Impacts of coach-athlete relationship, self-efficacy and exercise attitude on collective efficacy of sport teams

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ABSTRACT

This study aimed to explore the impacts of the coach-athlete relationship, self-efficacy and exercise attitude on the collective efficacy of sports teams. With a random selection of athletes from various sports teams as the subject, a questionnaire survey was conducted resulting in the collection of 241 valid samples. The study adopted the four scales of athletes’ self-efficacy, exercise attitude, coach-athlete relationship and collective efficacy as its instruments to conduct a Likert scale questionnaire survey. A hierarchical regression analysis of the collected data indicated the following: Athletes’ self-efficacy has a significant influence on the coach-athlete relationship, but no significant influence on collective efficacy. Athletes’ exercise attitude has a significant influence on the coach-athlete relationship and collective self-efficacy. Meanwhile, the coach-athlete relationship has no mediating effect on the relationship between athletes’ self-efficacy and collective efficacy.

Keywords: Coach-athlete relationship, self-efficacy, exercise attitude, collective efficacy.

INTRODUCTION

A team must enable its members to perform, co-operate and communicate to reach a consensus and accomplish its designated goal or mission. We have observed various forms of teamwork that lead to success in all works of life, and thus became interested in how sports teams work in a process of training or competition in terms of athletes’ mental state, performance and the coach-athlete relationship. We believe that members of a sports team perform under the influence of both teamwork and the coaches who serve to instruct and communicate with the players. It is worth exploring how the coach-athlete relationship may work efficiently and effectively to improve the performance of a sports team.

With regard to athletes’ mental state, self-efficacy beliefs can impact individuals’ thought patterns, emotional reactions, motivations, behaviors or choices of activities (Bandura, 1982). Both self-efficacy and collective efficacy have been found to be major factors for the prediction of athletic performance (Wang, 2013). Collective efficacy is a notion derived from the concept of self-efficacy based on perceptions of collective capability and judgment, allowing a group to integrate the self-efficacy of its members into collective anticipation of group performance (Bandura, 1982). As such, athlete trainers are advised to explore the variables affecting self-efficacy and collective efficacy in order to take more appropriate measures to help athletes improve their performance.

As for athletes’ attitudes, existing research indicates that a positive exercise attitude can help athletes to work toward their athletic ideal and so improve their related behaviors and performances. Chen and Chung (2009) consider that attitude is a mental factor that occurs in relation to an act, and is based on the perceived value of something that can influence individual behavior or activity. Tsai and Hsu (2006) further note that an intensified attitude works to enhance behavioral consistency. Meanwhile, a related study examining how coaches’ efficacy can predict athletes’ exercise attitude (Wang and Chen, 2006) indicated that
coaches' motivation, competing strategy and technology are major factors affecting athletes' exercise attitude. Therefore, coaches are advised to use their athletic experience to help athletes strengthen their exercise attitude and behavioral consistency. In light of these findings, this study considers exercise attitude as a crucial variable impacting both individual and collective efficacy.

In addition to athletes' mental factors, their thoughts and performance can also be affected by coaching behaviors to a certain extent. However, previous research works focused primarily on the resources provided by coaches to help athletes develop their mental tenacity, with little consideration of coach-athlete interactions. This leads to the question of whether and how the resources provided by coaches, without any proper instruction can help improve the effectiveness of athletes and team cohesion. As noted by Turman (2003), members of a sports team who enjoy positive coach-athlete relationships tend to experience high levels of team cohesion. When coaches and athletes have a lack of communication, cooperation and commitment in a sports team, then the members will perceive negative coach-athlete relationships and suffer from lower team cohesion.

Meanwhile, Huang and Nien (2012) used coaches' leadership as a variable for the prediction of team cohesion and this is a key factor affecting how team members interpret collective efficacy (Bandura, 1997). When team members have positive perceptions of their coach's leadership, their collective efficacy will be higher (Watson et al., 2001). Any changes in the coach's leadership are thus likely to affect team cohesion (Mischel and Northcraft, 1997).

To date, the relevant literature has suggested a certain correlation between the coach-athlete relationship and collective efficacy. Moreover, in this work we assume that since two-way communication is important in the development of interpersonal relationships in society in general, the coach-athlete relationship is important in the perception of collective efficacy. As such, this study aimed to explore the impacts of the coach-athlete relationship, self-efficacy and exercise attitude on the collective efficacy of sports teams. To be more specific, this work examines whether the coach-athlete relationship has a mediating effect on the relationships among athletes' self-efficacy, exercise attitude and collective efficacy.

