



The Effect of Team Building on Cohesion

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The present study examined the effectiveness of a multidimensional team building intervention on perceptions of cohesion in which the sport psychology consultant, coach, and athletes were actively involved. Participants were members of an intercollegiate softball team (n = 16). The Group Environment Questionnaire was administered at five times during the season. Responses were compared to a non-intervention control (n = 17). Qualitative information concerning team functioning was also acquired pre and post intervention through the use of focus group methodology. Results indicated that the intervention group reported significantly higher levels of cohesion following the intervention period compared to the control. These differences did not extend throughout the competitive season. Recommendations for future team building research are discussed.

KEY WORDS: team building, cohesion

Cette étude avait pour but d'examiner l'effet sur la perception de cohésion d'une intervention multidimensionnelle de constitution d'équipe et d'esprit d'équipe engageant la participation active d'un psychologue sportif, d'un entraîneur et d'athlètes. Les participants faisaient partie d'une équipe de balle molle intercollégiale (n = 16). Le Questionnaire sur l'environnement de groupe a été administré cinq fois au cours de la saison et on a comparé les réponses avec celles d'un groupe de contrôle n'ayant subi aucune intervention (n = 17). On a également recueilli des renseignements qualitatifs sur le fonctionnement de l'équipe avant et après l'intervention en ayant recours à la méthodologie des groupes de consultation. Les résultats ont révélé que dans le cas du groupe soumis à l'intervention, le degré de cohésion entre les membres suivant la période d'intervention était nettement plus élevé que dans le cas du groupe de contrôle. Ces différences ne s'étendaient pas tout au long de la saison des compétitions. L'étude

Authors' Note

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The authors would like to thank Albert V. Carron for his contribution

formule diverses recommandations applicables à la recherche sur la constitution des équipes et sur l'esprit d'équipe.

MOTS CLÉS : constitution d'équipe, esprit d'équipe, cohésion

Effective teamwork is an ever increasing goal for sport teams at any level of competition. Practitioners have adopted a strategy known as team building to promote consistent and effective teamwork. *Team building* is the deliberate process of facilitating the development of an effective (task) and close (social) group (Beer, 1980). Beckhard (1972) and Woodcock and Francis (1994) suggested the following purposes of any team building intervention: (a) to set clear team goals, (b) to clarify role behaviour, (c) to examine team functioning, (d) to examine relationships between members, (e) to ensure meetings and practices are efficient, (f) to diagnose potential weaknesses and minimize their influences and, (g) to ensure coherent and visionary leadership. While team building has received considerable interest in business and industry, attention in the sport and exercise literature has only recently been generated.

Cohesion has been defined as "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). As such, team building interventions are designed to promote enhanced perceptions of cohesiveness and enable a team to be more effective (Newman, 1984).

Consistent with the above suggestion, Carron and Spink (1993) adopted a conceptual framework in which team building was presented as a process of inputs, throughputs, and outputs. Team inputs were conceptualized as individual and team characteristics which need to be considered prior to any team building intervention. Throughputs are the processes by which the inputs are converted into outputs, while outputs reflect changes in individual and/or team behaviour. Cohesion has generally served as the output variable of interest in the sport/exercise literature (e.g., Carron & Spink, 1993; Spink & Carron, 1993).

Carron and Spink (1993) identified two categories of input variables--group structure and group environment. The structure of the group refers to the patterns of relationships among team members (Johnson & Johnson, 1997) and include role clarity and acceptance, team leadership, and consensus on group norms. These group variables have all been linked to cohesion (Carron & Hausenblas, 1998). The second input variable, environmental factors refer to the physical and geographical characteristics in which the team is set. These may include proximity, distinctiveness, and togetherness. Environmental factors have been shown to lead to enhanced perceptions of cohesion (e.g., Festinger, Schachter, & Back, 1950; Rainey & Schweickert, 1988) as they result in increased opportunities for interaction and the establishment of a distinct team identity.

The input variables influence throughputs or group processes, which are defined as the dynamic interactions characteristic of group membership (Carron & Hausenblas, 1998). Group processes can include team communication patterns, team goals, and making sacrifices for the team both inside and outside of sport. Evidence supports the importance of group processes for enhanced perceptions of cohesion. For example, team goal setting has been shown to be related to perceptions of cohesion on a female golf team (Widmeyer & Williams, 1991). Prapavessis and Carron (1997) demonstrated that perceived sacrifice behaviour both within (e.g., playing a different position) and outside sport (e.g., less time with family) were related to perceptions of cohesion in 127 male cricket players. The relationship between these variables was circular as higher levels of cohesion were found to lead to greater sacrifice behaviour among team members.

