

Chapter 27

Self, Relational, and Collective Efficacy in Athletes

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Please cite as: Hepler, T. J., Hill, C. R., Chase, M. A., & Feltz, D. L. (2021). Self, relational, and collective efficacy in athletes. In Z. Zenko & L. Jones (Eds.), *Essentials of exercise and sport psychology: An open access textbook* (pp. 643–663). Society for Transparency, Openness, and Replication in Kinesiology. <https://doi.org/10.51224/B1027>

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Chapter Overview

Athletes and their coaches know that successful performance in sport is based, in part, on psychological factors. One of those factors is self-efficacy: the confident belief that one can perform skillfully, cope with performance pressure, and sustain the hard work necessary to perfect one's skills (Bandura, 1997). In fact, self-efficacy is considered one of the most influential cognitive variables involved in athletic performance. Not only is one's self-efficacy beliefs important to performance, but the relational beliefs between athletes and coaches and athletes with athletes, that is, their relational efficacy, is important to performance outcomes. Athletes and coaches also realize that much of sport performance occurs in teams. It is essential that athletes and coaches have confidence in their team's abilities, referred to as collective efficacy, to be successful. Bandura's theory (1977) of self-efficacy (and its collective efficacy extension) has been proposed as a cognitive explanation for differences in the abilities of athletes, teams, and their relational confidence in each other to carry out their challenges in sport performance. In this chapter, we provide an overview of self-efficacy, relational efficacy, and collective efficacy constructs. In each section, we outline the concepts, provide some research examples, and identify ways to enhance efficacy beliefs.

Self-Efficacy

One factor that consistently distinguishes more successful athletes from less successful ones is self-efficacy. Self-efficacy refers to “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (Bandura, 1997. p. 3). Practically speaking, self-efficacy is analogous to a task specific form of confidence, but for clarity and consistency, we will only use the term self-efficacy in this chapter. Self-efficacy does not simply reflect the skills a person has, but rather it represents one’s beliefs about what can be accomplished with those skills. This distinction explains how similarly skilled athletes in the same situation, or the same individual under different conditions, can perform at different levels. Self-efficacy beliefs are task specific and vary across time and circumstance. Accordingly, a baseball player may have high self-efficacy for hitting a fastball, but low self-efficacy for fielding a groundball. Likewise, an athlete can be highly confident one day, but experience significant self-doubts another day. These beliefs are generally referred to as task self-efficacy in the research literature because they involved beliefs about performing a particular task rather than beliefs about one’s capability to cope with a situation or to learn a new skill (Feltz et al., 2008). Self-efficacy beliefs are important because they influence one’s affect (e.g., anxiety, depression), behavior (e.g., task choice, effort, persistence), and cognitions (e.g., goals, attributions). Athletes with high self-efficacy choose demanding tasks, set challenging goals, invest a great deal of effort in pursuit of those goals, and persist in the face of failure and obstacles. In situations where an athlete has the requisite skills and motivation, efficacy beliefs play a central role in determining the success of a performance (Bandura, 1997).

Sources of Self-Efficacy

Self-efficacy judgments are formed by complex cognitive processes involving the selection, interpretation, and integration of information derived from six different sources: performance accomplishments, vicarious experiences, verbal persuasion, physiological arousal, emotional states, and imaginal experiences (Feltz et al., 2008). Self-efficacy beliefs are the mediating mechanism between these sources and affect, behavior, and cognitions.

Performance Accomplishments

Performance accomplishments, or enactive experiences, are based on an individual’s past performances. These previous performance experiences provide an authentic evaluation of a person’s capabilities and are therefore considered to be the most powerful source of efficacy information. Efficacy beliefs are enhanced by experiences that are perceived as successful, whereas perceived failures undermine efficacy beliefs. For example, a runner who perceives her past few races and practices as successful will have higher self-efficacy for the upcoming race than she would if she had viewed those recent performances as unsuccessful. However, the impact of enactive mastery experiences on self-efficacy is influenced by several factors, such as task difficulty (e.g., a more difficult race), effort expenditure (e.g., knowing one could have tried harder), causal attributions (e.g., viewing mistakes as a learning experience rather than a physical limitation), and temporal pattern of success and failure (e.g., occasional early failures, but improving times; Feltz et al., 2008). Research has consistently reported past performance to be a significant source of self-efficacy on a wide variety of sports skills (see Feltz et al., 2008 for a review).

