The Multilevel Effects of Motivational Climate on the Collective Efficacy in a Cheerleading Team

by

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ABSTRACT
This study examines the relationships between individual and group motivational climates and collective efficacy in cheerleaders. The authors hypothesize that perceived motivational climate at the individual and group levels may explain the perceived collective efficacy of athletes, for which perceived mastery climate is positively related to collective efficacy and perceived performance climate is negatively related to collective efficacy. A sample of 442 cheerleaders (175 male and 267 female) nested to 27 teams completed the PMCSQ and collective efficacy questionnaire approximately one hour prior to a competition. Hierarchical linear modeling (HLM) was conducted to test the hypotheses. The analyses showed that individual level and group level perceptions of a mastery climate positively predicted perceptions of collective efficacy, whereas individual and group level perceptions of performance climate were non-significant. These findings indicate that creating a supportive and cooperative climate for the athletes may help to improve team confidence.

Key words: Achievement Goal Theory, Autonomy Support, Cheerleading, Collective Efficacy, Motivational Climate

INTRODUCTION
In the sports world, it is crucial for coaches to motivate and inspire confidence in the players on their team. For example, Duke Basketball and United States National Team Head Coach Mike Krzyzewski (Coach K) mentioned, "I’m always aware of how I enter a room. Before a game, I might walk into the locker room quickly, with a spring in my step and a smile on my face. And as I come in, I might say something like: ‘Hey, we’re going to be really good tonight. In fact, we might be great tonight’” [1, p. 157]. Coach K is suggesting that the motivation and confidence of a team can be affected by two vital group variables: motivational climate and collective efficacy. Literature on sport psychology has shown that motivational climate and collective efficacy are two group variables related to team sports
Motivational climate is viewed as a group level construct that represents the shared social environment of a team [3-5]. Motivational climate is perceived by each athlete on a team at the individual level and as an aggregate of the perceptions of each athlete on the team, representing the group level construct of motivational climate. Given these two levels of motivational climate (i.e., individual and group) there are both theoretical and practical reasons for determining the multilevel effects of motivational climate on collective efficacy.

Motivational climate describes the goal structure of the achievement context in a team and is often created by the coach. Ames et al. [6] characterized two motivational climates: mastery (or task-involving) climate and performance (or ego-involving) climate. Mastery climates are social environments that support effort, cooperation, and an emphasis on learning and task mastery. In contrast, performance climates emphasize normative comparisons, intrateam competition, and a punitive approach by coaches to mistakes committed by participants. Literature on physical education and sports supports the contention that mastery motivational climates are associated with more positive motivation and effective response patterns (i.e., well-being, persistence, task perseverance, adaptive achievement strategy) than perceptions of a performance climate [3, 7, 8]. It is important to note that team climates are not necessarily either mastery or performance focused. These two climates can exist in unison with each other, meaning that a team can be high in both, low in both, or high in one and low in the other [9]. However, the mastery and performance climate are presented as independent dimensions of each other in this study in order to extend the results of previous studies [10, 11].

Related literature [3-5] indicated that motivational climate is an inherent group level construct that reflects the perceived shared social environment of a team. Kozlowski and Klein [12] presented a bottom-up process in multilevel theory building as a helpful guideline for the phenomenon of motivational climate as a team level construct. Kozlowski and Klein indicated that, using the bottom-up process, cognition, effect, behavior, and characteristics of individuals have emergent properties that manifest through social interaction at higher levels; thus, the group constructs represent the aggregated influence of individuals. The motivational climate for a team is chiefly created and formed by the coach [3, 13]. In addition, coaches instruct the team as a whole and create a motivational climate that is perceived by each athlete [4]. Thus, it is reasonable that motivational climate through a bottom-up process is shared at the team level.

The concept of collective efficacy was developed as an extension of self-efficacy. Bandura [14, p. 477] defined collective efficacy as “a group’s shared belief in its conjoint capabilities to organize and execute the course of action required to produce given levels of attainment”. Zaccaro et al. [15 p. 309] further defined collective efficacy as “a sense of collective competence shared among individuals when allocating, coordinating, and integrating their resources in a successful concerted response to specific situational demands”. In other words, collective efficacy can be described as shared confidence among the members of a team regarding the ability of the team to perform a task successfully. Collective efficacy can also be regarded as team confidence [16].

