

Part 4

The Self and the Team

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Psychology of Group Dynamics

Key Considerations and Recent Developments

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The existence of groups pervades many aspects of human life. They shape how we develop, are nurtured, and socialize through families and close friendships. They influence how we learn, develop knowledge, and acquire key competencies, with classes used as the predominant organizational structure within schools and most educational institutions. They also affect how many people work, through employment in project teams, health care units (involving doctors, nurses, and various other care providers), aviation crews, military platoons, police deployment units, and so on (McEwan, Ruissen, Eys, Zumbo, & Beauchamp, 2017). Of particular relevance to this chapter, groups also play a major role within both sport and exercise settings. For example, in sport, athletes are often recruited to perform within teams. In exercise programs (Harden et al., 2015), as well as rehabilitation (Raymond et al., 2016) and chronic disease prevention and management programs (Gavarkovs, Burke, & Petrella, 2016), groups are often used to support individual members in sustaining their long-term involvement in health-enhancing physical activity.

The study of groups has a rich history within the field of psychology more broadly, and specifically within sport and exercise psychology. Around the turn of the 20th century, several researchers in both Europe and North America became interested in what happens when individuals perform tasks alongside, and in the presence of, other people. For example, between 1882 and 1887, the French engineer Max Ringelmann conducted a series of investigations into the performance of workers pulling a load either alone or with others, with this work eventually being published several years later (Ringelmann, 1913; see also Kravitz & Martin, 1986). He found that as group size increases (on a rope-pulling task), the relative

contribution in terms of effort per person decreases. Around the same time, on the other side of the Atlantic, the American psychologist Norman Triplett observed that cyclists pedal faster when in the presence of others than when alone (Triplett, 1898, Part I). He subsequently conducted a well-known laboratory-based experiment (Triplett, 1898, Part II) designed to examine this “social facilitation effect” (see also Chapter 17), with children performing a physical (fishing reel) task. Although some have suggested that Triplett’s conclusions were overstated (Stroebe, 2012), this work was seminal in contributing to the fields of both social and sport psychology by highlighting the importance of interpersonal and group influences. Notwithstanding these early contributions, the concerted and systematic study of group processes can rightly be attributed to the pioneering work of Kurt Lewin and his colleagues (Lewin, 1947, 1951; Lewin, Lippitt, & White, 1939). It was Lewin who first coined the term “Group Dynamics” to reflect both a systematic research focus on “groups” and also recognize that group processes are dynamic—that is, they constantly evolve in relation to both the intra-group and external factors that are inherent within the group environment.

In the years following World War II, and as the field of social psychology began to grow, the occasional study emerged with a focus on sport or physical activity groups. These included Sherif, Harvey, White, Hood, and Sherif’s (1961) Robber’s Cave experiment that examined intergroup conflict and conflict resolution among boys involved in a summer camp (several of the activities used in the experiment involved sports such as tug-o-war, touch football, and baseball), as well as Fiedler, Hartman, and Rudin’s (1952) classic work on team leadership that involved high school basketball teams. From these origins, investigation into the psychology of group processes in physical activity accelerated, with a marked

expansion of research over the past three decades in particular. In this chapter, we provide an overview of some of the major theoretical and empirical contributions as well as contemporary perspectives that have emerged in recent years as they pertain to the study of group processes in both sport and physical activity settings. In so doing, we also identify some of the potential gaps in the literature as well as opportunities for future research.

Defining Groups

Groups have been defined in a number of ways within the broader social psychology and sport psychology literatures. In some instances, the term “group” has been used synonymously with the term “team.” Perhaps the clearest delineation of these two terms was provided by Forsyth (2014), who considered a group to represent “two or more individuals who are connected by and within relationships” (p. 4), and a team to represent a particular type of group that is structured and pursues collective goals through highly coordinated interactions. That is, while all groups share certain key characteristics (e.g., two or more members, Williams, 2010; common perceptions of group membership, Brown, 1988; interpersonal communication; Toseland, Jones, & Gellis, 2004), it is the pursuit of collective goals and a common purpose through coordinated interaction that sets teams apart from other types of groups such as exercise or school (i.e., academic) classes (cf. Forsyth, 2014). Although exercise and school classes, for example, may display several characteristics of teams, members of such groups tend not to be concerned to the same extent with conjoint functioning and achieving collective outcomes (e.g., collective performance). Instead, they tend to be concerned to a greater extent with individual goal attainment (e.g., personal weight loss/fitness, academic success).

Group Influences in Sport and Exercise

As research within the field of sport and exercise psychology has grown, the impact of a range of group influences on both individual and group outcomes has become increasingly apparent. For example, in spite of the intuitive belief that many people hold that having more individual talent on sport teams is linearly associated with team performance (Swaab, Schaerer, Anicich, Ronay, & Galinsky, 2014, Studies 1a and 1b), recent evidence from professional sport indicates that one can in fact have too much talent on a sports team (Swaab et al., studies 2 and 3). Specifically, Swaab et al. (2014) found that in international soccer teams qualifying for the 2010 and 2014 FIFA World Cups (Study 2) and in the National Basketball Association (NBA, Study 3) team

performance increased to a certain point with “more talent,” but then the marginal benefits of intra-team talent decreased and, in a curvilinear manner, turned negative. In seeking to understand what mechanisms might account for this effect, Swaab et al. (2014, study 3) also examined the nature of team coordination in the NBA as a mediator of the relations between intra-team talent and team performance. It was found that professional basketball teams with very high levels of talent underperformed because they coordinated less effectively. Findings such as these point to the fact that on teams characterized by high levels of interdependence, such as basketball or soccer teams, where members must concertedly work together to achieve their goals, group dynamics are critical and play a major role beyond the contribution of selecting a team of individual “stars.”

Cohesion: Conceptual Bases and Observational Findings

Cohesion in Sport Teams

So, what are some of the major group processes that either underpin or enhance intra-team functioning in sport and physical activity groups? One of the foremost group-related constructs to receive research attention within the sport domain is group cohesion. Group cohesion is “a dynamic process which is reflected in the tendency for a group to stick together and remain united in the pursuit of its instrumental objectives and/or for the satisfaction of member affective needs” (Carron, Brawley, & Widmeyer, 1998, p. 213). A considerable body of research has examined group cohesion in sport, the vast majority of which has been based on Carron, Widmeyer, and Brawley’s (1985) multidimensional conceptualization. Specifically, Carron et al. (1985) considered cohesion to include task as well as social dimensions, with task cohesion representing the extent to which a group is united around its instrumental activities (i.e., task pursuit within team practices and competition) and social cohesion reflecting the extent to which members come together around social activities and foster social relationships. In addition, they also considered cohesion to include an individual-level component that reflects an individual team member’s affective states and motives that attract him or her to the group, as well as a group-level component that reflects perceptions about how united a given group is, as a whole. When taken together, these task and social dimensions were conceptualized as combining with both the individual-level and group-level components to result in four distinct dimensions of cohesion. These include an Individual’s Attraction to the Group-Task (ATG-T; individual level + task focus), Individual’s Attraction to the Group-Social (ATG-S; individual level + social focus), Group

Integration-Task (GI-T; group level + task focus), and Group Integration-Social (GI-S; group level + social focus). This four-dimensional model of cohesion was used to develop the Group Environment Questionnaire (GEQ) (Carron et al., 1985), which has been widely used to study cohesion in relation to a range of salient environmental, personal, leadership, and group correlates in sport (Carron, Shapcott, & Burke, 2007).