Vicarious Experiences

Vicarious experiences (e.g., observational learning, modeling, demonstration) shape efficacy beliefs by observing and comparing oneself to other people. This source influences self-efficacy by providing opportunities for social comparison, conveying task relevant information, and demonstrating effective learning and coping strategies (Bandura, 1997). For instance, a young volleyball player may

observe a teammate of similar ability masterfully executing a jump serve, a skill the athlete has never herself attempted before. By watching her teammate, she gains information about the basic technique and timing of the skill, identifies strategies to overcome common errors, and begins to view this as a challenging, yet achievable skill. The influence of vicarious experience on self-efficacy depends on various factors, such as observer experience, model competence, and observer or model similarities. Self-efficacy beliefs based on vicarious information tend to be weaker and more susceptible to change than those formed through performance accomplishments. However, vicarious experiences can be an especially influential source of efficacy information on novel skills where the athlete lacks significant experience. Likewise, this is a crucial source of information for tasks lacking clear, objective indicators of competency in which an individual's performance can only be gauged in comparison to the performance of others (Bandura, 1997).

Verbal Persuasion

Verbal persuasion (e.g., evaluative feedback, others' expectations, self-talk) involves direct expressions of support in a person's capabilities. For example, a coach telling a player "you got this, just like in practice" is using verbal persuasion to make the athlete feel more efficacious. Verbal persuasion is most effective when given by a knowledgeable, credible, trustworthy source. Some caution is necessary, as verbal persuasion has greater power to sow seeds of doubt than it does to build self-efficacy. By itself, verbal persuasion usually produces weak efficacy beliefs that are easily undermined by perceived failures or poor performances. Verbal persuasion is most effective when used in conjunction with other sources of ability information, such as providing corrective performance feedback (Bandura, 1997).

Physiological States

Interpretation of one's physiological states (e.g., arousal, fatigue, and pain) can also inform self-efficacy beliefs. An athlete who believes that a racing heartbeat and sweaty palms signify fear, distress, or self-doubt, will likely experience a decrease in self-efficacy. Conversely, the athlete will likely feel more efficacious if those same symptoms are viewed as signs of being "psyched up" and ready for action. Additionally, athletes may read some physiological states as a sign of their physical fitness to boost or lessen their efforts during grueling performances. Accordingly, it is not the actual physiological states that matter, but rather how the athlete views or interprets those states. While this efficacy source is generally weaker than past performance accomplishments, Bandura suggests that physiological states are particularly salient in domains that involve physical accomplishments, such as sport (Bandura, 1997).

Emotional States

Self-efficacy beliefs are also influenced by emotional states, such as mood and emotional arousal. As with physiological states, an individual's interpretation of the emotional state determines its influence on self-efficacy. A positive emotional state tends to enhance efficacy beliefs, whereas a negative emotional state often decreases self-efficacy. Likewise, intense emotional states have a greater impact on efficacy beliefs than do weaker states. Emotional states can also bias efficacy judgments, particularly when there is a mismatch between the emotional state and performance. For instance, athletes who fail while in a positive emotional state tend to overestimate their abilities. Conversely, success that is achieved while in a negative emotional state often leads individuals to underestimate their capabilities (Bandura, 1997).

Imaginal Experiences

Efficacy information can also come from imaginal experiences, referred to by Bandura as cognitive self-modeling or cognitive enactment. This source involves visualizing oneself (or another

person) performing a task. This simulated experience allows athletes to rehearse an endless array of skills, situations, and outcomes, such as shooting free throws, executing set plays, and preparing for various end of the game scenarios. For example, a young tennis player can envision themselves hitting an ace to win the Wimbledon title. Visualizing successful performance and effective mastery strategies increase efficacy beliefs, whereas images of failure usually result in a decreased sense of self-efficacy (Feltz et al., 2008).



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Research on Self-Efficacy in Sport

Influence of Self-Efficacy on Performance

Not surprisingly, much of the research on self-efficacy in sport has focused on performance. One study involving elite male ski jumpers found that self-efficacy was significantly related to performance in competition. Specifically, athletes with high self-efficacy finished the competitive season with a higher World Cup ranking and performed better on the first day of a multiday competition (Sklett et al., 2018). Self-efficacy has consistently been shown to have a positive effect on performance in a wide array of team and individual sports (see Feltz et al., 2008 for a review). In fact, a meta-analysis reported that self-efficacy accounted for approximately 16% of the variance in sport performance (Moritz et al., & Mack, 2000).

It is important to understand that the relationship between efficacy beliefs and performance is reciprocal. In this manner, high self-efficacy leads to improved performance, which then enhances efficacy beliefs. Numerous studies have examined and confirmed the reciprocal relationship between efficacy beliefs and performance using path analytic techniques (see Feltz et al., 2008 for a review).