**Purposes of the study**

This research has the following two main purposes:

1. To review the literature on self-efficacy, exercise attitude and coach-athlete relationship, explore the relationships among these three constructs and their impacts on collective efficacy, and develop a research framework on the relationships among all four constructs.
2. To explore the mediation effect of the coach-athlete relationship on the relationship between athletes' self-efficacy and collective efficacy in sports teams.

**METHODOLOGY**

**Research framework and hypotheses**

\[ H_1 \]: Athletes' self-efficacy has a significant effect on collective efficacy;
\[ H_2 \]: Athletes' exercise attitude has a significant effect on collective efficacy;
\[ H_3 \]: Athletes' self-efficacy has a significant effect on the coach-athlete relationship;
\[ H_4 \]: Athletes' exercise attitude has a significant effect on the coach-athlete relationship;
\[ H_5 \]: The coach-athlete relationship has a mediating effect on the relationship between athletes' self-efficacy and collective efficacy.
\[ H_6 \]: The coach-athlete relationship has a mediating effect on the relationship between athletes' exercise attitude and collective efficacy.

Figure 1 shows the research framework.

**RESEARCH SUBJECTS AND INSTRUMENTS**

This study selected athletes and coaches of various sports...
teams from universities and high schools to undergo a questionnaire survey, using a random sampling approach. A total of 250 copies of the survey were issued, and 241 valid samples were then collected. This study used a Likert scale for the various items, as follows: (1) Athletes’ self-efficacy, measured using items on athletes’ self-efficacy, as modified from the corresponding instruments developed by Sallis et al. (1988), Hu (2003) and Chiu (2008); (2) Exercise attitude, measured using items on athletic cognition, emotions and behavior, with reference to the corresponding instrument developed by Hsu (2007); (3) Collective efficacy, measured using items on collective efficacy and modified from the model developed by Jung and Sosik (2002) based on the corresponding instrument invented by Bandura (1986) and (4) Coach-athlete relationship, measured using a Likert scale for athletes’ descriptions of their coach-athlete relationship, as modified from the Coach-Athlete Relationship Questionnaire (CART-Q) developed by Jowett and Ntoumanis (2004).

Data analysis

The collected data was analyzed using SPSS software version 17.0 to generate descriptive statistics and perform factor analysis, reliability analysis, correlation analysis and regression analysis. In the hierarchical regression analysis, collective efficacy was treated as a criterion variable, with self-efficacy and exercise attitude as predictor variables and the coach-athlete relationship as an intervening variable. Based on the approach to test mediation effects proposed by Baron and Kenny (1986), an analysis was conducted to determine whether the coach-athlete relationship has a mediating effect on the relationship between athletes’ self-efficacy and collective efficacy, and on the relationship between athletes’ exercise attitude and collective efficacy. The collected data was classified into four models of variables for regression analysis. An analysis was conducted with the intervening variable under control to examine the explained variance of the predictor variables. Partial mediation occurs if the explained variance is decreased and reaches a statistically significant level. Total mediation occurs if the explained variance is decreased and fails to reach statistical significance. The value of α is set at 0.5 to establish statistical significance.

RESULTS

Reliability and validity analyses

The reliability analysis indicated that the Cronbach’s Alpha coefficient for each scale was greater than 0.7, suggesting high reliability. Meanwhile, the factor analysis showed a KMO value of 0.892 for athletes’ self-efficacy, 0.956 for exercise attitude, and 0.728 for collective efficacy, indicating high construct validity.

Correlation analysis

This study used Pearson product-moment correlation to examine the relationships between variables, and the results were as follows. Self-efficacy and exercise attitude were correlated (r=0.441, p<0.05). Self-efficacy and coach-athlete relationship were correlated (r=0.434, p<0.05). Self-efficacy and collective efficacy were not correlated (r=0.105, p>0.05). Exercise attitude and collective efficacy were correlated (r=0.132, p<0.05). Exercise attitude and coach-athlete relationship were correlated (r=0.736, p<0.05). Collective efficacy and coach-athlete relationship were not correlated (r=0.095, p>0.05). Accordingly, there was no significant relationship between athletes’ collective efficacy and the coach-athlete relationship.

Regression analysis

The results of the regression analysis are shown in Table 1 and described as follows:

(1) Self-efficacy has no significant impact on collective efficacy (β=0.105 and p=0.105); (2) Exercise attitude has a significant, positive impact on collective efficacy (β=0.132 and p=0.041);
(3) Self-efficacy has a significant, positive impact on the coach-athlete relationship (β=0.434 and p=0.000);
(4) Exercise attitude has a significant, positive impact on the coach-athlete relationship (β= 0.736 and p= 0.000).

