percentage prior to data collection became a third independent variable of interest, and was found to affect perceived team control, emotion, and collective efficacy ratings, but it affected them differently depending on gender. For women, win percentage was associated with emotion (dejection, excitement, and happiness) and collective efficacy (effort, persistence, preparation, and total collective efficacy). For men, win percentage was associated with control (team control, external control, and environmental factors control) and anger within the emotion measurements. However, again, due to the existence of a sport and gender confound it cannot be definitively said whether or not these gender results are due to membership in a specific sport or being a man or women.

Repetition with additional male and female teams spread evenly among sport type is needed.

Ultimately, collective efficacy was the most variable of the three main dependent variables, with changes occurring in response to changes in all three independent variables: location, gender, and team win percentage. Emotion was the second most variable, with changes occurring in response to changes in location and win percentage. Control was the least variable, with changes only occurring in response to changes in win percentage.

The current study has several strengths. First, it is the first of its kind, measuring three psychological mechanisms, measuring them at a team level, measuring them immediately prior to athletic competition, and taking game location into account, all within the same study. The current study also uses multiple sports, which adds variety and makes the results applicable to a wider population. Third, both gender and game location are included in the analyses, adding more depth and value to the results. Finally, multiple psychological dimensions are assessed enabling a fuller picture to be painted of what is going on in terms of gender and game location.

Although the results are interesting, the current study has some limitations. There are a limited number of teams and athletes who participated, so it would be helpful to repeat the study with a larger sample size. As with most studies, there is also limited generalizability of the results due to the relatively limited sample size, the availability of only one team per sport and the potential confound of sport and gender, and the lack of diversity within the sample. In the current study, almost all participants were Caucasian and all the teams who participated were from the East Coast in the Northeast of the

United States. In addition, the sports used in this study limit the generalizability of the findings in that they are only team field sports, with relatively small crowd size, and little, if any, media exposure. They are also all sports which are played outdoors, and in which fans are relatively far away from the athletes during the game, perhaps limiting the amount of pressure or influence felt by the players before and during performance. It would be interesting to conduct the study with sport like basketball or ice hockey, which are indoors and in which the fans are very close to the athletes. This alternate environment may result in an increased location effect on the mechanisms of this study, because of the increased pressure presented by the indoor setting and the closer proximity of the audience. In this case, an athlete's psychological state may very well be more affected by location because of what comes with it. Alternative sports would need to be looked at in order to get a fuller picture of the psychological dynamics at work. Time of season is also a potential limitation, in that all of the data collection games were at different points in the season for each team. Ideally time of season would be kept as consistent as possible in order to avoid any confounding effects. However, this could not be done because team access was based solely on coach permission, which was very difficult to gain. Therefore, data collection had to be done when coaches gave permission, rather than being dictated by the needs of the study. Finally, for all but one team data was collected prior to only one home and one away game. Ideally, data would be collected prior to multiple games at each location.

The results of the current study provide a solid foundation from which future research can build. Future studies should repeat these study methods with a larger sample size and in other areas of the country, in order to identify any school location differences,

and make the results more applicable to a wider population. In addition, these methods should be conducted using other sports as well. Other psychological mechanisms can and should be studied using the same methodology in order to identify any gender and/or game location differences. Finally, other variables such as: race/ethnicity, opponent's skill level, age, year in school, playing time, etc. should be gathered and analyzed in order to see if they are playing a part in any psychological differences observed.

Overall, the current study helped lay the groundwork for future research in the area of home field advantage, and sport psychology in general. The results are important and informative regardless of exactly what they showed because of the novelty of the study and lack of prior research.

APPENDIX A
BACKGROUND

Sex:

Age:

Year in School:

Sport:

Position:

Starter or Non-starter:

Average number of minutes played per game:

Location of today's game:

Is this home or away for your team:

Your College or University:

APPENDIX B

MODIFIED CAUSAL DIMENSION SCALE FOR TEAMS (CDS-T)

Please answer all questions as honestly as possible. All answers will be treated in the strictest of confidence.
Please circle one number for each of the following scales.

Is the outcome of the upcoming game something:

1. Your team can do something about	9	8	7	6	5	4	3	2	1	Your team can do nothing about
2. Your team can control	9	8	7	6	5	4	3	2	1	Your team cannot control
3. Controllable by people outside your team	9	8	7	6	5	4	3	2	1	Over which no-one has control
4. Under the power of people outside the team	9	8	7	6	5	4	3	2	1	Not under power of people outside the team
5. Over which your team has power	9	8	7	6	5	4	3	2	1	Over which your team has no power
6. People outside the team can regulate regulate	9	8	7	6	5	4	3	2	1	People outside the team can not
7. Controllable by your team	9	8	7	6	5	4	3	2	1	Not controllable by your team
8. Determined by people outside the team	9	8	7	6	5	4	3	2	1	Not determined by people outside the team
9. Influenced by the familiarity of the field	9	8	7	6	5	4	3	2	1	Not influenced by the familiarity of the field

10. Influenced by the crowd	9	8	7	6	5	4	3	2	1	Not influenced by the crowd
11. Influenced by traveling	9	8	7	6	5	4	3	2	1	Not influenced by traveling

APPENDIX C

MODIFIED SPORT EMOTION QUESTIONNAIRE (SEQ)

Below you will find a list of words that describe a range of feelings that sport performers may experience. Please read each one carefully and indicate on the scale next to each item how you believe your *team is feeling right now, at this moment, in relation to the upcoming competition*. There are no right or wrong answers. Do not spend too much time on any one item, but choose the answer which best describes how your team feels right now in relation to the upcoming competition.