Influence of Self-Efficacy on Affect, Behavior, and Cognition

In addition to performance, self-efficacy beliefs influence a wide array of emotions, behaviors, and thought patterns. In a qualitative study, researchers interviewed 12 professional golfers who reported that self-efficacy influenced their thought patterns and emotional responses. For example, one

golfer remarked “When I am feeling more confident, I am more patient and I am more forgiving. A bad shot doesn't stress me out” (Valiante & Morris, 2013). Likewise, athletes who were efficacious in their self-regulation skills achieved emotional states that more closely represented their desired state and reported using emotional regulation strategies more frequently and effectively than athletes with low self-efficacy (Friesen et al., 2019). Research also suggests that, when given unambiguous performance feedback, people with high self-efficacy persist longer than those with low efficacy beliefs (Halper & Vancouver, 2016). Moreover, athletes must cope with various stressors while competing and self-efficacy has been shown to increase coping effectiveness (Nicholls et al., 2010). Furthermore, self-efficacy has also been linked to effective cognitive functioning, such as making better, faster decisions (Hepler, 2016).

Role of Self-Efficacy in Sport Injury and Rehabilitation

An emerging area of study has focused on the role of self-efficacy in sport injury and rehabilitation. For instance, a survey of 297 athletes examined the role of psychological factors in sport injury. Researchers concluded that self-efficacy played a central role in the likelihood of injury occurrence, as well as recovery from injury (Olmedilla et al., 2018). Likewise, self-efficacy has been found to affect athletes' intention to report a sports related concussion. Athletes with high reporting self-efficacy were 3.15 times more likely to self-report a concussion than those with lower efficacy beliefs (Carpenter et al., 2020). In regards to rehabilitation, a clinical review of studies involving post-ACL reconstructive surgery patients concluded that knee self-efficacy (i.e., self-efficacy in their ability to perform various daily, sport/leisure, and physical activities as well as self-efficacy in their future knee function) was a significant predictor of adherence to rehabilitation, physical activity level, and knee symptoms/function (Burland et al., 2019).

Enhancing Self-Efficacy in Sport

Self-efficacy beliefs are critical to successful functioning in sport; therefore, it is important to understand how to increase it. In the following section, we present a few efficacy enhancing techniques, but for a more comprehensive review, see Feltz et al. (2008).

Provide Successful Performance Experiences

One proven way to build self-efficacy is to provide athletes with opportunities to experience improvement, success, and mastery. For instance, tasks and skills should be presented and practiced in a logical progression based on difficulty (e.g., in basketball, players should practice easier layups before more challenging 3 point shots). Additionally, complex tasks should be broken down into parts thereby allowing athletes opportunities to experience mastery early in the learning process. Physical guidance, such as spotting in gymnastics, and using performance aids should also be incorporated, when appropriate (Feltz et al., 2008). In youth sports, rules and equipment modifications (i.e., body scaling), such as lowering a basketball hoop, using smaller rackets and lower compression balls in tennis, and playing on smaller softball fields, can be vital to affording children the opportunity to experience success in sport.

Give Effective Feedback and Encourage Positive Self-Talk

Verbal persuasion can also be used to increase self-efficacy beliefs. To be most effective, feedback should be believable, truthful, positive, and contingent on performance (Feltz et al., 2008). For instance, surrounding oneself with people who can provide praise, encouragement, and skill related feedback can help boost self-efficacy (Valiante & Morris, 2013). In sport, coaches can be an especially influential source of verbal persuasion and feedback. Previous research has shown that coaches' behaviors and feedback have a significant impact on self-efficacy. Two types of feedback that have been

shown to be effective at enhancing athletes' efficacy beliefs are training/instruction and positive feedback (Donald et al., 2019). Self-talk is another form of verbal persuasion that can be used to increase self-efficacy. For instance, elite athletes report using self-talk to boost their sense of efficacy, particularly during performance struggles (Miles & Neil, 2013).

Seeing is Believing

Another effective efficacy building technique is imagery. Through imagery, individuals can see themselves mastering skills, achieving milestones, overcoming adversity, and coping effectively. Imagery can have both direct and indirect effects on self-efficacy beliefs (Feltz et al., 2008). Images of successful performance can directly increase feelings of efficaciousness. Indirectly, imaging success can improve performance and successful performance in turn enhances one's sense of efficacy. Imagery based interventions have reported significant increases in self-efficacy, but type of imagery and experience level should be considered (Fazel & Fatemeh, 2018).

Learning Exercises

1. What is task self-efficacy?
2. Describe the importance of self-efficacy to performance in sport.
3. Design a series of progressive skills in the sport of your choosing that would build a novice athlete's self-efficacy.

Relational Efficacy

When people are recognized for great achievements, they often mention the role that significant others had along the path to success. The person mentioned might be an important coach, teacher, trainer, or parent. People have hypothesized that having others believe in their capabilities might drive someone to work harder and persist longer in tasks. To understand the role that significant others have in the development of efficacy beliefs, Lent and Lopez (2002) introduced a relational efficacy framework (also known as the tripartite efficacy framework) to capture some of the key social influences that might shape our self-efficacy perceptions. This framework was outlined to further understand the role of social influence above and beyond the social components embedded in Bandura's initial conception of the formation of self-efficacy beliefs. The original self-efficacy framework incorporates factors that are social, including social persuasion (Bandura, 1997). However, the relational efficacy model greatly expands on the social components included as antecedents to the development of self-efficacy (Lent & Lopez, 2002).