Team building research in the exercise and sport domains has received increasing attention in recent years. Team building in exercise settings has been shown to improve cohesion and adherence in exercise classes (Carron & Spink, 1993; Estabrooks & Carron, 1999).

Results of team building research in sport have been equivocal, with some finding evidence to support the team building cohesion relationship (Cogan & Petrie, 1995;

Voight & Callaghan, 2001), while others have not (Bloom & Stevens, 2002). Prapavessis, Carron, and Spink (1996) conducted one of the most frequently cited empirical investigations of team building in sport. Coaches were randomly assigned to either an intervention, an attention-placebo, or a control condition. Coaches assigned to the intervention condition participated in a team building workshop which resulted in the development of specific strategies. Coaches were to implement these strategies throughout the preseason and during the first six weeks of the regular season. Perceptions of cohesion were assessed at three times—pre intervention, preseason, and eight weeks into the regular season. No differences in cohesion were found across the three conditions.

Prapavessis et al. (1996) highlight two important reasons for the above findings. First, coaches in the intervention condition were responsible for diagnosing team functioning and developing specific team building strategies. Consequently, the effectiveness of the intervention, in part lay in the ability and motivation of the coaches to implement change. Eitington (1997) suggested that not all leaders are able to successfully enhance team functioning. This may stem from many sources including the coach-athlete relationship, poor motivation, and/or a lack of knowledge. Further insight into this issue can be found in the organizational psychology literature. Hanson and Lubin (1988) suggested that for team building interventions to be successful, team leaders must be willing to examine their own roles within the team and how they contribute to team functioning. Finally, interventions that increase group members' control over and involvement in work are more powerful than interventions that focus on morale boosting or envisioning goals (Cotton, 1993; Levine & D'Andrea Tyson, 1990). Athlete input was not solicited by Prapavessis et al. (1996) which may have resulted in decreased perceptions of self-determination and athlete commitment to the intervention.

Prapavessis et al. (1996) further indicated that the constructs emphasized in team building (e.g., goal setting, communication, conformity to standards) occur naturally. Similarly, it is not uncommon for coaches to actively engage in strategies to enhance team building. Consequently perceptions of cohesion did not differ across conditions as all participants may have believed they were receiving team building from their coaches regardless of the condition they were in.

The purpose of the present study was to determine the effectiveness of a team building intervention program which focused on perceptions of cohesion in which the sport psychologist, coach, and athletes were actively involved in all stages of the process. To this end, the effectiveness of a team building intervention program was assessed using an intervention and non-intervention control group over the course of a competitive season. Perceptions of cohesion were assessed over time to gain insight into two issues. First, did the intervention result in higher perceptions of cohesion compared to the control prior to the competitive season? Second, did the intervention continue to exert an influence over the course of the season?

Methodology

Participants

Intervention group. Female participants ($n = 16$) from a Division 1 NCAA softball team participated in the present study. The athletes ranged in age from 18 to 22 years ($M = 19.23 \pm .79$). The team was comprised of 5 freshmen, 6 sophomores, 3 juniors, and 3 seniors. All participants were Caucasian. The coaching staff consisted of the head coach and two assistant coaches. Winning percentage at the conclusion of the season was .610, with a .500 conference record.

Control group. Female participants ($n = 17$) from a Division 1 NCAA softball team served as the control group. Their mean age was (19.89 ± 1.10). The team was comprised of 4 freshmen, 3 sophomores, 6 juniors, and 4 seniors. All participants were Caucasian. The coaching staff was comprised of the head coach and two assistants. Winning

percentage at the conclusion of the season was .570, with a conference record of .500.

Experimental conditions

Team building condition. A meeting was scheduled with the coaching staff to solicit information concerning structure and environment of the team and the group processes which contributed to the development of cohesion prior to any interaction with the athletes. Coach-athlete communication and clique formation were the two areas identified by the coaches where the team needed assistance.