One of the most pervasive questions in the study of cohesion corresponds to the relationships between cohesion and team performance. Two meta-analyses conducted in sport settings shed intriguing light on this relationship. In a meta-analysis that involved 46 studies that examined the relationships between group cohesion and team success, Carron, Colman, Wheeler, and Stevens (2002) found that both social and task cohesion were associated with higher levels of team performance, with effect sizes in the medium-to-large range. Of note, they also found that the effects of cohesion in relation to team performance were evident among both highly interdependent teams (e.g., basketball, ice-hockey), as well as co-acting teams, whereby members represent a team but ostensibly perform individually (e.g., swimming, golf). In a more recent meta-analysis applied to studies conducted between 2000 and 2010, Filho, Dobersek, Gershgoren, Becker, and Tenenbaum (2014) found support for a strong positive relationship between task cohesion and team performance (i.e., large effect size) and a small positive relationship between social cohesion and team performance (i.e., small effect size). In addition to this correlational evidence, some evidence exists that provides an explanation for *how* cohesion might bring about improvements in team performance. For example, in a study of college-aged soccer players, Filho, Tenenbaum, and Yang (2015) found that when teams are more cohesive they tend to develop team mental models (i.e., team schemas related to the collective task and team-relevant knowledge of team members; see also Chapter 28) that subsequently allow teams to be more confident in their collective capabilities (i.e., higher collective efficacy).

While cohesion tends to be associated with improvements in team performance, a critical question corresponds to the potential bi-directional nature of the relations between cohesion and performance. In a prominent meta-analysis that examined the bi-directional relationships between cohesion and team performance in a diverse range of settings (including sport as well as military, organizational settings, artificial groups), Mullen and Copper (1994) found that although cohesion was indeed related to subsequent team performance, there was stronger evidence for reverse directionality in which performance was associated with subsequent cohesion. That is, when teams succeed, this success

tends to bring teams closer together—this relationship is stronger than the effects of cohesion leading to team success. A recent study by Benson, Šiška, Eys, Priklerová, and Slepíčka (2016) tested the bidirectional relations between cohesion and performance among elite youth soccer and handball teams over the course of a season. Interestingly, they found that while performance predicted both task and social cohesion over the course of the season, a reciprocal relationship was not found. That is, neither the task nor social dimensions of cohesion were prospectively associated with improvements in team performance.

While it is certainly understandable that research in sport would be particularly concerned with the performance-to-cohesion and cohesion-to-performance relationships, especially given the pervasive importance ascribed to understanding the determinants of team success, it is noteworthy that cohesion has also been found to be associated with a number of other beneficial consequences. For example, in a study with high school sport teams, Bruner, Eys, Wilson, and Côté (2014) found that cohesion was positively associated with various measures of positive youth development (PYD). Specifically, when adolescent sport teams displayed higher levels of task and social cohesion, their members had higher indices of personal and social skills, displayed greater initiative, and use of goal setting. In a separate study by Bruner, Boardley, and Côté (2014) involving male and female youth sport participants, task and social cohesion were associated with different measures of player moral behavior such as the provision of player encouragement and offering constructive feedback (see also Chapter 18). These findings suggest that cohesion might have important developmental implications, beyond the contribution of whether cohesion affects, or is affected by, team performance.

Cohesion in Exercise Classes

In addition to the extensive body of research that has been applied to examining cohesion within sport settings, several studies have also examined the correlates of cohesion within exercise settings as well. These have included structured exercise classes (e.g., Spink & Carron, 1992) as well as other types of physical activity groups such those involved in walking programs (e.g., Burke, Shapcott, Carron, Bradshaw, & Estabrooks, 2010). In a meta-analysis, involving 49,948 participants from 87 studies, that examined the relationships between exercise group cohesion and member participation, Carron, Hausenblas, and Mack (1996) found that task cohesion had a medium-to-large effect in relation to individual adherence behavior (to the respective group-based exercise programs).

While most of the research that has sought to examine the predictive utility of cohesion within exercise settings

has centered on healthy/non-clinical populations, some research has also examined cohesion in relation to exercise compliance within clinical settings. For example, Fraser and Spink (2002) examined the predictive nature of group cohesion among a sample of 49 adults with different medical conditions (e.g., diabetes, high blood pressure, arthritis, increased body weight, chronic lung disease, abnormal cholesterol, and osteoporosis) who were, for health reasons, required to exercise within a 12-week program. They found that higher levels of task cohesion (ATG-T) were associated with improved program attendance over the course of the program. As an explanation for why ATG-T was associated with better adherence, Fraser and Spink contended that (1) individuals in their study were instructed to exercise for health reasons and so had a greater task motive than a social one, and (2) in new groups, individuals are more likely to endorse individual reasons for exercise than group reasons. In another study, Caperchione and Mummery (2007) sought to examine potential mechanisms through which cohesion might be able to bring about improvements in adherence behavior among a sample of inactive older adults over the age of 50, most of whom (68%) had at least one chronic disease (high blood pressure, diabetes, cardiovascular disease, arthritis, or depression/anxiety). They found that when physical activity groups were cohesive, this was positively related to participants' intentions to exercise, which were mediated by their attitudes and perceptions of behavioral control.

In light of the fairly consistent finding that higher levels of cohesion tend to be associated with greater attendance within non-clinical and clinical group-based exercise settings, research has concertedly sought to understand the antecedents/determinants of cohesion within the context of exercise. Some research has demonstrated that the more similar members tend to be to each other (in terms of demographic characteristics) within exercise groups is related to both exercise group cohesion as well as adherence behavior (Dunlop & Beauchamp, 2011). Other work points to the importance of exercise instructors/leaders in promoting both class cohesion and members' sustained involvement in their respective programs. For example, Loughead, Colman, and Carron (2001) found that when exercise group instructors were motivated, perceived to be available, and enthusiastic, classes of older adult exercisers tended to be more task cohesive. In turn, when the group was perceived to be united around its task activities, members tended to adhere to those classes to a greater extent.

Notwithstanding the above findings that cohesion tends to be associated with improvements in behavioral engagement, in particular when reflected in measures of class adherence (Carron et al., 1996), a limitation of this literature corresponds to the way in which cohesion is

typically assessed within exercise contexts. Specifically, by most definitions (cf. Carron et al., 1998) cohesion is theorized to be a dynamic construct that changes over time, and yet this dynamic conceptualization is rarely examined. That is, while solid evidence exists for the reliability and validity of measures of exercise class cohesion (e.g., Estabrooks & Carron, 2000), it is the failure of researchers in general to assess the dynamic nature of cohesion over time that has prevented a fuller understanding of the role of cohesion within physical activity settings. In one study that tested this aspect of cohesion, Dunlop, Falk, and Beauchamp (2013) utilized a multi-level modeling framework to examine changes in exercise class cohesion over time among 395 exercisers from 46 programs. By collecting repeated measures of cohesion over the course of participants' respective programs, they found that mean levels of social cohesion changed significantly over time, whereas mean levels of task cohesion did not, with these patterns largely consistent across persons and groups. While these findings might be considered preliminary evidence (given the lack of research on the topic), this work suggests that within group-based exercise programs, social and task cohesion may display different trajectories over time. This may have implications for: (1) the way in which we understand cohesion to function and affect individual members, and (2) the manner in which interventions are potentially delivered to physical activity groups. In essence, it is critical that researchers examine intra-group changes in cohesion over time, as well as how these changes affect members' affiliative ties with their respective groups and indeed their behavioral engagement within those groups.

Cohesion: From Observation to Intervention

Building Teams in Sport Settings by Targeting Cohesion

Team building has been broadly described as "a method of helping the group to (a) increase effectiveness, (b) satisfy the needs of members, or (c) improve work conditions" (Brawley & Paskevich, 1997, pp. 13–14). In light of the consistent (albeit correlational) findings linking cohesion to performance in sport (described above), Carron, Spink, and Prapavessis (1997) suggested that the primary, or fundamental, mechanism of building teams is through fostering group cohesion. Specifically, they contended that "team building interventions are designed to improve team effectiveness by enhancing group cohesiveness...at the core of any team building program is the expectation that the intervention will produce a more unified group" (p. 62).

They subsequently presented a conceptual model for developing cohesion within team-building interventions in sport (Carron et al., 1997). This was adapted from

Carron and Spink's (1993) earlier model of team building in exercise, and involved a series of input variables, throughput variables, and cohesion as the final output. The input variables included the *group environment* which could be enhanced through activities designed to foster a sense of distinctiveness (from other teams) and togetherness (within one's own team), as well as *group structure*, which involved any activities designed to establish adaptive group norms and positional structure (e.g., role clarity). The throughput variables comprised various group processes that included interpersonal interaction/communication and individual member sacrifice. The final output variable within this model was conceptualized via the four dimensions of group cohesion within the Carron et al. (1985) conceptual model (i.e., ATG-T, ATG-S, GI-T, GI-S).