Working from the broader social cognitive theory of which self-efficacy is a component (Bandura, 1997), Lent and Lopez (2002) proposed that the social environment has a substantial influence on self-efficacy perceptions. Specifically, two new sources of efficacy information should be considered when examining efficacy perceptions in the social environment: other efficacy and relation inferred self-efficacy (RISE). Other efficacy is defined as a person's view of another person's ability. An athlete, for instance, could have other efficacy beliefs about their coach. The athlete may judge how confident they are in their coach's ability to effectively manage practices, games, strategy, etc. These other efficacy perceptions could be based on past performance, information the athlete has gathered about the coach from others, and observations of the coach. In team sports, athletes also hold other

efficacy beliefs about their teammates which could shape in game behaviors, choice of joint activities, and the amount of effort put forth in tasks. For example, if Alyssa is highly confident in Serena's ability to make a game winning shot, Alyssa is more likely to seek out passing to Serena in a critical moment of a game. RISE is an individual's beliefs regarding how they are viewed by the other people around them. RISE is Alyssa's beliefs about how Serena views Alyssa's ability. An athlete's RISE beliefs are modulated by the athlete's appraisal of the feedback they receive from teammates and coaches, as well as their own self-efficacy beliefs. Both other efficacy and RISE impact many outcomes other than self-efficacy beliefs. The original conception of the model outlined that RISE and other efficacy influence self-fulfilling prophecies, coping efforts in difficult tasks, skill development, social support beliefs, relationship satisfaction, and relationship persistence (Lent & Lopez, 2002).

Generally speaking, the model suggests that those who have more positive RISE and other efficacy beliefs are likely to have higher self-efficacy beliefs, compared to those with lower RISE and other efficacy beliefs. This would suggest that athletes in more positive sport relationships (whether it be with a coach, peer, or parent) are likely to have higher self-efficacy beliefs. However, researchers are still uncertain about the pathway in which the relational efficacy beliefs might influence self-efficacy. The original conception of the relational efficacy model hypothesizes that self-efficacy influences RISE beliefs and that RISE beliefs reciprocally influence self-efficacy beliefs (Lent & Lopez, 2002). RISE and other efficacy also have a reciprocal relationship where RISE impacts other efficacy (through impression management, e.g., an athlete trying to show their best selves), and other efficacy impacts RISE beliefs (through social cues sent from the target individual). The original model proposes that RISE sits between other efficacy and self-efficacy and has reciprocal relationships with both other efficacy and self-efficacy. However, this model has rarely been tested in the same way that it was proposed. Often RISE and other efficacy are both used as sources of self-efficacy beliefs in a cross sectional manner. This shift in methods removes the reciprocal nature of the relational efficacy beliefs and uses them as unidirectional predictors. This change in modeling approach is likely employed for cleaner, more parsimonious models; however, future work should examine these pathways experimentally and with more sophisticated modeling approaches.

Sources of Relational Efficacy

Sources of RISE

There are many interpersonal interactions, exchanges, and experiences that can shape one's RISE and other efficacy beliefs in a social context. Lent and Lopez (2002) hypothesized that RISE beliefs would largely be a function of an individual's appraisal of their partners' feedback and the level of self-efficacy that one has in a particular task. Feedback from partners can be verbal or nonverbal. In the sports context, an athlete might perceive that a coach or teammate doesn't give enough feedback, doesn't provide direct feedback, or there is too much variability in the amount of support. All of these factors affect the development of RISE beliefs in an interpersonal context. Self-efficacy might influence RISE beliefs as a buffer against overly positive or negative partner or coach communication. If an athlete has high self-efficacy, but has very negative interactions with their teammate, the high self-efficacy might mitigate any negative effects from the low RISE beliefs.

Research in sport psychology has corroborated some of these sources and added additional information for researchers and practitioners. Jackson and colleagues (2008) interviewed international level athlete dyads to better understand the development of relational efficacy perceptions. The interviews uncovered three categories that represented sources of RISE, including perceptions regarding oneself, perceptions regarding the teammate, and perceptions regarding the dyad. To further elucidate the theme of perceptions regarding oneself, the authors noted that it included self-efficacy beliefs, past mastery experiences (a traditional self-efficacy source), motivation, and physiological factors. Verbal behavior, nonverbal behavior, and affective states when with the partner were three sources that

reflect the perceptions regarding the teammate. Lastly, experience with the partner and the past mastery experiences with the teammate both were minor themes that represented perceptions regarding the dyad (Jackson et al., 2008).