With coach-athlete relationship treated as the intervening variable in Model 2, the results of the second hierarchical
regression analysis indicated that the coach-athlete relationship has no mediating effect on the relationship between self-efficacy and collective efficacy, with the coefficient changing from 0.105 to 0.078 for self-efficacy, and a coefficient of 0.061 (p=0.397) for coach-athlete relationship (Table 2).

With coach-athlete relationship treated as the intervening variable in Model 2, the results of the second hierarchical regression analysis indicated that exercise attitude has no mediating effect on the relationship between self-efficacy and collective efficacy, with the coefficient changing from 0.132 to 0.136 for self-efficacy and a coefficient of -0.006 (p=0.952) for coach-athlete relationship (Table 3).

### DISCUSSION

**Athletes' self-efficacy and collective efficacy**

While some people may doubt their abilities or even give up in the face of difficulties, those with high self-efficacy will engage themselves to make more efforts to overcome the problems they face (Huang and Huang, 2006). Accordingly, higher self-efficacy tends to result in more desirable performance outcomes.

Bandura (1982) noted that self-efficacy is individual, changeable and progressive, and thus can be changed through training. Collective efficacy can be understood as an assembly of the self-efficacy beliefs of team members or as a collective belief of team members in their capabilities. Relevant studies have found that there are significant, positive correlations between self-efficacy and collective efficacy (Chang, 1997; Liu, 2000).

This study assumed that athletes with high self-efficacy would be more likely to engage themselves to think and act to accomplish their goals. In terms of collective efficacy, it requires the cooperation and interdependence of team members to achieve various successful outcomes. There is a positive correlation between self-efficacy and collective efficacy if athletes' self-efficacy is found to be able to effectively impact their collective efficacy, improve their organizational capabilities and performance, and help them to accomplish their goals.

The results of this study showed that athletes' self-efficacy and collective efficacy were not correlated. According to the descriptive statistics, most of the subjects in this study were athletes over the age of 21 from various school teams. It could be that these older athletes, who are more independent and mature in thought and behavior, were unwilling to rely on their teammates to improve their skills. Instead, they prefer to develop their abilities alone, and avoid the impact that poor communication could have on their development. As such, unspoken misunderstandings and differences arise among team members. The culture of a team involves a variety of elements, such as the team members' individual skills, unspoken understanding, and organizational capability, which cannot be changed by any single member. As noted by Zaccaro et al. (1995), collective efficacy is subject to the operational development that occurs within a group, and this is seen as a different construct to self-efficacy.

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Exercise attitude and collective efficacy

This study assumed that athletes' exercise attitude would be reflected in their behavior. Athletes' exercise attitude may be impacted by individual personality traits and other major factors, such as collective efficacy, in a sports team. Athletes in a sports team must communicate and count on one another to achieve their goals. If athletes' exercise attitude works to impact their collective efficacy, improving their capabilities and performance so as to accomplish their team goal, then team will undergo a positive development. If athletes fail to practice seriously, then this will negatively affect the overall performance of the team. If athletes take an active attitude to exercise during training or a competition, then this will raise team cohesion and collective efficacy, making it more likely that their goals will be achieved.

According to social learning theory, as proposed by Bandura (1986), the collective efficacy of group members will impact their decisions as to what they have to do and contribute to the group, and whether to persist if their concerted efforts fail to pay off as expected. By definition, collective efficacy refers to the collective beliefs of a group or organization in their capabilities to accomplish a specific mission (Lindsley, Brass & Thomas, 1995). Exercise attitude refers to an individual's beliefs, consciousness or expectations with regard to exercise, while individual self-efficacy beliefs may also exist in a team. The extent of self-efficacy and exercise attitude, as perceived by the individuals involved, will affect the overall level of collective efficacy (Chang, 1997; Liu, 2000). The results of this study indicate that the two constructs are positively correlated, corresponding to the findings of earlier research.

Athletes’ self-efficacy and the coach-athlete relationship

Schruier and Vansina (2002) proposed that leadership is based on the relationship between a leader and his or her followers. The coach-athlete relationship will affect athletes’ self-esteem and confidence, and this study assumed that athletes’ beliefs in their abilities will stimulate them to think and act in certain ways to achieve their goals. With high self-efficacy, athletes are more able to communicate their ideas with their coaches and benefit from coaching instructions to become more mature. This study further argued that the coach-athlete relationship will affect athletes’ self-efficacy and athletic performance.