Achievement goal theory provides a framework to understand the influence of coaches over the confidence of athletes. First, coaches create a psychological climate [3, 13] that may have a crucial effect on the perceptions of athletes. Furthermore, the behaviors of coaches are instructional in nature and they attempt to motivate athletes during training and competition in the sport context. Duda et al. [3] indicated that coaches design practice schedules and interact with athletes during training and competition to provide instruction and feedback to encourage excellent performance from their players. Thus, the psychological climate can
affect the perceived team confidence of athletes.

Because a mastery climate dominates when participation, individual progress, and skill development are perceived to be emphasized by the coach, mastery climate may enhance the perceived team ability (collective-efficacy) of athletes. By contrast, a performance climate occurs when athletes perceive that coach-based recognition and evaluation is focused on normative ability, punishment for mistakes, and competitions among teammates to gain the approval of the coach. A performance climate may inhibit perceived team ability (collective-efficacy) of athletes. It is assumed that the development of a team’s motivational climate is a higher level process that results in a group level construct, which enhances or inhibits the perceived collective efficacy of athletes prior to competition.

It can be argued that motivational climate is perceived by each athlete on a team at the individual level and as an aggregate of the perceptions of each athlete on the team, representing the group level construct of motivational climate. Therefore, it is crucial to determine whether motivational climate operates at the individual and group level. In particular, it is vital to determine whether individuals and groups perceive motivational climate simultaneously in relation to collective efficacy.

Prior studies have provided evidence of the relationship between motivational climate and collective efficacy at the group and individual levels. For example, Heuzé et al. [10] indicated that elite female athletes experience high perceptions of a task (mastery) climate and low perceptions of an ego (performance) climate associated with higher perceptions of collective efficacy. However, these relationships were examined on an individual level rather than a group level. Magyar et al. [11] found that perceptions of a group level mastery climate positively predicted the individual collective efficacy of the members of a rowing team. However, only group level motivational climate was examined in this study.

Prior studies have examined the relationship between motivational climate and collective efficacy [10, 11]; however, a number of gaps in the literature must be addressed. Only two studies have examined the relationship between motivational climate and collective efficacy; therefore, further examination is required. The relationship between motivational climate and collective efficacy has been examined at the individual level [10] and at the group level [11]; however, prior studies have not examined these levels simultaneously using the same participants. These studies did not focus on the multilevel facets of motivational climate. It is essential to conduct individual and group level studies for motivational climate to explore the relationship among mastery climate, performance climate, and collective efficacy.

This study replicated and extended the research of Heuzé et al. [10] and Magyar et al. [11]. We hypothesized that the perceptions of motivational climate of athletes are related to perceptions of the collective efficacy of their team. Specifically, it is hypothesized that the perceptions of mastery climate (i.e., emphasis in mastery, effort, and learning) of athletes is positively related to their perceptions of the collective efficacy of their teams. By contrast, the perceptions of a performance climate (i.e., comparison, winning, and punishment) of athletes are negatively related to their perceptions of the collective efficacy of their teams. Furthermore, we examined the combined effect of the individual and group levels of motivational climate to predict perceptions of collective efficacy. We assumed that motivational climate at both levels may explain the unique variance in the perceived collective efficacy of athletes.

**METHOD**

**PARTICIPANTS**

The participants in this study included male (n=175) and female (n=267) cheerleaders who...
represented two competitive groups (all-female group and mixed-gender group) at the high school cheerleading national championships in Taiwan. Most participants were between the ages of 14-17 (86%) years old and had 2-3 years of experience (49%) in competitive cheerleading. A total of 27 teams (9 all-female teams and 18 mixed-gender teams) were included in the study.

PROCEDURE
Prior to survey dissemination, an invitational phone call or email was sent to each team coach asking for help; an invitation letter for participation was sent to athletes and the guardians of athletes through the coaches. The agreeable participants were required to complete questionnaires approximately one hour prior to the start of the championship. Participants were clearly informed of their right to choose not to participate or to stop participation at any time without sanction. Questionnaires were distributed and collected by one of the authors and assistants. During survey dissemination, participants were provided with instructions for completing the questionnaires, and all questions were answered.