Sources of Other Efficacy

In the original conception of the relational efficacy model, other efficacy was hypothesized to be a function of the perceptions of the other individual's performance, beliefs about the other person's efficacy, cultural stereotypes, social cues, and third party views of the other person's ability to perform (Lent & Lopez, 2002). Other efficacy is developed based on the known performance level of the individual and relevant social cues that could be perceived with interpersonal interactions or in consultation with other individuals (e.g., a previous teammate, coach, or parent). Long lasting interpersonal relationships will likely have more stable sources of other efficacy because there are more past experiences from which the participants can draw information.

Interviewing elite athlete dyads, Jackson and colleagues (2008) found some similar sources of other efficacy and some unique sources as well. Two themes emerged that focused on perceptions regarding the partner and perceptions regarding the dyad. Sources of other efficacy that came from perceptions regarding the partner included past performances with the partner, third party comments, comparisons with past partners, comparisons with similar athletes, other athlete motivation, and physiological factors (Jackson et al., 2008). For perceptions regarding the dyad, both past experiences with the dyad and experience together were main sources in the development of other efficacy beliefs. When developing other efficacy beliefs in a sporting context, it appears that athletes rely heavily on comparing their partner with others in the sport or from their past experience in sport. Also, athletes appear to rely heavily on others (e.g., word of mouth, recommendations) when developing other efficacy perceptions.

Research on Relational Efficacy in Sport

Research on Relational Efficacy in Teammate Relationships

Athlete relationships are defined by a large number of factors. A doubles tennis pair is likely to behave differently and have different relationships than a team of 25 soccer players. However, there are likely some similarities that are worth considering when examining teams. In the studies presented for the rest of this chapter, please keep in mind the unique social context in which all of these teams exist. Dyad relationships are likely to be much closer and have stronger relational ties compared to larger teams.

The original research into relational efficacy beliefs in sport involved interviews of athlete dyads to understand the antecedents to self-efficacy, other efficacy, and RISE (Jackson et al., 2008). This seminal work helped the field better understand the antecedents and outcomes of the relational efficacy model. In the previous section, many of the antecedents were discussed. In addition to those findings, Jackson and colleagues (2008) noted that other efficacy beliefs can contribute to relationship persistence, relationship termination, relationship satisfaction, partner selection, as well as a host of other intrapersonal outcomes. In dyadic relationships, RISE contributed to the development of most of the same outcomes at the intra and interpersonal levels. Overall, positive RISE and other efficacy beliefs appear to have a positive impact on self-efficacy beliefs, as well as behavioral and affective outcomes that are known to impact participation in sports (Jackson et al., 2014).

Research on Relational Efficacy in Coach-Athlete Relationships

Relational efficacy has been a new addition to the already well studied coach and athlete relationship literature. However, through studying the dyadic relationship and the interdependence between coaches and athletes, researchers can better understand how the relationship functions for

both parties involved. Jackson et al. (2010) examined intact coach and athlete dyads and found that RISE, other efficacy, and self-efficacy often played important roles in perceptions of closeness in the relationship, commitment to the relationship, and behavior that are complementarity during the relationship.

In a separate project, researchers investigated how self-efficacy, RISE, and other efficacy cluster for athletes when asked about their coach. Interestingly, researchers noted four unique cluster profiles: one had all high efficacy beliefs, one had all moderate efficacy, one had all low efficacy, and a small group was labeled as unsatisfied (Jackson et al., 2011). This result provides evidence (regardless of the causal pathway in which the beliefs occur) that when athletes have high relational efficacy beliefs, their self-efficacy beliefs are also likely to be high (and the same at the moderate and low levels of relational efficacy). In youth sport, RISE has been shown to mediate the relationship between coaching behavior and perceptions of self-efficacy. Specifically, coaching behaviors in youth sport informed the youth athletes' RISE beliefs, which lead to changes in overall self-efficacy (Saville & Bray, 2016). Overall, the relational efficacy framework can provide some information about how the coaches and athletes develop a relationship and how the relationship endures over time.



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Enhancing Relational Efficacy in Sport

While relational efficacy is one of the newer areas covered in this chapter, there have been many advances in the understanding of relational efficacy beliefs in sport during the last decade. When thinking about how to enhance relational efficacy, it is worth going back to the research that covered the antecedents of both RISE and other efficacy. Lent and Lopez (2002) proposed that RISE developed through the processing of the verbal and nonverbal social cues that occur during an exchange. Saville and Bray (2016) asked youth hockey players to describe how the coach lets the athlete know they have confidence in them. Some of the responses included, “puts me in during important situations”, “tells me I can do it, even when I’m not so sure I can”, “gives me the ‘you can do it’ look”, and “takes the time to show me what I did wrong when I make a mistake.” (see Saville & Bray, 2016 for a full list). Many of the exchanges, both verbal and nonverbal, that coaches and athletes give to each other provide information

for the formation of RISE beliefs. Being encouraging to athletes, while also holding them to a high standard of performance develops RISE beliefs.