Athlete perceptions of team functioning were also assessed with attention to the structure and environment surrounding the team and various group processes. The coaching staff divided the team into two heterogeneous groups of athletes based on years in school and position played. Qualitative information was gathered using focus group methodology (cf. Carey, 1994; Krueger, 1994, 1998; Morgan, 1998). This approach has been recognized as an effective way of uncovering abstract topics and discovering new insights in a sport setting (Bloom, Stevens, & Wickwire, 2003). The primary investigator served as an impartial moderator during each interview and was responsible for asking appropriate questions and ensuring the athletes were comfortable while addressing sensitive issues. Each interview lasted approximately one hour.

The moderator wrote fieldnotes throughout each group interview. Fieldnotes are written accounts of what the moderator hears, sees, emotions expressed, and experiences during the interview (Bogdan & Biklen, 1992). The fieldnotes were transcribed within 24 hours of each interview and were reviewed thoroughly and independently by each of the researchers. Transcripts were compared by the researchers who then deliberated until consensus was reached concerning the areas which most effected team functioning. Two areas reflected in the group structure were identified—role behaviour and team leadership. Increased social interaction was identified as an environmental variable to be enhanced. Group process variables included improved coach-athlete communication, improved social support between team members, and the clarification of team goals. Team building strategies were developed to address each of the above issues and were implemented in the following order: role behaviour, social support, team leadership, social interaction, and clarification of team goals. All team building sessions were conducted prior to the start of the competitive season with the exception of monthly meetings with team captains.

Role Behaviour

Roles are shared expectations for behaviour (Carron & Hausenblas, 1998). Clearly defined roles are associated with cohesion (Dawe & Carron, 1990). During pre intervention interviews, the athletes commented that they had little understanding of what their roles were. The coach agreed to hold individual meetings with each athlete to clarify role behaviour. The strengths of each athlete were outlined as were the behavioural expectations for each role. Meetings were held prior to the start of the competitive season. Fifteen minutes were allotted for each athlete meeting.

Social Support

Results of the athlete interviews suggested that more social support from teammates was considered important for improved team development. Further, unresolved tension between players occupying specific positions were identified. The importance of a supportive environment was discussed as it related to satisfaction and team functioning by the sport psychologist. Social support was introduced as a multidimensional construct and the eight dimensions of social support (cf. Rosenfeld & Richman, 1997) were identified. Athletes were asked to individually rank-order the dimensions of social support that were most important to satisfaction and team functioning. Additionally they were asked to indicate which dimensions needed to be improved. Once completed, four small groups were formed. The goal of each group was to come to a consensus as to which dimensions of social support were most important and which needed to be enhanced. Areas identified were: task challenge, emotional challenge, and listening support. The remainder of the session centered around developing specific strategies on and off-the-field to improve these dimensions. Strategies for monitoring performance

across social support dimensions were also discussed. The session lasted approximately 1.25 hours and coaches were excluded from this meeting.

Team Leadership

Coaches were asked to list the qualities they felt were important for athlete leadership. These characteristics and others identified in the sport psychology literature (cf. Murray & Mann, 1998) were discussed with the team by the sport psychologist. Team members were then asked to anonymously identify who they thought would be effective task and social leaders. Task leaders are those who assume a leadership role toward the achievement of the group's goals, whereas social leaders are those who are effective in promoting unity and integration (Carron & Hausenblas, 1998). Two of the players chosen were seniors and the other a junior. Playing time and position varied across those selected. By position, two captains were infielders and the other an outfielder. This session was conducted during the preseason and lasted approximately one hour. The coaching staff was not in attendance.

The sport psychologist organized a follow-up meeting with the elected captains and coaching staff to clarify the roles and responsibilities of each individual. Monthly meetings between the captains and the sport psychologist were held for the remainder of the season. The purpose of these meetings were to offer support, address concerns and provide suggestions for the effective resolution of problems.

Social Interaction

Coaches and athletes had identified concerns surrounding the social harmony of the team. As such, the prime responsibility of the social leader was to enhance harmony and interaction among team members. Personal conflicts on and off-the-field were dealt with by the social captain who served to mediate and counsel team members. Social and community functions which stressed the inclusion of all team members were organized as were activities designed to relieve boredom on road trips and during breaks in tournaments.