MEASURES
Perceived Motivational Climate
A Chinese version of the Perceived Motivational Climate in Sport Questionnaire (PMCSQ) [17] was used to measure mastery and performance motivational climates. The Chinese version of the PMCSQ was developed and translated by one of the original authors (Li-Kan Chi) and consisted of 13 items. Each item was preceded by the stem “On this team . . . ,” and was followed by a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The task-involving (mastery) subscale consisted of 6 items (e.g., “On this team, trying hard is rewarded”), and the ego-involving (performance) subscale included 7 items (e.g., “On this team, the coach gives most of his or her attention to the stars”). The validity and reliability of this questionnaire from the sample were analyzed. The results of a confirmatory factor analysis revealed that the mastery and performance subscales were an acceptable fit (\( \chi^2/df = 4.38, \text{CFI} = .95, \text{NFI} = .93, \text{GFI} = .90, \text{and RMSEA} = .09 \)). The Cronbach’s alpha values were acceptable for the mastery (\( \alpha = .82 \)) and performance (\( \alpha = .88 \)) subscales. The responses of participants on each scale were averaged to yield a single scale score for each participant.

Collective Efficacy
Bandura [14, p.469] proposed two methods for measuring collective efficacy: a) aggregating beliefs of players regarding their own efficacy; and b) aggregating beliefs of players regarding the group efficacy. Bandura also suggested that the second method is more relevant when the group outcome is produced through highly interdependent effort. Most collective efficacy studies on sport used the second method [16]. Therefore, considering that cheerleading is a highly interactive sport in which athletes depend on each other to perform tasks in unison and in group formations, we used the appraisal of athletes regarding the ability of their teams to measure collective efficacy.

Because efficacy beliefs are task-specific [14, 16], one of the authors and a national team cheerleading coach discussed the manner in which to develop a series of items to reflect the crucial skills required to perform efficiently in a cheerleading competition. Based on the scoring system and judging philosophy, ten components of integrated team performance were chosen to represent the cheerleading performance: partner stunts, pyramids, tossing, tumbling, cheer jumping, dance, vocals, cheer arm motions, formations, and overall...
impressions. Consistent with the suggestions proposed by Bandura [14] and previous studies [10, 11], items for measuring collective efficacy in each of the ten components of competitive cheerleading were preceded by the stem “How confident are you that your team can...,” and was followed by a 100-point scale ranging from 100 (extremely confident) to 0 (not at all confident).

An exploratory factor analysis was conducted to determine the dimensionality of the collective efficacy measure. The exploratory factor analysis revealed that one factor that was above the lower asymptote (eigenvalue =7.19, range of factor loadings =0.78-0.88, and explained 71.90% of the total variance). The Cronbach’s alpha value for the collective efficacy scale was .96.

ANALYSES
Hierarchical linear modeling (HLM) was used to test the hypotheses. HLM explicitly accounts for the nested nature of the data and can simultaneously estimate the effect of factors at various levels (i.e., mastery and performance climate) on individual level outcomes (collective efficacy) while maintaining appropriate levels of analysis for the predictors [18]. HLM model building consists of a level-1 model in which the individual level parameters (β coefficients) can vary at level-2 and a level-2 model that involves entering level-2 variables to predict the individual level parameters. All level-1 predictors were group-mean centered, whereas all level-2 predictors were grand-mean centered. Because team size is a team attribute that can influence the collective efficacy of a group [11], team size (the numbers of the cheerleaders on each team) was added as a control variable in level-2. The level-1 model was as follows:

\[
\begin{align*}
\text{Level-1: } \text{CE}_{ij} &= \beta_{0j} + \beta_{1j} (\text{MC}_{ij} - \text{MC}_j) + \beta_{2j} (\text{PC}_{ij} - \text{PC}_j) + e_{ij}, \\
\text{Level-2: } \beta_{0j} &= \gamma_{00} + \gamma_{01} (\text{Agg MC}_j - \text{Agg MC}) + \gamma_{02} (\text{Agg PC}_j - \text{Agg PC}) \\
&\quad + \gamma_{03} (\text{Team Size}) + u_{0j}, \\
\beta_{1j} &= \gamma_{10} + u_{1j}, \\
\beta_{2j} &= \gamma_{20} + u_{2j}
\end{align*}
\]

where \(\beta_{0j}\) is the average collective efficacy in team \(j\), \(\beta_{1j}\) is the effect of mastery climate in team \(j\), \(\beta_{2j}\) is the effect of performance climate in team \(j\), and \(e_{ij}\) is the level-1 error.