Other efficacy is slightly trickier to develop because some of the sources are outside the immediate interpersonal relationship. Other efficacy can be enhanced through comparison mechanisms (either with other coaches or athletes), third party comments, past performance with the athlete, as well as motivation and physiological factors (Jackson et al., 2008). It is hard for an athlete (or a coach) to alter others' perceptions of themselves. However, it is reasonable to focus on creating positive past performances and providing a space for athletes to succeed, while under challenging circumstances. It is important to create positive social and sport related experiences to enhance motivation and other psychological factors. Focusing on creating a caring environment that fosters improvement and skill development will enhance perceptions of other efficacy between coaches and athletes or athletes and their peers.

Learning Exercises

4. How does RISE differ from other efficacy?
5. What are the sources of RISE and other efficacy?
6. If Sally thinks Coach Tom has high confidence in her ability to make shots in clutch situations, what type of efficacy belief does this represent?

Collective Efficacy

In sport, successful performance is often judged by the performance of the team and not just an individual athlete. A team in the context of sport is defined as a group of two or more people, focused on the same goals and objectives, who are personally and instrumentally interdependent (Carron et al., 2005). Their interdependence includes the perceptions teammates have about their team, whether it is the social structure or contributions to overall performance. Self-efficacy refers to one's individual beliefs about one's ability to successfully perform a specific task. When athletes are part of a team, individuals will also have beliefs about their team's ability, as a whole, to successfully complete the task at hand. Bandura first defined this concept as collective efficacy, "a group's shared belief in their conjoint capabilities to organize and execute the courses of action required to produce given levels of attainments." (Bandura, 1997, p. 476).

There is some debate about how collective efficacy is socially constructed, defined, and measured in the sport psychology literature (Maddux, 1999). One point of view stresses the importance of the group's shared belief in their ability to allocate, coordinate, and integrate to successfully perform collective tasks (Zaccaro et al., 1995). These authors suggest that beliefs about the ability to allocate, coordinate and integrate should be directly measured. While those researchers who advocate for Bandura's conceptualization of collective efficacy, believe that teams automatically consider the coordination and interaction when forming their beliefs about the team's capabilities (Feltz et al., 2008). Short and colleagues have suggested that collective efficacy is a multidimensional construct consisting of five dimensions: ability, effort, persistence, preparation, and unity (Short & Short, 2004; Short et al., 2005).

Collective efficacy is not the summation of each individual athlete's self-efficacy beliefs, but rather the athlete's belief in the team's ability. Self and collective efficacy beliefs can differ for athletes.

For example, an athlete like LeBron James (NBA allstar) can have very high self-efficacy in basketball but play for a basketball team in which he has low collective efficacy (e.g., 2018 L.A. Lakers). Bandura (1997) recommends that athletes need high efficacy beliefs in their own ability as well as the team's ability to perform at the highest level. Research has shown that the measurement of collective efficacy differs by definition and there are methodological issues with collective efficacy involving the unit of analysis. See Myers and Feltz (2007) for a thorough explanation of methodological issues with the study of collective efficacy in sport.

Sources of Collective Efficacy

Some sources of collective efficacy are thought to be similar to the sources of self-efficacy previously described (e.g., performance accomplishments, vicarious experiences, verbal persuasion), with some unique sources related to being part of a team. The process in which athletes combine and weigh various sources of information about the team's ability may involve more complex socially and situationally mediated interactions than do sources of self-efficacy (Bandura, 1997). The most common sources of collective efficacy are described below in categories of individual and team sources. Selection and emphasis of these individual and team sources may change over the course of a season, even if the level of collective efficacy remains relatively consistent (Chase et al., 2003; Magyar et al., 2004).

Individual Sources

Individual sources are variables that athletes perceive to be more self-determined than team determined. Perceived importance of the task, task difficulty, conception of ability, task efficacy, role efficacy, verbal persuasion (e.g., self-talk), and perceived control are examples of individual sources of collective efficacy noted in the literature (Feltz et al., 2008). Athletes will appraise sources in determining the team's ability to successfully complete the task. For example, games that are not viewed as important in the preseason or nonconference schedule might not produce the same amount of incentive for athletes as games perceived as very important, such as the conference championship game. When athletes conceive of ability as a fixed entity, view the task as too difficult or out of their control, then they may have a weaker sense of collective efficacy. Verbal persuasion in the form of self-talk has the same tenets for collective efficacy beliefs as self-efficacy. Task efficacy and role efficacy have been suggested to be a predictor of collective efficacy, especially at the end of the competitive season when athletes have more experience with and knowledge about the team.