With a view to operationalizing this model, Carron and colleagues (Carron & Spink, 1993; Carron et al., 1997) also proposed a complementary four-stage applied team-building approach that explained how to develop cohesion. This model included (1) an *introductory* stage (providing the coach with an overview of the benefits of cohesion), (2) a *conceptual* stage (explaining the above input-throughput-output model), (3) a *practical* stage (interactive brainstorming session involving coaches to identify strategies to develop cohesion), and (4) an *intervention* stage (whereby the coach delivers the intervention). Carron et al. (1997) also recognized that while most coaches would ultimately be responsible for delivering the intervention (i.e., a direct approach), other agents such as a team sport psychologist might also be responsible for intervention delivery (i.e., indirect approach). This conceptual model (Carron & Spink, 1993; Carron et al., 1997) became particularly influential over the ensuing years. Indeed, this was reflected in a recent citation and genealogical analysis (Bruner, Eys, Beauchamp, & Côté, 2013), which also revealed that team building in sport has largely come to be considered as synonymous with developing cohesion.

So what is the empirical evidence for the efficacy of team-building interventions in sport? In a meta-analysis conducted 10 years ago, Martin, Carron, and Burke (2009) found that team-building interventions in sport have generally been very successful in bolstering different measures of team effectiveness. First, when all intervention studies within the review were considered together, those team-building interventions resulted in a medium-to-large effect in relation to measures of team performance, as well as large improvements in team member cognitions. However, these team-building interventions only resulted in small effects in relation to measures of social cohesion, and in fact had a non-significant effect in relation to measures of task cohesion. This finding challenges a core tenet presented by

Carron et al. (1997) that any team-building intervention designed to improve team effectiveness will have the development of cohesion as its basis.

The review by Martin et al. (2009) also highlighted that the most effective approaches to fostering team effectiveness were goal setting (large effect) and adventure-based programs (medium-sized effect). As a complement to these meta-analytic findings, it is worth noting the observation from Bruner et al.'s (2013) citation network and genealogical analysis that the literature informing team-building interventions in sport has been rather narrow, focusing primarily on approaches designed to foster cohesion, and often ignoring an extensive literature on team building that exists within other contexts such as organizational psychology. So what other approaches might exist to develop teams and foster team effectiveness (i.e., team building; Brawley & Paskevich, 1997)? Recently, Beauchamp, McEwan, and Waldhauser (2017) suggested that a broadened perspective on team building in sport is warranted; in particular, one that focuses on the development of *teamwork behaviors* to a greater extent. As we highlight later in this chapter, cohesion represents an important emergent state that stems *from* effective teamwork behaviors (cf. LePine, Piccolo, Jackson, Mathieu, & Saul, 2008); however, the two (teamwork versus cohesion) are conceptually different constructs, with interventions designed to foster teamwork consistently linked with improvements in both teamwork and team performance across a range of contexts (McEwan et al., 2017). Indeed, from an intervention perspective, efforts to develop teamwork behaviors may represent a more efficacious means of developing team effectiveness than efforts to solely develop cohesion. We discuss the nature of teamwork later in the chapter.

Targeting Cohesion within Exercise Groups: Intervention Evidence

In light of the consistent relationship that has been found between cohesion within exercise group contexts and participant adherence behavior (Carron et al., 1996), a number of researchers have sought to examine the efficacy of interventions designed to bolster cohesion and, in turn, improve adherence behaviors. Although the targets of these interventions have typically been exercise groups, and thus not teams per se, these interventions have broadly been described as "team-building" interventions in exercise settings (Brawley & Paskevich, 1997). The conceptual model developed by Carron and Spink (1993) that provided the impetus for much of the team-building research in sport (as described above) also provided the conceptual basis for many of these interventions in exercise settings. These have involved a wide range of populations from groups of young children

(Bruner & Spink, 2010, 2011) and university students (Spink & Carron, 1993), through to older adults (Estabrooks & Carron, 1999, study 2; Estabrooks, Fox, Doerksen, Bradshaw, & King, 2005).

In a study involving youth in an exercise club setting, Bruner and Spink (2011) randomized a sample of 122 youth to either a team building or control group condition. They found that following the delivery of the team-building intervention, which operationalized the Carron and Spink (1993) intervention model designed to enhance cohesion, those in the intervention condition displayed higher levels of class attendance and task satisfaction than those in the control condition, although no differences were found in terms of overall levels of drop-out. Using the same conceptual framework, Estabrooks and Carron (1999) found that older adults assigned to a team-building condition displayed improved adherence behaviors within a 6-week exercise program when compared to those in separate placebo and control group conditions. The placebo condition involved a standard group exercise class that received visits from a research assistant, who also took part with participants and showed interest in participant progress, whereas the control condition involved a standard group exercise class without any team-building intervention.

One of the major criticisms that has been levied at group-based physical activity interventions is that once the intervention has finished, participants are less likely to sustain their physical activity behavior in the longer term (King, Rejeski, & Buchner, 1998). With a view to addressing this issue, Estabrooks et al. (2011) sought to ascertain whether a physical activity intervention designed to target cohesion could be successfully implemented with insufficiently active adults within a research-to-practice partnership, with a view to ultimately support independent physical activity. The team-building intervention condition was compared to an “enhanced standard care” control condition. Those in the enhanced standard care control condition received a self-help guide to planning physical activity, along with information about local resources, and a telephone support session. Those in the intervention condition took part in a program titled *Move More!*, which was underpinned by Carron and Spink’s (1993) model, and sought to target key determinants of cohesion with the purpose of supporting participants’ sustained independent exercise behaviors after the initial group-based sessions had finished. Specifically, the targets for intervention included having small teams with a leader and record keeper, completing activities between group contact sessions, rewarding class attendance, fostering a sense of distinctiveness by creating team names, using team goal setting, cooperation, and enabling interpersonal interaction. The intervention was limited to two

group visits (led by two Health Educators), each of which lasted two hours and were supplemented with one follow-up telephone call. In addition to its overall focus on developing group cohesion, the *Move More!* intervention also sought to foster self-regulation skills designed to support independent physical activity beyond the group setting. This involved developing detailed physical activity goals, identifying barriers to those goals, strategies to overcome those barriers, as well as identifying resources (e.g., social support) that were available to participants to help them accomplish those goals. The results of this study revealed that after three months participants in both the intervention condition and control conditions increased their (self-reported) physical activity by over 75 minutes per week and did not differ from one another (Estabrooks et al., 2011). However, what was particularly revealing was that at the 6-month assessment there were significant differences between the two conditions, such that those in the intervention condition continued to increase their levels of physical activity, while those in the enhanced care comparison condition declined. When taken together, these results provide some support for the use of team-building methods as a means of supporting long-term independent exercise behavior.

In light of the health disparities that often exist within the United States involving women of color, Lee et al. (2011) developed a group-based intervention that was designed to support the adoption and maintenance of healthy diets as well as physical activity behavior among African American and Hispanic or Latina women in Texas. This intervention targeted physically inactive women between the ages of 25 and 60 (the recruited sample had a mean age of 44 years and tended to be overweight or obese with a mean BMI of 34.0; Lee et al., 2012), and was delivered through small groups, with cohesion targeted as the primary psychological mediator of behavior change. This study, titled *Health Is Power* (HIP), was a two-armed community-based randomized trial that took place over seven months. Specifically, following baseline assessments and randomization to either a physical activity or a fruit and vegetable intervention condition (month 1), participants took part in six intervention sessions over the next six months. Those intervention sessions involved women participating in small teams and harnessed various strategies designed to bolster group cohesion. These included developing a team name, establishing different team roles (e.g., team captain, secretary, caller), and engaging in activities designed to foster interpersonal interactions. The results revealed that both the physical activity and dietary intervention conditions displayed improvements in physical activity behavior and reductions in fat consumption (Lee et al., 2012). The authors also conducted

a mediation analysis to ascertain whether conceptions of group cohesion mediated the effects of condition assignment in relation to session adherence behavior (Smith-Ray, Mama, Reese-Smith, Estabrooks, & Lee., 2012). They found that both the task (ATG-T, GIT) and social (ATG-S, GIS) dimensions of class cohesion mediated the effects of intervention condition assignment in relation to subsequent adherence to the intervention classes. The authors concluded that both task and social components of cohesion play a substantive role in supporting adherence behaviors among women of color. Nevertheless, when the authors tested mediation models that examined the effects of the intervention in relation to total physical activity and dietary behavior at the end of the study (7 months), although overall physical activity and dietary behaviors improved, cohesion was not found to be a significant mediator (Lee et al., 2012). When taken together, these findings suggest that while cohesion accounted for adherence to the intervention classes, the overall long-term improvements in total physical activity and diet could not be explained by improvements in cohesion. This suggests that other (unmeasured) self-regulatory variables may have been triggered within the home environment (i.e., away from the intervention groups) and accounted for those behavioral improvements. Nevertheless, when all of the evidence to date surrounding the efficacy of interventions designed to target cohesion is considered, overall, these interventions have shown to be effective in sustaining people's involvement in regular physical activity.