Coach-Athlete Communication

A series of meetings with the coaching staff and the primary investigator were held throughout the pre and competitive season to address concerns expressed by them or the team. The coaches were committed to developing more effective communication patterns and a stronger interpersonal relationship with the athletes. Johnson's (1997) communication training strategies formed the basis for this intervention. Communication patterns were discussed in relation to practice and competitive situations. Nonverbal communication and handling stressful situations were also discussed to facilitate emotional control during games. In total, these meetings lasted approximately three hours.

Clarification of Team Goals

In the pre intervention interviews the athletes commented that they were unsure of the focus and direction of the team. To minimize this concern, a goal setting procedure was implemented similar to that developed by Widmeyer and DuCharme (1997) and encompassed two sessions held within a week of each other prior to the start of the competitive season. The objective of the first session served an educational role where different types of goals and the characteristics of effective goal setting was highlighted (cf. Kyllö & Landers, 1995). The athletes were instructed to individually consider behaviours (e.g., on base percentage, errors, pitch count) they perceived important to overall team success. The first goal setting session lasted approximately 30 minutes.

For the second session, the athletes were divided into three subgroups and asked to reach consensus on six behaviours they thought critical to team success. The coaching staff comprised a fourth group. Once deliberations concluded, a spokesperson for each group was asked to list the behaviours selected by their group (with the coaching staff going last). Discussion followed and the total team reached consensus on the behaviours they felt were critical for team success.

The next step was for the team to identify a performance goal for each behaviour. Performance goals are those which focus on achieving a standard (e.g., team batting average of .300; Weinberg & Gould, 1999). Team statistics from the previous year and pre season tournaments were provided for use as guidelines for each adopted behaviour. Athletes were instructed to identify goal windows for performance (e.g., team batting average of .300-.310) instead of specific performance values. Again, athletes formed three subgroups and the coaches comprised the fourth. Each group was asked to reach a consensus concerning performance and report their goal windows. The team deliberated until consensus was reached on the goal windows they thought appropriate.

Once completed, discussion centered around the importance of setting process goals to help the team achieve their performance goals. Process goals focus on strategies to help the team achieve their performance goals (Weinberg & Gould, 1999). Strategies adopted in practice for each behaviour (e.g., scheduling weekly one-on-one batting cage time with the coach to improve team batting average) were devised and implemented throughout the season. The second goal setting session lasted approximately two hours.

To monitor performance, the competitive season was broken into seven segments with each segment comprised of approximately 10 games. The goal for the team was to achieve their performance goals for each segment. The assistant coach was responsible for recording performance goals on the goal sheets prior to the first practice immediately after each game. Each segment was hung in the dugout so team members could examine collective performance.

Control condition. Four months prior to the start of the season, coaches in the control condition were asked to participate in a study which assessed perceptions of cohesion during the season. No feedback was provided to the coaches or team until one month following the completion of the season.

Instruments

Group Environment Questionnaire. Cohesion was assessed by the 18-item Group Environment Questionnaire (GEQ; Carron, Widmeyer, & Brawley, 1985). The GEQ assesses perceptions of cohesion across four dimensions: Individual Attraction to the Group-Task (ATG-T; 4 items); Individual Attraction to Group-Social (ATG-S; 5 items); Group Integration-Task (GI-T; 4 items) and; Group Integration-Social (GI-S; 5 items). Respondents are asked to rate each item on a 9-point Likert scale anchored at the extremes by *strongly disagree* (1) and *strongly agree* (9). The higher the subscale total, the greater the perceptions of cohesion. Evidence for concurrent, predictive, and construct validity of the GEQ has been demonstrated (Brawley, Carron, & Widmeyer, 1987).

For the purpose of the present investigation only two subscales of the GEQ were included in the statistical analyses—GIT and GIS. The subscales assess team member's perceptions of the group as a unit about the similarity, closeness, and bonding of the team around the group's task and the social unit respectively. These two subscales were selected as all team building interventions centered around group oriented activities designed to enhance team functioning and interpersonal relationships. Cronbach alphas for the five measurement times ranged from .72 to .76 (GI-T), and .72 to .87 (GI-S).

Procedure

The head coach approached the primary investigator four months prior to the start of the competitive season to determine the feasibility of developing a sport psychology program which centered around team building. A meeting was scheduled with the athletes to gain consent and outline the team building process. The athlete's role in the intervention was clearly detailed as was the role of the researcher (i.e., observe, gather information, provide objective feedback, and implement interventions). Confidentiality was discussed and it was noted that specific athlete responses would not be discussed with the coaches, but that team concerns could be communicated should the team collectively agree to do so. Mutually convenient times to conduct the focus group interviews were scheduled.