RESULTS
DESCRIPTIVE STATISTICS
Descriptive statistics for the examined variables are shown in Table 1. Although not hypothesized, significant negative relationships were observed between the perceptions of mastery and performance climate of teams at both levels. Significant positive correlations were observed between team perception of collective efficacy and the perceptions of mastery climate of teams at both levels. The correlation between team perception of collective
efficacy and the perception of performance climate were negative at level-1 and non-significant at level-2. The correlations provided partial support for the proposed hypothesis; that is, perceived mastery climate is positively related to perceived collective efficacy, and perceived performance climate is negatively related to perceived collective efficacy.

Table 1. Descriptive Statistics for Collective Efficacy, Mastery Climate, Performance Climate, and Team Size

<table>
<thead>
<tr>
<th></th>
<th>Level-1 M</th>
<th>SD</th>
<th>Level-2 M</th>
<th>SD</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Collective efficacy</td>
<td>85.68</td>
<td>14.33</td>
<td>85.98</td>
<td>9.69</td>
<td>-.73**</td>
<td>-.24</td>
<td>-.11</td>
<td></td>
</tr>
<tr>
<td>3. Performance climate</td>
<td>2.66</td>
<td>.93</td>
<td>2.64</td>
<td>.46</td>
<td>-.12*</td>
<td>-.18**</td>
<td>-</td>
<td>-.13</td>
</tr>
<tr>
<td>4. Team size</td>
<td>–</td>
<td>–</td>
<td>16.37</td>
<td>4.9</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

Note. Correlations below the diagonal are for level-1, \( n = 442 \). Correlations above the diagonal are for level-2, \( n = 27 \). Team size represents the number of cheerleaders on each team, which is a level-2 variable only.

** \( p < .01 \)

AGGREGATION STATISTICS

Before aggregating the individual scores related to perceptions of mastery and performance motivational climate to form team level predictors, we calculated a within-group agreement analysis using the \( r_{wg(j)} \) test and between-groups analysis using ANOVA and ICCs. The within- and between-group analyses were used to determine whether the perceived motivational climate of athletes can be shared and presented at the team level.

Following James et al. [19], the authors assessed the within-team inter-rater agreement index \( r_{wg(j)} \) for each motivational climate index. The within-team agreement estimated the mean value for mastery climate at .93 (range .74 to .99, \( SD = .05 \)) and performance climate at .82 (range .61 to .96, \( SD = .09 \)). These values were comparable to the recommend index \( r_{wg(j)} \) and were higher than the recommended cutoff of .70 [20]. One-way analyses of variance were used to identify the significant between-groups variance for mastery climate (\( F (26, 415) = 7.19, p < 0.1 \)) and performance climate (\( F (26, 415) = 4.23, p < 0.1 \)). Furthermore, the intraclass correlation (ICC1) and reliability of the group mean (ICC2) values were .44 and .82 for mastery climate and .50 and .88 for performance climate, respectively. These ICCs values were higher than the recommend values of .12 for ICC1 and .70 for ICC2 [21]. Therefore, the mastery and performance climates were aggregated to determine the team level variables. The authors also tested the multilevel effects of collective efficacy. The within-team agreement (\( r_{wg(j)} \)) estimated the mean value at .96 (range .84 to .99, \( SD = .05 \)). The intraclass correlation (ICC1) and reliability of group mean (ICC2) values for collective efficacy were .42 and .94, respectively. These results indicated the multilevel effects of collective efficacy [14] and were consistent with the results of prior studies on team sports, such as ice hockey and basketball [22, 23], in which group perceptions of collective efficacy were strong. The intraclass correlation for collective efficacy indicates that 42% of the variance in collective efficacy may be explained at the team level, and that cheerleading teams may be distinguished from one another by their perceptions of collective efficacy.

HYPOTHESIS TESTING

Table 2 shows the HLM results of the multilevel effects of mastery and performance climate.
on collective efficacy. The hypotheses predicted that team perceptions of a mastery climate are positively related and team perceptions of a performance climate are negatively related to team perceptions of collective efficacy. The results showed that individual level and group level perceptions of a mastery climate significantly predicted perceptions of collective efficacy ($\gamma_{01} = 7.24, p < .01$; $\gamma_{10} = 3.12, p < .05$), whereas individual and group level perceptions of performance climate were non-significant ($\gamma_{02} = 3.34$ and $\gamma_{20} = -0.32, p > .10$). Therefore, the hypothesis was partially supported.