Group-Mediated Cognitive Behavioral Approaches to Physical Activity Promotion

Another approach to physical activity and broader health promotion that shares many characteristics with the team-building model presented by Carron and Spink (1993), but displays two subtle but important differences, corresponds to the use of the Group-Mediated Cognitive Behavioral (GMCB) framework developed by Brawley and his colleagues (Brawley, Rejeski, & Lutes, 2000). Broadly conceived, the GMCB model uses the platform of "the group" to help participants acquire the cognitive behavioral skills required to self-regulate their own use of physical activity away from the group setting (Brawley, Flora, Locke, & Gierc, 2014). As a first point of difference, team-building interventions are typically concerned with supporting physical activity behavior that is pursued *within a group setting* (i.e., assessed via adherence to the group). The GMCB approach, on the other hand, primarily emphasizes the development of independent physical activity behavior, *away from the group*. That said, it should also be noted that some team-building interventions have also sought to foster the development of individual

self-regulatory skills and promote independent exercise away from the group setting (e.g., Estabrooks et al., 2011; Lee et al., 2012). As a second point of difference, team-building approaches (cf. Carron & Spink, 1993) typically involve the development and pursuit of group goals and utilize structural properties that exist within "sport" teams (e.g., team captain, assigning team roles); such group/team outcomes (e.g., group goal attainment) and structural properties are typically not emphasized within the GMCB approach.

In describing the conceptual bases that underpin the GMCB approach, Brawley et al. (2014) indicate that this model draws from social psychology, as well as principles from cognitive behavioral therapy and group psychotherapy. These approaches collectively point to the potential of groups to support therapeutic change among individuals while also providing an opportune platform to teach various self-regulatory skills, or what are generally referred to as "behavior change techniques" (cf. Michie et al., 2013). The GMCB approach is a stage-based model, which first involves individuals coming together to form groups that receive intensive support that is designed to foster positive interactions and promote a sense of group unity. Within this intensive educational phase, they learn and practice a range of self-regulatory skills that include the use of goal setting, monitoring, provision of feedback, self-efficacy enhancement, barrier management, and relapse prevention (Brawley et al., 2014). After this phase, a major goal of the second, or transition phase, is to wean participants off the group while ensuring that the targeted health behavior is maintained. The third (and final) phase involves participants (ideally) maintaining independent physical activity without support of program facilitators or other group members.

The GMCB approach to physical activity promotion has been applied in a diverse range of settings, with various populations that include obese children (Wilson et al., 2012), osteoarthritis patients (Focht et al., 2017), adult workers in corporate wellness settings (Kabaroff, Eys, Schinke, & Eger, 2013), patients with peripheral artery disease (Rejeski et al., 2014), new mothers (Cramp & Brawley, 2009), and obese older adults in poor cardiovascular health (Rejeski et al., 2011). In a review of the efficacy of GMCB physical activity interventions, Brawley et al. (2014) reported between-group effects for GMCB intervention groups (when compared to control groups), in relation to individual participant physical activity adherence behaviors, socio-cognitive outcomes (e.g., self-regulatory efficacy beliefs, outcome expectations), as well as physical functional outcomes (e.g., metabolic equivalent capacity, fitness assessments). The effect sizes (Cohen's *d* values) ranged from .36 to .86 for physical activity adherence behaviors, from .41 to .72 for socio-cognitive outcomes, and .19 to .49 for the physical

function outcomes. When taken together, the extant evidence suggests that the GMCB approach represents a viable and efficacious means of promoting individual physical activity behavior among a range of populations along with salient self-regulatory cognitions, as well as functional fitness outcomes.

Teamwork in Sport

Within interdependent sport teams, it is often assumed that team members need to work well together in order for those teams to reach their full potential. However, research specifically focused on *teamwork* has only recently begun to receive attention within the context of sport (Carron, Martin, & Loughead, 2012; McEwan & Beauchamp, 2014). Carron et al. (2012) contended that part of the reason for this paucity of research on teamwork was due to the absence of a clear conceptualization of this construct. In response, McEwan and Beauchamp (2014) conducted a theoretical and integrative review of the research on teamwork in other team contexts, as well as the limited research in sport settings, in order to provide a conceptual framework (see Figure 15.1) and working definition of teamwork in sport. This framework was informed by a prominent teamwork model by Rousseau, Aubé, and Savoie (2006) that was derived from a comprehensive analysis of 29 frameworks that have been used to study teamwork behaviors in other team contexts (e.g., aviation, business, health care). The McEwan and Beauchamp (2014) framework was also embedded within a broader Input-Mediators-Outcomes model of team effectiveness (see Mathieu, Maynard, Rapp, & Gilson, 2008) to illustrate how teamwork mediates the relationships between various team *inputs* (e.g., member characteristics, sport type, organizational influences) and *outcomes* (e.g., team performance, social identity, member enjoyment).

Emerging from their theoretical and integrative review, McEwan and Beauchamp (2014) defined teamwork as “a dynamic process involving a collaborative effort by team members to effectively carry out the independent and interdependent behaviors that are required to maximize a team’s likelihood of achieving its purposes” (p. 233). As reflected in this definition, and consistent with research in other contexts within team psychology (e.g., Ilgen, Hollenbeck, Johnson, & Jundt, 2005; LePine et al., 2008; Marks, Mathieu, & Zaccaro, 2001; Mathieu et al., 2008), teamwork involves observable *behaviors*. In contrast, *emergent states* include the range of cognitive, motivational, or affective states that emerge as by-products of a team’s successful (or unsuccessful) enactment of those teamwork behaviors. Examples of such emergent states include group cohesion and collective efficacy, which primarily derive from

successful teamwork but can also influence those teamwork behaviors through a feedback loop. Of critical note, it is important that researchers do not conflate emergent states such as cohesion or team potency with the very teamwork behaviors that enable the group to subsequently feel united or effective. As Figure 15.1 illustrates, the McEwan and Beauchamp (2014) model also includes a temporal component that recognizes that teamwork develops over time and goes through various episodic cycles (e.g., between competitions throughout a season). For example, teams with greater organizational resources, more competent coaches, and higher skilled players (i.e., team inputs) will likely demonstrate better teamwork (i.e., team process) compared to teams with inferior team inputs (Mathieu et al., 2008). Teams with better teamwork will subsequently be more likely to successfully achieve their objectives (i.e., team outcomes), which, in turn, can enhance team cohesion (i.e., emergent state) and even impact subsequent team inputs (such as by attracting additional skilled athletes and greater funding for the organization).