The GEQ was administered five times through the pre and competitive season for both the intervention and control teams. The first administration was prior to the pre intervention focus group interview (Time 1), then after the third team building session (Time 2), immediately prior to the beginning of the competitive season (Time 3), middle of the competitive season (Time 4), and at the end of the competitive season (Time 5). Each administration was between four and five weeks apart and data for both groups were collected within 48 hours of each other.

Upon completion of the season, a post season focus group interview was conducted with the intervention group. As done pre intervention, the team was divided into two subgroups and was asked to express their opinions concerning the effectiveness of the designed interventions.

Results

Changes in cohesion

Descriptive statistics for specific mean scores on the GEQ can be found in Table 1. To determine the impact of the team building intervention a 2 (intervention, control) by 2 (Time 2, Time 3) repeated measure MANCOVA was conducted with cohesion at Time 1 serving as the covariate. This pre intervention score served as a covariate because the magnitude of each participant's subsequent scores are dependent on their initial level of cohesion (Prapavessis et al., 1996). The cohesion subscales GI-T and GI-S served as the dependent variables. Results of the analysis showed a significant effect for the intervention, Wilks' lambda = .79, $F(2, 29) = 4.53, p < .019$.

An examination of the univariate F ratios showed a significant difference between the two measures of cohesion at Time 3 using Time 1 as a covariate. The athletes in the intervention group reported higher levels of GI-T than did the control group, $F(1,30) = 7.20, p < .012$. Similarly, the intervention group reported significantly higher levels of GI-S than did the control, $F(1,30) = 22.60, p < .001$. No significant differences were found between the measures of cohesion across group at Time 2 when Time 1 was used as a covariate.

Table 1
Means and Standard Deviations of Cohesion Across Administrations

Subscale	Time 1		Time 2		Time 3		Time 4		Time 5	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
GI-T										
Intervention	34.94	7.00	34.00	6.87	37.69	5.65	35.13	5.76	36.25	6.56
Control	29.29	5.85	33.47	8.38	30.53	5.08	31.29	5.95	34.82	7.16
GI-S										
Intervention	30.81	3.54	30.35	5.16	33.56	2.73	29.25	6.65	31.44	6.95
Control	25.24	1.79	26.82	4.65	26.06	2.73	26.29	2.73	27.88	5.68

The influence of the intervention on perceptions of cohesion over time (i.e., the competitive season) was calculated using a repeated measures MANOVA with perceptions of cohesion at Time 3, 4 and 5 serving as the dependent variables. No significant differences between groups emerged over time.

Post intervention interviews

Interventions were conducted across five areas of team functioning. Each area was addressed in the post intervention interviews to generate subjective information concerning the perceived effectiveness of the strategies introduced. Athletes perceived a greater understanding of their roles and behavioural expectations were more concrete compared to pre intervention. However, role expectations were not always consistent as they would change during critical game situations. Clarifying team direction was targeted

through the election of task leaders and the team goal setting. Many positive comments surfaced and the team seemed to derive beneficial information from the implementation of goal setting. The extra feedback concerning performance and the strategies designed to enhance these performance areas were used throughout the season. Athletes perceived the relationships between team members to have improved since the pre season and attributed much of these to the strong influence of the social captain who was effective in bringing the team together. Sport-specific communication (e.g., feedback and clarity) had improved throughout the course of the season but was still subject to break-downs during tight game situations. Discomfort in discussing personal matters with the coaches, remained a concern of the team.

Discussion

The purpose of the present study was to determine the effectiveness of a team building intervention program which focused on perceptions of cohesion in which the sport psychologist, coach and athletes were actively involved in all stages of the process. A conceptual framework for team building (Carron & Spink, 1993) which attempted to enhance cohesion through attention to group structure, environment, and processes guided the intervention process. Effectiveness was determined through quantitative analyses comparing the intervention and control group on cohesion during the pre and competitive season. The intervention group also provided qualitative information which was discussed as a subjective measure of change in team functioning.