Team Sources

Team sources involve variables that have more to do with the team environment or team determined factors. Past performance of the team will be the best predictor of collective efficacy, with practice performance sometimes being more salient than game performance (Chase et al., 2003). This research also suggested that teams may form collective efficacy beliefs around the idea that the team will bounce back from a poor performance or the team is due to perform better after an unusually poor performance. Some teams may be more optimistic during the preseason and have a sense of high expectation based upon team potential and experience of the team last season (e.g., volleyball team has 5 of the 6 starters returning). Some interesting research by Fransen and colleagues (2014) suggests that in soccer and basketball, sources that are processed during the game are more predictive of collective efficacy than sources selected before the game. Teams will make social comparisons with other teams and adjust their collective efficacy accordingly. For example, if Team A views Team B as similar in ability and sees Team B as having a successful performance during league play, then Team A may have increased collective efficacy about their team when they begin league play. High efficacy leader behavior from team captains or other team leaders in the form of verbal persuasion or modeling can increase collective efficacy, whereas nonefficacious coaches can lower collective efficacy in their teams

(Fransen et al., 2017). Teams that are more cohesive, especially in task cohesion, tend to have higher collective efficacy. Research has found that a motivational climate that has at least a moderate or higher mastery-oriented climate is often associated with higher collective efficacy. Overall, individual and team sources often work together to influence the formation of collective efficacy beliefs, which then influence performance, feelings and thought patterns.

Research on Collective Efficacy in Sport

Influence of Collective Efficacy on Performance

Teams with higher collective efficacy tend to perform better and accomplish their goals more so than if they have lower collective efficacy. In turn, performance accomplishments serve as a source of collective efficacy. The reciprocal nature of performance and efficacy beliefs positively or negatively influencing each other is often referred to as spirals (e.g., spiraling up or spiraling down; Fransen et al., 2017). Some of the first research to examine the relationship between collective efficacy and performance was conducted in laboratory settings, with teams artificially constructed in experiments. In general, these studies found that collective efficacy did predict performance; however, the studies were not viewed as realistic or easily applied to real sport teams. Several field studies of intact teams were conducted by Feltz and colleagues (Feltz & Lirgg, 1998; Myers, Feltz, & Short, 2004; Myers, Payment, & Feltz, 2004). Their studies with existing teams in real competitions repeatedly found that collective efficacy predicted performance, and in turn performance predicted collective efficacy for different men's and women's sports. In a comprehensive meta-analysis of 96 studies, Stajkovic et al. (2009) found that collective efficacy consistently predicted performance. One common finding amongst all the studies was the more interdependence of the team, the stronger collective efficacy beliefs predicted performance. Keep in mind that this relationship between collective efficacy and performance can spiral up in a positive direction or spiral down in a negative direction.

Influence of Collective Efficacy on Affect, Behavior, and Cognition

Collective efficacy also influences what athletes choose to do as a team, how much effort they put forth, the goals they set, and their persistence when efforts seem to fail (Bandura, 1997). Teams can hold collective beliefs about their team's ability to maintain composure when the game is on the line or to control their worry if they fall behind by a lot of points. Some other common variables influenced by collective efficacy are anxiety, satisfaction, team cohesion, teamwork, attributions, and motivation (Chow & Feltz, 2008; Heuzé et al., 2006). And, like positive and negative performance spirals, the same positive and negative spirals can happen with collective feelings, thoughts, and efficacy beliefs in teams.

Enhancing Collective Efficacy in Sport

Coaches and athletes are aware of the positive relationship between collective efficacy and performance, feelings, and thought patterns. Although some may think that collective efficacy would be enhanced by simply increasing self-efficacy, researchers know that strategies to enhance collective efficacy need to be more specific to the team, as a result of complex interactions between teammates and team play (Feltz et al., 2008). Therefore, we recommend understanding the context of the team, type of sport, amount of interdependence among teammates, and preferences of the team when targeting which sources of collective efficacy to enhance. For example, from the description of individual and team sources, collective efficacy can be enhanced using the following five strategies.

Provide Success Performance Experiences

Providing successful past performance should be the primary focus and there are several methods to do this. In practice, and especially during the early stages of forming the team, the coach or team leader should modify the difficulty of the task, drill, or competition. Early success with step by step

progressions from simple to more difficult simulations of competitive situations will build collective efficacy. Prior to competitions, in practice or pregame warmup, coaches should include those drills that the team favors and is a strength. Lastly, performance success should not be defined by wins and losses. Team leaders can help redefine the meaning of success for the team by setting performance goals that are specific to a team's growth and development. Achieving those goals can be beneficial to collective efficacy over the course of a season.

Encourage the Team

As stated earlier, coaches provide an important source of efficacy information for teams. There is a plethora of research about coaching effectiveness and the impact coaching feedback, reinforcement, and nonverbal behaviors have on teams. In general, the words and actions of the coach should be viewed as encouragement, have a positive tone, and include information about how to improve performance. Having a positive coach and athlete relationship can improve the team's collective efficacy (Hampson & Jowett, 2014). Encouragement in the form of self-talk or team talk among teammates should also be positive. Depending on the age of the athletes, coaches should monitor overinvolvement of team parents. Youth sport teams can be negatively impacted and lose collective efficacy if parents become too negative or critical about the coach or teammates. One of the best types of encouragement is to reward effort. Effort is controllable, as opposed to a lot of uncontrollable variables that teams face, such as the ability of the opponent, the game officials, the weather, injuries, or illness.