Stemming from their definition of teamwork, as well as their broader theoretical and integrative review, McEwan and Beauchamp (2014) further conceptualized teamwork as a multidimensional construct, which includes 14 dimensions—12 of these dimensions involve task-related behaviors related to regulation of team performance (RTP), while the other two dimensions include behaviors corresponding to the management of team maintenance (MTM). With regard to RTP, the framework highlights that effective teamwork not only involves behaviors enacted *during* a team task—including “communication,” “coordination,” and “cooperation” between members while they are competing in their sport (i.e., teamwork *execution*)—but also *before* and *after* the team task is enacted. Specifically, teamwork *preparation* involves defining the team’s purpose (i.e., “mission analysis”), identifying team goals (i.e., “goal specification”), and specifying team strategies (i.e., “planning”) in advance of a team task. Effective teamwork following team task execution involves first conducting a team *evaluation*, wherein teams examine how well they have performed (i.e., “performance monitoring”) as well as the various conditions that may have impacted their performance (i.e., “systems monitoring”). In response to this evaluation, teams may then carry out various *adjustments* where necessary, such as identifying why they have been unsuccessful and implementing solutions to those issues (i.e., “problem solving”), integrating novel approaches to team strategies (i.e., “innovation”), the provision of verbal feedback between team members (i.e., “intra-team coaching”), and helping one another improve performance (i.e., “backing up”). Teamwork behaviors corresponding to

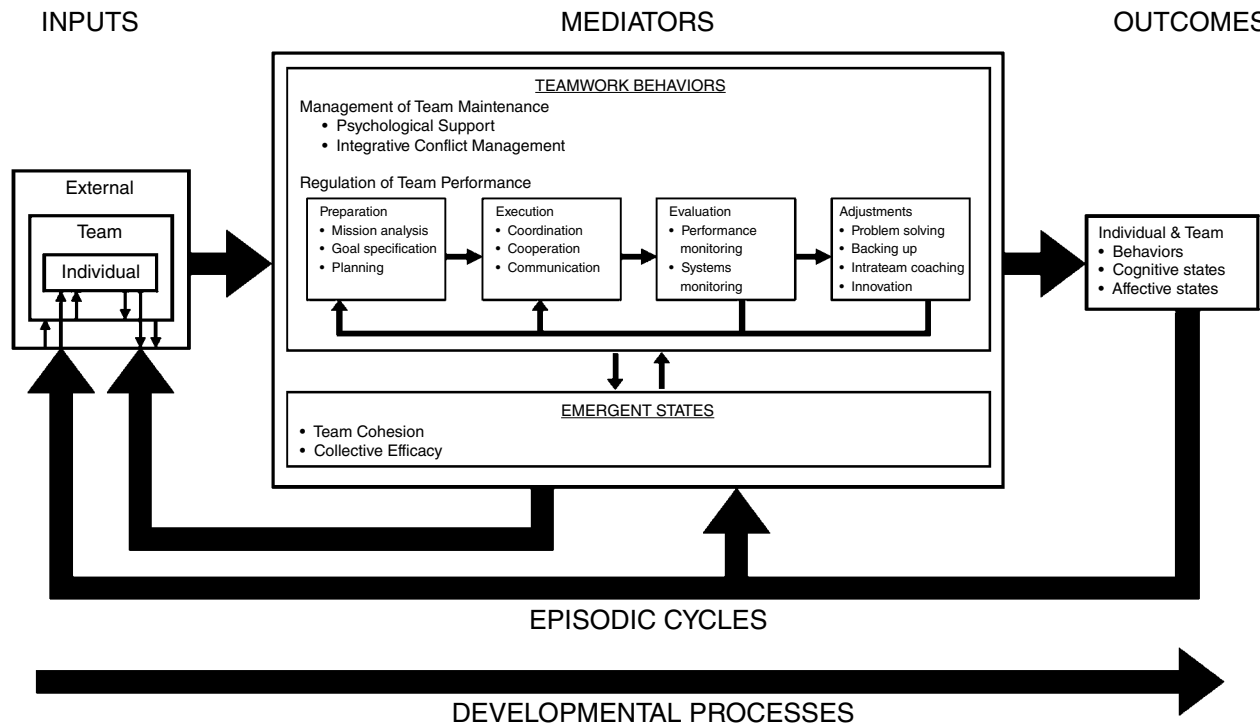


Figure 15.1 Conceptual framework for teamwork and team effectiveness in sport. *Source:* From McEwan, D., & Beauchamp, M. R. (2014). Teamwork in sport: A theoretical and integrative review. *International Review of Sport and Exercise Psychology*, 7(1), 229–250. Adapted with permission by Sage Publishing from Mathieu et al. (2008, Figure 2) and Rousseau et al. (2006, Figure 1). Reproduced with permission of Taylor and Francis.

MTM function to keep the group together and occur on an ongoing basis. These include resolving conflicts between members (i.e., “integrative conflict management”) as well as providing interpersonal support to one another with regard to personal issues that may arise (i.e., “psychological support”).

Findings from decades of research in other team contexts have shown that the extent to which team members work well together is related to an array of adaptive outcomes. For example, a meta-analysis by LePine et al. (2008) found that teamwork is positively correlated with team performance, team cohesion, collective efficacy, and member satisfaction. Emerging evidence from sports has shown similar benefits of teamwork. For example, in an archival study of National Basketball Association statistics, Halevy, Chou, Galinsky, and Murnighan (2012) found that team coordination and cooperation (measured with objective indices of assists, turnovers, defensive rebounds, and field-goal percentages) significantly predicted team performance (quantified by teams’ win percentages). Another study by Lausic, Tenenbaum, Eccles, Jeong, and Johnson (2009) focused on the relationship between communication and team performance in doubles tennis teams. They found that compared to losing teams, winning teams communicated more

frequently, included more predictable/reliable communication patterns, and had communication patterns that included more statements specifying the team’s action plan for an upcoming point (whereas losing teams had more statements that were unrelated to the task). Teamwork in sport also appears to be relevant beyond team performance outcomes. For example, the provision of psychological/social support has been shown to be associated with an array of outcomes, such as decreased athlete burnout (e.g., DeFreese & Smith, 2012), improved self-confidence (e.g., Freeman & Rees, 2010), and more self-determined forms of motivation (e.g., DeFreese & Smith, 2012).

With these findings in mind, a question arises as to whether—and how—teamwork can be enhanced through intervention. A recent meta-analysis and systematic review of controlled intervention studies found that teamwork training interventions have a significant effect (in the medium effect size range) on both teamwork behaviors and team performance across a range of team contexts (e.g., health care, academia, military) with both newly-formed teams and intact/existing teams (McEwan et al., 2017). In terms of *how* teamwork can be targeted, significant effects on teamwork were shown when these interventions: (1) targeted *any*

aspect of teamwork (i.e., behaviors focused on the various dimensions of RTP or MTM); (2) targeted *multiple* aspects of teamwork (e.g., training two or more of the preparation, execution, evaluation, and adjustment components of teamwork rather than just one of these RTP aspects alone); and (3) utilized *experiential* team-building activities that actively engage team members (e.g., team goal-setting activities, team briefs before and/or after a team task, team simulations wherein members practice effective teamwork behaviors with each other) as opposed to strategies that take on more of a passive approach (e.g., having an expert provide a didactic lecture to members on how teamwork can be improved).

As noted earlier, team-building research within sport settings has largely focused on enhancing team cohesion (Bruner et al., 2013), and while team-building interventions in sport have been found to enhance team effectiveness, they do not appear to be mediated by group cohesion (Martin et al., 2009). Thus, there appears to be an opportunity for concerted research within the field of sport psychology to develop and test the efficacy of interventions designed to support team effectiveness that target other salient constructs beyond group cohesion, especially teamwork. Various studies have shown promise regarding the efficacy of interventions targeting some aspects of teamwork. For example, Sénécal, Loughhead, and Bloom (2008) found that female adolescent basketball players whose teams had participated in a season-long team goal-setting intervention demonstrated significantly higher levels of team cohesion at the end of the season compared to players whose teams did not engage in team goal-setting. Hence, this study provided evidence for group cohesion as an emergent state that stems from teamwork. In another study, Beauchamp, Lothian, and Timson (2008) carried out a six-month intervention that focused on improving intra-team communication and conflict management skills within an international-level co-acting team. Specifically, the team-building program utilized an assessment of team members' personality profiles that was designed to help each member better understand themselves and their teammates. Participating athletes perceived that the intervention enhanced intra-team communication, trust, and cohesion, as well as their individual performances. Nevertheless, future research is clearly necessary to: (1) identify how each teamwork dimension can be targeted through intervention, (2) examine whether teamwork training interventions that target multiple aspects of teamwork are efficacious (as shown in other team contexts; cf. McEwan et al., 2017), and (3) determine if these interventions with sport teams improve teamwork as well as team effectiveness outcomes.