The explanatory power of the multilevel model was computed [11, 23], and the hypothesis model showed the minimal explanatory power for individual and group level variance (Table 3). The model also showed that group level variance was superior to individual level variance. The percentage of variance explained at the individual level was $6.38\%$, with $18.10\%$ explained at the group level. To obtain a more accurate understanding of the total explained variance (total variance = individual variance + group variance), the proportion of observed variance was corrected at the individual and level and analyses explained only $6.38\%$ of that variance, the individual level model was corrected to account for only $3.70\%$ of the total variance. Similarly, $42\%$ of the observed variance was explained at the group level and calculations showed that only $18.10\%$ of that variance was explained; therefore, the model was corrected to account for only $7.60\%$ of the variance at the group level. Therefore, the hypothesis model accounted for $11.30\%$ of the total variance in collective efficacy. The reduction of variance between the restricted (no predictors) and unrestricted (full model) models was $40.09$, which was significant when compared with a chi-square ($\chi^2 = 15.06, df = 5, p = .01$). Thus, the full model was justified and significantly explained variation at the individual and group levels.

Table 2. Hierarchical Linear Modeling Results for Hypothesis

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Parameter</th>
<th>Coefficients</th>
<th>SE</th>
<th>t-ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>$\beta_{0j}$</td>
<td>83.01</td>
<td>4.07</td>
<td>20.38**</td>
</tr>
<tr>
<td>Mastery climate</td>
<td>$\gamma_{01}$</td>
<td>7.24</td>
<td>1.55</td>
<td>4.67**</td>
</tr>
<tr>
<td>Performance climate</td>
<td>$\gamma_{02}$</td>
<td>3.34</td>
<td>5.15</td>
<td>.65</td>
</tr>
<tr>
<td>Team size</td>
<td>$\gamma_{03}$</td>
<td>2.72</td>
<td>2.87</td>
<td></td>
</tr>
<tr>
<td>Group level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mastery climate</td>
<td>$\gamma_{10}$</td>
<td>3.12</td>
<td>1.17</td>
<td>2.67*</td>
</tr>
<tr>
<td>Performance climate</td>
<td>$\gamma_{20}$</td>
<td>-0.32</td>
<td>.54</td>
<td>-.60</td>
</tr>
<tr>
<td>Random Effect</td>
<td>Parameter</td>
<td>Variance component</td>
<td>df</td>
<td>$\chi^2$</td>
</tr>
<tr>
<td>Collective efficacy</td>
<td>$\delta^2_{u0}$</td>
<td>68.55</td>
<td>23</td>
<td>267.55***</td>
</tr>
<tr>
<td>Mastery climate</td>
<td>$\delta^2_{u1}$</td>
<td>13.08</td>
<td>26</td>
<td>35.33</td>
</tr>
<tr>
<td>Performance climate</td>
<td>$\delta^2_{u2}$</td>
<td>1.34</td>
<td>26</td>
<td>23.12</td>
</tr>
<tr>
<td>Residual</td>
<td>$\delta^2_e$</td>
<td>113.57</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Level-1 $n = 442$, Level-2 $n = 27$.

* $p < .05$; ** $p < .01$; *** $p < .001$
Table 3. Variances and Variance Accounted for at the Individual and Group Levels

<table>
<thead>
<tr>
<th>Variances Estimates</th>
<th>Collective Efficacy</th>
<th>No Predictors</th>
<th>Individual Level Predictors Only</th>
<th>Individual &amp; Group Level Predictors</th>
<th>Percentage of Variance Accounted for&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Percentage of Total Variance Accounted for&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual level</td>
<td>121.31</td>
<td>113.53</td>
<td>113.57</td>
<td>6.38</td>
<td>3.70</td>
<td></td>
</tr>
<tr>
<td>Group level</td>
<td>86.17</td>
<td>101.32</td>
<td>82.98</td>
<td>18.10</td>
<td>7.60</td>
<td></td>
</tr>
<tr>
<td>Deviance</td>
<td>3436.66</td>
<td>3417.11</td>
<td>3396.57</td>
<td>11.30</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>Percentage of individual-level variance accounted for = (variance with no predictors – variance with all predictors) divided by the variance with no predictors. Percentage of group-level variance accounted for = (variance with individual-level predictors – variance with all predictors) divided by the variance with individual-level predictors.