Use Appropriate Comparisons with Other Team

So much of team sports involve one team being compared to another team. While this comparison is hard to escape, coaches should attempt to focus teams' judgments on self-comparisons. For example, team leaders could clearly state strengths and weaknesses and a plan for how to improve the team. Practices and games could be video recorded throughout the season. Watching good performances and positive interactions among the team can build collective efficacy (Bruton et al., 2014). Another strategy could be to set mastery goals that specify targets for the team to accomplish. For example, basketball teams may target turnover/assist ratios, comparing their second 10 games to the first 10 games of the season. Realistic role models who represent the goals that teams seek to achieve may be emphasized. Lastly, failures by the team should not be blamed on others, such as opponents or officials. Teams should own the failure, set new mastery goals, and direct effort to improve.

Build Team Cohesion

Team cohesion is typically improved by focusing on social cohesion and task cohesion in teams. Social cohesion will benefit from off the field activities where teammates get to know each other better. Team leaders may use team building activities to promote cohesion and identify team leaders. Social cohesion must stay positive and avoid a negative group think of questionable moral behavior or hazing that is sometimes falsely believed to improve team bonding. Task cohesion is best built by clearly identifying team goals and the role for each team member to contribute to the task. In turn, having high role efficacy can build collective efficacy and task cohesion.

Establish a Positive Productive Culture and Team Environment

A positive productive team culture will look different among teams in different sports but the strategies to build the culture are similar. Coaches should help athletes define, discuss, and hold teammates accountable to the culture deemed important. Understanding the importance of any team task is needed for proper incentive and sustained motivation. Coaches can work with athletes so they learn to make stable, controllable attributions about success and failure. The best motivational climate

has both a mastery and performance orientation established in practice and reinforced in competitions, with an emphasis on a mastery climate. For example, a cross country coach who recognizes every runner on the team who improved their race time and contributed to the team effort, demonstrates to the team that improvement is important. Positive leader behaviors by the coach and team members will help set the culture of the team and provide a positive team environment.

Team leaders should incorporate all of these strategies into their interactions with the team. Coaches and team leaders would do well to remember that sources of collective efficacy are combined and weighed, selected or emphasized differently over the course of a season, during preseason, or in the offseason. By using these strategies and making them a part of the team culture, over time teams will compete with a higher level of persistence and effort. Team performances will be better, and as a consequence, everyone will notice more satisfaction and higher collective efficacy.

Learning Exercises

7. How does collective efficacy differ from the summation of each team member's self-efficacy beliefs?
8. What are the sources of collective efficacy?
9. Describe the reciprocal relationship between collective efficacy and performance accomplishments and explain how this can produce a spiral?

Conclusion

Research and practical applications, based on self-efficacy theory in sport, have continued to grow over the four decades since Bandura's (1977) seminal paper. This work has expanded to include collective and relational efficacy. The findings from research on efficacy beliefs and sport performance is robust. Other areas of research in sport self-efficacy emerged that have contributed to the expanding knowledge base in the athletic realm but are not included in this chapter. These include coaching efficacy (Feltz et al., 1999), referee efficacy of sports officials (Guillén & Feltz, 2011), administrative and career self-efficacy in sports organizations (Machida et al., 2016) and efficacy beliefs during the learning or training phase of performance (Feltz & Wood, 2009). These topics and the ones we have described will continue to be explored and expanded to further advance theory and applied practice related to efficacy beliefs in sport.

Learning Exercises

10. Think back to your own sport or physical activity experience where you felt highly efficacious. What made you feel efficacious during that experience? List five experiences that made you feel more efficacious and then identify where those experiences would fit within the efficacy models discussed in the chapter.
11. Past performance is a particularly influential source of efficacy beliefs, but we can't all win all the time. In fact, losing is a common and almost inevitable experience in sports. Reflect on your own sport experience and recall how losing affected your efficacy beliefs. How did you manage to maintain or regain your efficacy? Now, imagine that you are coaching an athlete or team that has recently experienced numerous consecutive losses in competition. What can you, as the coach, do to help reduce the negative impact of competitive losses on the efficacy of your athletes? Identify at least 3 specific ways that you could increase efficacy beliefs in the face of consistent performance losses.
12. Coaching an interdependent team involves managing the self-efficacy, relational efficacy, and collective efficacy beliefs of each team member. Detail at least 2 strategies you would use to increase each type of efficacy among each of your athletes. Do you think any of these types of efficacy beliefs are more important in interdependent team sports than other types? Why or why not?

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