Social Identity Approaches to Understanding and Intervening with Physical Activity Groups

A framework that has received considerable attention within the broader social psychology literature corresponds to the social identity approach developed initially by Henri Tajfel (Tajfel, 1970; Tajfel, 1981; Tajfel, Billig, Bundy, & Flament, 1971) and subsequently with his colleague John Turner (Turner, 1975; Tajfel & Turner, 1979; Turner & Reynolds, 2012). Although this framework was originally developed over four decades ago, research using this perspective has recently gained considerable traction in sport and exercise settings, demonstrating considerable potential for both understanding various intra-group and intergroup processes (Bruner, Dunlop, & Beauchamp, 2014; Rees, Haslam, Coffee, & Lavallee, 2015; Stevens et al., 2017). Broadly conceived, the social identity approach is comprised of two distinct, but highly related, theories. These include social identity theory (Tajfel, 1970, 1975; Tajfel and Turner, 1979) and self-categorization theory (Turner, 1978, 1985; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). We now turn to each, briefly describe their conceptual bases, and provide an overview of their application within sport and exercise settings.

Social Identity Theory Perspectives

The concept of *identity* has received considerable attention within the broad field of psychology (Stryker & Burke, 2000) and is typically conceptualized as the manner in which people see themselves (Burke, 2006). Although one's overall sense of self is reflected, to some extent, in individual differences with regard to personality qualities and aspects of the individual that make him or her unique, another aspect of who we are is reflected in the extent to which we identify and align ourselves with various social groups. With this in mind, Tajfel (1981) defined social identity as "that part of an individual's self-concept which derives from [her or] his knowledge of [her or] his membership in a social group (or groups) together with the value and emotional significance attached to that membership" (Tajfel, 1981, p. 255). A key tenet of social identity theory is that people are motivated to develop a positive sense of self-concept, and this drive is harnessed through people's ongoing evaluations and engagement in the social groups to which they consider themselves to belong, as well as those by which they do not consider themselves as being aligned (Tajfel, 1981). Social identity shares many similarities with other concepts such as *belongingness* (cf. Baumeister & Leary, 1995) and *relatedness* as conceptualized within self-determination theory (Ryan &

Deci, 2000, 2017; see Chapter 3). As a gestalt, when people experience a sense of relatedness, belongingness, and strong social connections with others via their sense of social identity, they tend to engage with those others in a more adaptive manner and feel more motivated in general (Haslam, Jetten, Cruwys, Dingle, & Haslam, 2018; Ryan & Deci, 2017; Walton, Cohen, Cwir, & Spencer, 2012).

A major focus of social identity theory has been to understand intergroup-processes, or in essence, the psychological processes at play between groups. An early example that is frequently used to illustrate these social psychological processes corresponds to the classic experiment by Sherif et al. (1961) described earlier in this chapter, which involved adolescent boys taking part in a summer camp in Oklahoma. In this study, involving adolescent boys with no prior contact with each other, they found that boys in each of the two groups that constituted this social experiment displayed favorable attitudes and behaviors to those from the same group, but considerable antipathy to those from the “other” group. This psychological phenomenon, of favorable in-group and unfavorable out-group discriminatory biases (i.e., motives and attitudes), is now widely recognized (Rubin, Paolini, & Crisp, 2010), and has been found to exist even among groups established on some arbitrary basis (Tajfel, 1970).

In the sport context, social identity theory has been used to explain the behaviors of sports fans as well as the motives and behaviors of athletes that exist within and between sports teams. The research on sports fans has, among other things, demonstrated that people tend to display greater use of prosocial behavior toward other fans of the same team, when compared to those of a rival team (Levine et al., 2005). Interestingly, when fans highly identify with a sports team, this process appears to be somewhat psychologically protective, with those fans feeling connected to those teams displaying a number of adaptive psychological responses that include measures of well-being (Wann, 2006).

On sports teams, the strong sense of connection to other team members that derives from one’s sense of social identity is a particularly strong motivator that enables individual members to overcome personal adversity for the “greater good” of the team (Rees et al., 2015). On teams characterized by a strong sense of social identity, players often refer to the strong sense of “brotherhood” or “sisterhood” that enables players to accomplish exemplary things (Gow, 2015; Steidinger, 2014). As Rees et al. (2015) note, people will display considerable effort and self-sacrifice for their sports teams, even if their team is not succeeding (or is not cohesive) if their sense of social identity is heavily aligned with that of their respective team. The explanatory power of social identity within

sport has been found in relation to a diverse range of outcomes. In youth sport, the development of adaptive social identities has been found to provide a salient basis for positive youth development (Bruner et al., 2017). In another study, again involving youth sport athletes, Martin, Balderson, Hawkins, Wilson, and Bruner (2017) found that different dimensions of social identity (in-group ties, in-group affect) were related to higher levels of self-worth, commitment, and effort in school-based sport. Interestingly, the development of adaptive social identities on sport teams has also been found to be related to moral behavior in sport (Bruner, Boardley, & Côté, 2014).

So how do social identities develop? As highlighted earlier, they start to develop right from inception; when people who ostensibly have never met before are paired together and called a group (Tajfel, 1970). These social connections continue to bind as members share the same experiences and believe that they have things in common. Social identities can also be shaped by those in leadership positions, which in sport include those such as coaches and team captains (i.e., athlete leaders). For example, in a recent experimental study conducted in the context of basketball, Fransen et al. (2015) found that when athlete leaders (who were confederates in the study) displayed greater confidence in their team, a contagion effect resulted, in which they identified more closely with the team and, as a result, became more confident in themselves. Furthermore, when those athlete leaders expressed high confidence in their team, the team members’ performance increased, but when leaders expressed low confidence in the team, team members’ performance decreased.

As a final and perhaps cautionary note on social identity, it should also be noted that the consequences of a strong sense of social identity in sport should not be universally considered to be associated with adaptive, prosocial, and beneficial outcomes. If the norms and ideas of various social groups are maladaptive, antisocial, and problematic, people can develop a strong sense of identity to those groups, with those normative pressures potentially further encouraging people to engage in problematic behaviors. In the context of sport, a prototypical example of this corresponds to the case of hazing, whereby athletes engage in ritualized behavior tantamount to bullying that derive from athletes’ strong social identities that form within their teams (Whitehouse & Lanman, 2014). In a recent prospective observational study, Bruner et al. (2014) examined some of the potential mechanisms that may account for how social identity conceptions might account for antisocial behavior on sport teams. They found that stronger social identities among athletes, as operationalized by measures of in-group affect (emotional states associated with group

membership) and in-group ties (connectedness among group members), were prospectively associated with higher levels of social cohesion, which in turn predicted subsequent antisocial behavior. That is, higher levels of social cohesion mediated the effects between athletes' social identities and their propensity to display antisocial behavior.

Self-categorization Theory Perspectives

As an extension of social identity theory, Turner and his colleagues (Turner, 1978, 1985; Turner et al., 1987; Turner, Oakes, Haslam, McGarty, 1994; Turner & Reynolds, 2012) sought to examine the intra-individual psychological processes that underpin how and why individuals categorize themselves and others into various social groups, and how they see the social world. Specifically, in the context of self-categorization theory, Turner et al. (1987) suggested that people categorize themselves and others in relation to a set of underlying attributes that are salient to them (e.g., age, gender, race, education), and that these categorizations are used to make inferences about those with whom they interact. People engage in self-categorization in order to help them make *meaningful representations* of the diverse stimuli that surround them. As Oakes, Haslam, and Turner (1994) state, people engage in social categorization to “bring together stored knowledge and current input in a form which makes both sense of the world and facilitates our goals within it” (p. 125).