Athletes who admire their coaches as role models would make it their objective to emulate and acquire their skills. When athletes suffer setbacks in a training session or competition, they expect their coaches to remain confident in their ability and instruct them to overcome their problems based on past experiences, which allows them to become more confident and persistent in pursuit of their goal. Individuals' self-efficacy beliefs powerfully affect the choices they make, the ideals they pursue, how much they contribute to a designated mission, and how long they persist in the face of difficulties and setbacks (Bandura, 1991). Since coaches are regarded as the most intimate, admired and influential people to athletes, the coach-athlete relationship is of great importance. In support of this, the results of this study indicated that athletes’ self-efficacy has a positive effect on the coach-athlete relationship, supporting H3.

Exercise attitude and the coach-athlete relationship

If athletes practice with a positive attitude while their coaches express concern and support in a training session, they will feel a sense of achievement and continue to persist in their practice. Similarly, athletes will perform in a competition with a more positive attitude under the instruction of coaches they have a good relationship with. Athletes with a more positive attitude are more willing to accept coaches’ advice and continue to work hard in competitions. Jowett and Ntoumanis (2004) claim that the interactions between coaches and athletes become more effective and influential based on higher degrees of intimacy, commitment and complementarily. Coaches can help athletes enhance their motivation and confidence as they work to improve their performance, both of which have a positive influence on their exercise attitude. The results of this study indicated that athletes’ exercise attitude has a significant, positive relationship with the coach-athlete relationship, supporting H4.

The coach-athlete relationship mediating between athletes’ self-efficacy and collective efficacy

According to Turman (2003), members in a sports team who perceive an optimal coach-athlete relationship tend to enjoy more positive interpersonal relationships and high levels of team cohesion. In contrast, when coaches and athletes face problems with regard to communication, cooperation and commitment in a sports team, members will perceive negative coach-athlete relationships and the group will suffer from less team cohesion. The leadership of coaches is thus a key factor affecting how team members interpret their collective efficacy (Bandura, 1997). However, the results of this study failed to support the hypothesis that the coach-athlete relationship has a mediating effect on the relationship between self-efficacy and collective efficacy. This may be attributed to the national sports culture in Taiwan, in which the coach-athlete relationship is a hierarchical senior-junior or superior-inferior relation.

In this culture, coaches are assigned more responsibility for delivering technical instruction than for developing good
interpersonal relationships. This may explain why the coach-athlete relationship failed to affect athletes’ confidence and self-efficacy in this study. Moreover, it should be noted that the number of samples obtained in this work is rather limited, and insufficient to reach a firm conclusion as to whether the coach-athlete relationship impacts athletes’ self-efficacy and collective efficacy. Future research should thus aim to increase the number of samples to acquire more comprehensive findings.

The coach-athlete relationship mediating exercise attitude and collective efficacy

Some examples of coach misconduct have been noted in past studies. For instance, coaches may instruct in such a way that prevents athletes from developing their mental skills and abilities to respond to athletic problems, which negatively affects their self-efficacy, concentration and ability to resist pressure (Gearity & Murray, 2011). Even if athletes wish to maintain good relationships with their coaches, they are likely to encounter this or other examples of coach misconduct that have negative influences on their development of mental skills. In contrast, athletes who are involved in a good coach-athlete relationship may care excessively about their coaches’ expectations. Expectations or improper feedback from coaches are considered two of the major sources of pressure for athletes (Solomon, 2010), related to low self-efficacy or anxiety. However, the results of this study indicated that the coach-athlete relationship has no mediating effect on the relationship between exercise attitude and collective efficacy. Accordingly, it is arguable that coach-athlete relationship has no impact on the relationship between athletes’ attitude and their desire for victory in the course of a competition. Moreover, this study found that on-site coaching instruction has no impact on the relationship between the teamwork of members and collective performance, although this issue deserves to be further investigated in future research.

RECOMMENDATIONS

The following recommendations were made in the course of this study:

(1) The questionnaire survey should be conducted in a more comprehensive manner to establish a more appropriate overall model. For instance, in addition to athletes, coaches should be included to respond to the questionnaire on the coach-athlete relationship;

(2) Athletes are required to accumulate experience over a long-time training period and through various competitions, thus, improving their self-efficacy. Meanwhile, exercise attitude is an essential factor that impacts athletic performance; having a proper exercise attitude will help athletes improve their athletic proficiency;

(3) As the questionnaire survey was conducted with the assistance of staff the author was acquainted with related schools, to increase the rate of return; the samples were collected in a less than random manner. It is thus recommended that the number of samples collected from coaches and athletes be increased for a more comprehensive study to be conducted.

REFERENCES


Turman PD (2003). Coaches and cohesion: The impact of coaching techniques on team cohesion in the small group sport setting. J. Sport Behav. 26:86-104.


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