<sup>b</sup>Percentage of total variance accounted for = are the percentages in the third column corrected by the proportions of the total variation, group and individual level, observed in collective efficacy (e.g., the intraclass correlation and 1 – intraclass correlation).

**DISCUSSION**

This study examined the relationships between individual and group motivational climates and collective efficacy in cheerleaders. The authors hypothesized that perceived motivational climate at the individual and group levels may explain perceived collective efficacy, for which perceived mastery climate is positively related to collective efficacy and perceived performance climate is negatively related to collective efficacy. The HLM results showed that perceived mastery climate at both levels positively predicted perceived collective efficacy, whereas perceived performance climate at both levels did not predict perceived collective efficacy. These results are even more intuitive when thought of in conjunction with the context of self-determination theory [24]. From this theoretical perspective, mastery climates overlap with “autonomy-supportive” coaching relationships, which are shown to increase intrinsic motivation and self-determined extrinsic motivation [25].

This study has two main contributions to the literature. The first contribution is an understanding of the relative determinants of perceived individual and group level motivational climate for predicting perceived collective efficacy in cheerleading teams. The HLM model showed that a perceived mastery climate at the group level had the strongest variance explanation for perceived collective efficacy. Thus, the differences in individual perceptions of mastery climate may be partly explained by perceived collective efficacy. Athletes who more strongly shared the perception of a supportive and cooperative team atmosphere were more likely to espouse confidence in the ability of their team to perform successfully.

The second major contribution of this study was to confirm that perceived mastery and performance climates occur at the individual and group levels in cheerleading teams. The aggregation statistics provide strong support for the discussions of Duda et al. [3] and Smith et al. [4] regarding motivational climate as a group level construct. Motivational climate was perceived by athletes at the individual level, and an aggregate of the perceptions can be used to represent the group level construct of perceived motivational climate.

Regarding the HLM results, a perceived performance climate at the individual or the group level did not significantly predicted collective efficacy. This may have occurred because the objective of a cheerleading team is to demonstrate skills with coordination and...
synchrony. Cheerleaders must perform a routine of continuous movement in a compulsory manner. Competition and comparisons among team members may not change their execution of skills. Thus, a performance climate did not influence the beliefs of team members regarding the ability of their team to perform their skills. Furthermore, the high mastery climate and low performance climate were consistent with those in previous studies [26]. Because the competitive world of cheerleading is highly focused on excellent results, athletes may experience frustration when their performance is not evaluated positively. Thus, the cheerleaders who participated in the study may benefit from an autonomy-supportive and cooperative climate that shifts the focus from competitive results to a more task relevant and constructive climate.

LIMITATIONS AND FUTURE DIRECTIONS
This study has a number of limitations. The main limitation of the present study was that its findings stem from correlation data, so no causal inferences can be made. Another study limitation was that the results may not be generalizable to contact and collision sports. Samples from various types of sports may not have similar performance demands as cheerleading teams. Furthermore, because all data were self-reported and collected at one time point, the possible variance may have inflated the relationship between variables and threatened the internal validity [26]. The data were collected prior to a national level competition; therefore, the importance of the situation and the stress induced by it may have affected the perceptions and responses of athletes. Furthermore, the number of cheerleading teams evaluated in this study is lower than 30, which is suggested in MLM methodology for optimal statistical power [27]. These limitations must be considered when interpreting the results.

Smith et al. [28] have shown that the intervention of coaches in mastery climate can reduce the sport performance anxiety of young athletes. The results of this study revealed that a group level mastery climate positively predicted the collective efficacy of athletes prior to competition. It may be beneficial to examine the growth trajectories of coaching intervention in mastery climate in increasing the confidence of athletes in a future study. Furthermore, the multilevel relationship between motivational climate and collective efficacy can be examined in a longitudinal study.

CONCLUSION
This study has vital practical implications for coaches. It is likely that coaches who utilize autonomy-supportive practices to develop a supportive and cooperative climate for athletes may help create an effective motivation climate and improve team confidence in cheerleading teams. As indicated in previous studies [3, 29, 30], a supportive motivational climate may help elite athletes to develop more task-relevant thoughts, intrinsic and self-determined extrinsic motivation, and have a positive long-term effect on the mental strength of athletes. Mental strength includes attending practice regardless of whether it is mandatory, exhibiting persistence when encountering negative outcomes, and continually working on improving various skills.
REFERENCES