From a self-categorization theory perspective, people in general tend to feel more socially connected to others with whom they consider themselves to be similar (i.e., “like me”) when compared to those with whom they consider themselves dissimilar (i.e., “not-like me”), and that these perceptions of “shared categorization” have important implications for how people interact with one another (Haslam et al., 2018). As an example of this, in the context of physical activity classes, the way in which people consider social categorizations associated with their “age” appears to be a salient motivator. For example, across the age spectrum, people tend to display positive preferences for exercising with others of their own age when compared to those much older or younger than themselves (Beauchamp, Carron, McCutcheon, & Harper, 2007; Burton, Khan, & Brown, 2012). Furthermore, when people are more similar to others within group-based physical activity settings (i.e., exercise classes) in terms of their respective ages, they then tend to stick with those classes to a greater extent than when dissimilar in age to those other group members (Dunlop & Beauchamp, 2012; Beauchamp, Dunlop, Downey, & Estabrooks, 2012). Evidence for this finding has also been derived using experimental designs. For example, in the *GrOup-based physical Activity for oLder*

adults (GOAL) randomized controlled trial, older adults were randomized to physical activity programs, informed by self-categorization theory, that were either comprised of only older adults or adults across the age spectrum (Beauchamp et al., 2015). In those older-adult-only classes, instructors were themselves older adults. In addition to class composition, the intervention programs operationalized principles from self-categorization theory designed to foster a sense of social connectedness among participants (t-shirts to foster a sense of “distinctiveness” and encouraging post-workout gatherings (e.g., coffee and other refreshments) to enable participants to socially connect). Older adults that took part in classes comprised of other older adults participated in significantly more classes than those older adults who were randomized to the comparison “control” classes made up of adults across the age spectrum (Beauchamp et al., 2018). From an applied perspective, the results of this trial suggest that community group-based exercise programs should consider tailoring programs specifically for certain age groups such as older adults.

Another characteristic that people appear to use to inform their preferences and behaviors related to physical activity corresponds to “gender.” In one study, Dunlop and Beauchamp (2012) found people tend to report stronger preferences for same-gender rather than mixed gender exercise group settings. This effect was found for both men and women and was particularly pronounced among those who were overweight or obese. A recent randomized controlled trial by Hunt et al. (2014) provided some evidence for the utility of developing health-enhancing interventions involving adults of the same gender and physical condition. Specifically, in the *Football Fans in Training* (FFIT) Trial, Hunt et al. (2014) randomized 747 overweight or obese male football (soccer) fans aged 35–65 to either an intervention group or a control group. The intervention program was designed with overweight and obese men in mind by couching the intervention within “the traditionally male environment of football clubs and men only groups” (p. 1213), and involved providing participants with salient information about the science of weight loss and was couching in a peer-supportive delivery setting. The results revealed that after 12 months, those in the intervention condition displayed clinically important differences in weight loss when compared to those in the control condition. This intervention approach has also recently been applied within the Canadian context targeting overweight and obese men, using ice-hockey (i.e., *Hockey Fans in Training*; Gill et al., 2016) rather than soccer clubs.

When considered together, the results of these studies suggest that by developing physical activity programs that are sensitive to people's social identities, and specifically to the social categories/groupings to which they see

themselves belonging, might represent an opportune means of sustaining health-enhancing behaviors among diverse groups. Interestingly, a recent realist review provided by Harden et al. (2015) points to the effectiveness of group-based physical activity interventions that are delivered to very specific populations such as older adults at risk of chronic disease, university students, individuals with obesity, low-income adults, cancer survivors, postnatal women, as well as specific employment groups (e.g., firefighters). It is conceivable that, by creating programs in this way, those researchers were able to benefit from the affiliative ties that can develop when people share salient underlying characteristics or social identities.

Motivational Approaches

Across sport and exercise settings, the quality of motivation provided to, and experienced by, athletes, students, and exercisers has been consistently identified as being critical to supporting high-quality behavioral engagement. Indeed, the study of motivational processes provides researchers and practitioners (e.g., coaches, applied psychologists) with important insights into *why* people initiate and maintain various behaviors, why they persist in the face of adversity, as well as the level of effort directed to both individual and group pursuits. A number of these motivational processes are discussed elsewhere in this *Handbook* (see Chapters 1, 2, 3, 11, 17, 43, and 47); in this section we provide a brief synopsis of some of the motivational processes that are particularly germane to understanding achievement behavior in groups within sport and exercise settings, as well as their salience with regard to intervention in these settings.

Within their widely used self-determination theory, Ryan and Deci (2000, 2017, see also Chapter 3) contended that three basic psychological needs require satisfaction in order for people (across life contexts) to experience high-quality (i.e., autonomous) motivation. These include personal needs that correspond to relatedness, autonomy, and competence, which when supported result in people feeling self-determined in their motivation, and thereafter displaying marked improvements in their overall mental and physical health (Ng et al., 2012). Conversely, when those needs are not supported, or indeed, are actively thwarted by various social agents (e.g., teachers, coaches, parents), this can result in adverse motivational outcomes. Owing to the very nature of sport teams and physical activity classes, these group settings possess one of the basic nutrients that have the capacity to support one of these basic needs embedded within self-determination theory, namely relatedness. As noted earlier, people establish affiliative ties with others simply by virtue of being organized

within groups (cf. Tajfel, 1970). Furthermore, when they share common goals (e.g., to win as a team) or interests (e.g., to become fitter in an exercise class), these commonalities have the potential to bring people closer together. In school physical education settings, students tend to exhibit more autonomous forms of motivation and greater behavioral engagement when they feel socially connected to (1) their teachers, as well as (2) other students in their class (Gairns, Whipp, Jackson, 2015). From an intervention perspective, the basic need for relatedness provides a powerful source that can be used to further enrich people's experiences of physical activity group contexts. As one example, in a recent intervention study, Sparks, Lonsdale, Dimmock, and Jackson (2017) delivered a training program to school physical education teachers designed to improve their interpersonal relationships with their students (vis-à-vis bolstering teacher-student relatedness). As a result, those students displayed greater confidence in their teachers and reported enjoying physical education to a greater extent than those students in a control condition.

Sport and physical activity groups often represent very visible platforms in which displays of competence are also publicly observable. In sport and exercise, beliefs related to one's personal competence have been found to be a consistent predictor of individual achievement, performance, and participation behavior (Barnett, Morgan, van Beurden, & Beard, 2008; Teixeira, Carraça, Markland, Silva, & Ryan, 2012). For example, in a recent study involving Finnish adolescents, perceptions of competence by students during their first year at middle school (Grade 7) predicted their engagement in physical activity during their last year in high school (Grade 12) (Jaakkola, Yli-Piipari, Watt, & Liukkonen, 2016). A conceptually distinct, but related, construct—namely self-efficacy (beliefs about one's capabilities to perform particular tasks or behaviors) has consistently been found to be associated with sports performance in different settings (Moritz, Feltz, Fahrback, & Mack, 2000; see also Chapter 4). There are multiple ways in which coaches, physical educators, and exercise instructors can bolster group members' perceptions about what they are capable of achieving (i.e., perceived competence or self-efficacy) on sports teams. These include developing mastery-oriented climates that emphasize personal self-referenced improvement rather than normative comparisons (Sarrazin, Vallerand, Guillet, Pelletier, & Cury, 2002) and displaying confidence in students', athletes', and exercisers' capabilities (Bourne et al., 2015). From a self-efficacy theory perspective (cf. Bandura, 1997), beliefs related to one's capabilities are supported when people experience previous success in a given task, see others similar to themselves performing that task

(i.e., vicarious experiences), receive positive reinforcement from others, as well as through perceptions of their physical and emotional states (see Chapter 4 for an extended discussion).

With respect to supporting autonomy, group settings represent viable contexts through which coaches, teachers, and exercise instructors can provide teams, classes, or other physical activity group members with choice and volition. Whether this involves including athletes in developing game strategies or consulting students in terms of which activities should be pursued within a physical education class, such autonomy-support has been identified as a critical determinant of enriched motivation (Mageau & Vallerand, 2003). As an example of what happens when people are provided with such autonomy, Moustaka, Vlachopoulos, Kabitsis, and Theodorakis (2012) conducted an 8-week intervention study in which participants in the experimental condition were subjected to a group-based exercise program that was infused with high levels of autonomy-support. As a result, the participants, who were middle-aged women, displayed significant improvements in program attendance when compared to those women within a control condition (Moustaka et al., 2012).