	Not at all	A little	Moderately	Quite a bit	Extremely
Uneasy	0	1	2	3	4
Upset	0	1	2	3	4
Exhilarated	0	1	2	3	4
Irritated	0	1	2	3	4
Pleased	0	1	2	3	4
Tense	0	1	2	3	4
Sad	0	1	2	3	4
Excited	0	1	2	3	4
Furious	0	1	2	3	4
Joyful	0	1	2	3	4
Nervous	0	1	2	3	4
Unhappy	0	1	2	3	4
Enthusiastic	0	1	2	3	4
Annoyed	0	1	2	3	4
Cheerful	0	1	2	3	4
Apprehensive	0	1	2	3	4
Disappointed	0	1	2	3	4

Energetic	0	1	2	3	4
Angry	0	1	2	3	4
Happy	0	1	2	3	4
Anxious	0	1	2	3	4
Dejected	0	1	2	3	4

APPENDIX D

COLLECTIVE EFFICACY QUESTIONNAIRE (CEQ)

Rate your team's confidence, in terms of the upcoming game or competition, in their collective ability to...

	Not at All Confident						Extremely Confident				
	0	1	2	3	4	5	6	7	8	9	10
1. Outplay the opposing team	0	1	2	3	4	5	6	7	8	9	10
2. Resolve conflicts	0	1	2	3	4	5	6	7	8	9	10
3. Perform under pressure	0	1	2	3	4	5	6	7	8	9	10
4. Be ready	0	1	2	3	4	5	6	7	8	9	10
5. Show more ability than the other team	0	1	2	3	4	5	6	7	8	9	10
6. Be united	0	1	2	3	4	5	6	7	8	9	10
7. Persist when obstacles are present	0	1	2	3	4	5	6	7	8	9	10
8. Demonstrate a strong work ethic	0	1	2	3	4	5	6	7	8	9	10
9. Stay in the game when it seems like your team isn't getting any breaks	0	1	2	3	4	5	6	7	8	9	10
10. Play to its capabilities	0	1	2	3	4	5	6	7	8	9	10
11. Play well without your best player	0	1	2	3	4	5	6	7	8	9	10
12. Mentally prepare for this competition	0	1	2	3	4	5	6	7	8	9	10
13. Keep a positive attitude	0	1	2	3	4	5	6	7	8	9	10
14. Play more skillfully than the opponent	0	1	2	3	4	5	6	7	8	9	10
15. Perform better than the opposing team(s)	0	1	2	3	4	5	6	7	8	9	10
16. Show enthusiasm	0	1	2	3	4	5	6	7	8	9	10
17. Overcome distractions	0	1	2	3	4	5	6	7	8	9	10
18. Physically prepare for this competition	0	1	2	3	4	5	6	7	8	9	10

19. Devise a successful strategy	0	1	2	3	4	5	6	7	8	9	10
20. Maintain effective communication	0	1	2	3	4	5	6	7	8	9	10

APPENDIX E

WIN PERCENTAGE CORRELATION MATRIX

	Win %	
	Pearson correlation (r)	p value
Women		
Control		
Team control	0.212	0.078
External control	-0.210	0.081
Environmental factors control*	0.283	0.018*
Emotion		
Anxious	-0.217	0.072
Dejected**	-0.353	0.003**
Excited**	0.346	0.003**
Angry	-0.111	0.362
Happy***	0.433	<.001***
Collective efficacy		
Ability	0.158	0.192
Effort**	0.310	0.009**
Persistence*	0.304	0.011*
Preparation*	0.266	0.026*
Unity	0.204	0.091
Total CE*	0.271	0.023*

	Win %	
	Pearson correlation (r)	p value
Men		
Control		
Team control*	-0.195	0.039*
External control**	0.250	0.008**
Environmental factors control*	0.191	0.043*
Emotion		
Anxious	-0.142	0.132
Dejected	-0.098	0.303
Excited	-0.111	0.242
Angry*	-0.226	0.016*
Happy	0.067	0.484
Collective efficacy		
Ability	-0.111	0.241
Effort	0.033	0.732
Persistence	0.024	0.797
Preparation	0.042	0.657
Unity	0.070	0.463
Total CE	0.009	0.924

***p<.001, **p<.01, *p<.05

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