When taken together, each of those psychological needs embedded within self-determination theory represent particularly viable targets for intervention within group-based physical activity settings. For example, group-based interventions guided by the tenets of self-determination theory have been found to be effective for enhancing physical activity across a range of settings, including exercise class participants (Edmunds, Ntoumanis, & Duda, 2009) and grade-school physical education classes (Perlman, 2013), as well as with specific populations, such as adolescent girls (Sebire et al., 2016) and sedentary and overweight adults (Hsu, Buckworth, Focht, & O'Connell, 2013). As a guiding strategy, Standage and Vallerand (2014) suggested that those concerned with intervening within sport and exercise groups use a *mapping approach* by developing strategies that directly align with each of those psychological needs.

In addition to those psychological mechanisms embedded within self-determination theory (Deci & Ryan, 2002; Ryan & Deci, 2000, 2017), a number of other motivational processes have the potential to support both individual and collective achievement within physical activity groups. For example, while perceptions related to one's own capabilities, or competence perceptions, represent a foundational construct within self-determination theory (Ryan & Deci, 2000, 2017), as well as other frameworks such as self-efficacy theory (cf. Bandura 1997) and the theory of planned behavior (Ajzen, 1991), a large body of work has examined the nature and effects of group-level conceptions of competence in relation to

team performance outcomes. A particular focus of this work has centered on the construct of collective efficacy, which represents the group's *shared beliefs* in its collective capabilities to accomplish group objectives (e.g., team performance). As with the individual-level construct of *self-efficacy* (see Chapter 4), collective efficacy is primarily influenced by past experiences of success, but also helps to shape subsequent success (Myers, Payment, & Feltz, 2004). Such collective efficacy beliefs have been found to be shaped by the manner in which leaders communicate with their teams, such as when leaders overtly display confidence in their team's capabilities (e.g., Fransen et al., 2015). Collective efficacy forms a key component of team resilience (Morgan, Fletcher, & Sarkar, 2017) and leads teams to set more challenging goals which then lead those teams to perform at higher levels (Bray, 2004). Although some experimental evidence exists which suggests that collective efficacy can be manipulated within physical activity settings (Bruton, Mellalieu, & Shearer, 2014), there has also been a distinct absence of interventions designed to enhance collective efficacy within "real-world" sport and physical activity settings. This represents a particularly pressing area of enquiry within future research.

Future Research

In spite of the accelerated growth of research in recent years on group dynamics in sport and exercise psychology, considerable opportunities exist to better understand the various psychological factors that underpin both individual functioning within groups as well as the optimal conditions necessary for group functioning. In this section, we highlight four major lines of enquiry that have the potential to substantively advance the field. These are certainly not designed to be a finite list, but represent foci that we anticipate have theoretical, empirical, and practical relevance across physical activity contexts. The first corresponds to the need for researchers interested in examining the prospective relationships between various group processes and achievement outcomes (whether in relation to sport performance outcomes or health-engagement within physical activity settings) to examine the psychological *mediators* that are theorized to explain the effects of the various group processes at play. For example, in recent reviews of group-based physical activity interventions (Estabrooks, Harden, & Burke, 2012; Harden et al., 2015), it was noted in both instances that there is a distinct absence of research that has examined mediating mechanisms that might account for "group-related" effects derived through intervention. In a similar vein, within the GMCB approach presented earlier, the development of

self-regulation skills (e.g., goal setting, bolstering self-regulatory efficacy beliefs and coping strategies) within the contexts of the group sessions is posited as the overall mechanism that leads to greater health-enhancing physical activity. In spite of this contention, there has been very little examination of whether the development of those self-regulatory variables actually mediate those intervention effects (through statistical tests of mediation). Such a focused examination would not only provide a robust test of the theoretical bases that underpin the GMCB model but would also explain exactly *how* such a counseling model is effective in deriving behavior change.

On a related note, a second important line of future group dynamics research in both sport and exercise involves examining the *dynamic* nature of group processes that occur over time. If groups really are dynamic and change as a sports season progresses with sports teams, or as members join or withdraw from exercise groups, then the effects of those changing processes should be accounted for within research designs, and within the analysis that are applied to data derived from those studies. As highlighted earlier, Dunlop et al. (2013) sought to examine fluctuations in task and cohesion that exist within exercise groups, but even in that study those changes in cohesion were not examined in relation to targeted predictor or criterion measures, and so this study would be considered rather descriptive, rather than explanatory, in nature. Research within the fields of social psychology and preventive medicine has emphasized the value of using daily sampling approaches such as ecological momentary assessments (Dunton et al., 2005; Schiffman, Stone, & Hufford, 2008), which provide fine-grained insights into daily fluctuations in the target behavior over a period of time and can be modeled in relation to changes in outcomes of interest. In the same way, multiple, frequently repeated assessments of group processes could be modeled over time that better reflect the dynamic and changeable nature of groups but also provide more nuanced insights. One study that did take such an approach was conducted by Maher, Gottschall, and Conroy (2015), in which they examined the relationships between cohesion and intrinsic satisfaction among participants over the course of a 30-week exercise program. In this study, participants ($n = 29$) filled out questionnaires after every class that they completed, with the option of taking part in up to six classes per week. The results revealed notable within-person variability existed in social as well as task dimensions of cohesion across exercise classes (i.e., differences were as evident from class-to-class in terms of individual members' perceptions as there were differences between individuals). Furthermore, the class-to-class changes that existed in exercisers' attraction to the group-task (ATG-T) were positively associated with their enjoyment

of the class in question. In future, we recommend that researchers make use of similar design and statistical (i.e., multi-level modeling) approaches to better enable researchers to examine within-group as well as between-group effects over time.

As a third broad recommendation, continued efforts to test the efficacy and effectiveness of group-based interventions using experimental designs are encouraged. This is one aspect in which the study of group dynamics within exercise settings has markedly advanced in the past decade. As highlighted earlier in this chapter, the use of randomized controlled trial (RCT) designs have been applied to examining several group-based physical activity interventions, ranging from young children (Kennedy et al., 2017), obese male football fans (Hunt et al., 2014), women of color (Lee et al., 2011, 2012), and to community-dwelling older adults (Beauchamp et al., 2015, 2018). Such controlled intervention designs have considerable potential to provide strong evidence of causality, with pragmatic trial designs also representing a viable means of ascertaining whether group-based interventions work to enhance outcomes within real-world conditions (Treweek & Zwarenstein, 2009).

As a final recommendation for future research, and building on some of the previous sections in this chapter, we recommend a greater emphasis on research related to teamwork within sport settings and a more even-handed approach to considering the role of cohesion in sport. While it is certainly evident that cohesion is a correlate of performance measures in sport, interventions that have sought to target cohesion in sport have tended to derive either small or no effects in relation to changes in this group-level variable (Martin et al., 2009). By contrast, team goal setting (a type of teamwork behavior) interventions have demonstrated strong evidence for improving measures of team effectiveness (Martin et al., 2009). This suggests that those interventions may derive those improvements in team effectiveness by means other than fostering cohesion. Given that teamwork interventions appear to be effective in enhancing both teamwork and team performance across different contexts (McEwan et al., 2017), and that teamwork involves very identifiable behaviors, we recommend that those concerned with intervention in sport seek to harness this important team construct as a means of supporting team functioning and test such initiatives through highly controlled longitudinal experimental designs.

Conclusion

The study of group dynamics has a rich history within psychology and, more specifically, within the field of sport and exercise psychology. An accumulation of

research has shown that group dynamics play a major role in supporting individual engagement in sport and exercise, as well as a range of group-level outcomes (e.g., team performance). The majority of research on group dynamics within sport and exercise psychology has focused on the nature and correlates of group cohesion. In this chapter, we provided a critical analysis of this work, which supports the utility of intervention approaches (designed to enhance cohesion) within exercise settings but also highlights the importance of

targeting other group constructs, especially within sport settings (e.g., teamwork), when designing interventions directed at improving team effectiveness. Other frameworks that have the potential to substantively advance our understanding of intra- and intergroup processes (e.g., social identity approach) in sport and exercise were also examined, along with identifying major gaps in the literature and directions for future research. The study of group dynamics continues to be a highly vibrant area of inquiry within the field of sport and exercise psychology.

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