Results supported the effectiveness of the team building intervention on perceptions of task and social cohesion. Perceptions of cohesion at the conclusion of the intervention (i.e., Time 3) were significantly higher for the intervention group than the control group. These results differ from those reported by Prapavessis et al. (1996) who noted that team building research may benefit from considering the athletes' opinions on areas of weakness. The approach to team building adopted in the present investigation included the assessment of athlete opinions prior to, and during, team building sessions. Valuable sources of information were provided by the athletes including: the areas of social support that needed to be enhanced and the behavioural measures adopted for team goals. The team also had considerable input on how to monitor changes in behaviour as a result of the team building sessions.

Prapavessis et al. (1996) also suggested that team building interventions may be more effective when high status members of the team are involved with the implementation of the strategies. Team captains were integral to successful implementation and continued monitoring of team functioning. Monthly meetings with the captains provided valuable sources of feedback. These meetings also afforded the researcher the opportunity to reinforce and support the extra work done by the captains.

Finally, support from the coaching staff may have provided the athletes with a sense of confidence in the sport psychologist. A coaching staff that is motivated to improve team functioning and readily accepts the information offered may facilitate perceptions of cohesion. Many of the interventions designed could not have been implemented without full support of the coaches (e.g., role behaviour). In addition, the athletes may have realized the commitment of the coaches to enhance team functioning through listening to athlete concerns.

The effectiveness of the team building intervention over the course of the competitive season was also assessed. The intervention program was not effective in contributing to continued significant differences in cohesion. Numerous factors may have influenced these findings. First, the nature of the intervention was to implement team building strategies during the preseason when there is more time to learn and the athletes do not feel as pressured by competition. It was deemed important to conclude the intervention before the beginning of the competitive season for two reasons. First, the NCAA restricts the amount of practice time coaches can require of their athletes. The combination of season schedule and travel time limits the amount of practice time available for the team.

Team building would have taken away from physical practice time, especially given that the application of team building strategies needed to be integrated with the technical and tactical components of the game. Second, in organizational settings, shorter duration team building interventions have been shown to be more beneficial than longer duration interventions (Salas, Rozell, Mullen, & Driskell, 1999). While subjective (e.g., meeting with the captains) or objective strategies (e.g., goal feedback sheets) were developed to monitor team functioning for each intervention, the extent to which the athletes adhered to these strategies was not quantitatively assessed. Therefore, without regular reinforcement, the beneficial effects of team building on cohesion may have been effected.

Post intervention qualitative interviews may also lend some insight into the changes in cohesion which occurred during the competitive season, particularly in two areas. First, athletes noted that coach-athlete communication improved from previous seasons. However, when in tight game situations or competitions against tough opponents, communication broke down. Second, athletes reported positive changes in understanding the role they played on the team; however, they also noted that in close game situations these behavioural expectations seemed to change. This somewhat inconsistent behaviour may have negatively affected perceptions of cohesion.

The influence of performance as a possible variable for the above findings may be minimized. The winning percentage of the intervention and control teams were comparable and the conference records identical. Further, research examining the relationship between cohesion and win/loss record at the end of the season is somewhat equivocal with some showing more successful teams demonstrating greater cohesion (Ruder & Gill, 1982; Matheson & Mathes, 1997) while others not supporting the above relationship (Gray, 1975; Martens & Peterson, 1971). Finally, the organizational literature suggests that team building interventions do not have a significant impact on objective measures of performance (Salas et al., 1999).

Methodological limitations may also have influenced the results and the conclusions derived from the current study. These limitations warrant discussion. First, the small sample size limits the generalizability of results. The finding that team building improved perceptions of cohesion may be specific to female intercollegiate softball players. Future researchers may want to examine more diverse populations. Second, the present study employed a quasi-experimental design. While this approach is not uncommon in team building literature (Brawley & Paskevich, 1997), it does not overcome the possibility that differences between the teams were found in coaching style, performance records, and team atmosphere. The influence of these powerful variables may have affected the outcome and the inferences derived from the study. An experimental research design where teams or team members are randomly assigned to groups would benefit conclusions of causality.

Practical limitations in the present study should also be considered. Athletes in the intervention condition experienced a multidimensional approach to team building. As such, the effectiveness of the techniques used in the intervention was assessed collectively. Although qualitative interviews indicated the athletes perceived the team goal setting task to be most effective, the relative effectiveness of any one technique cannot be determined. Salas et al. (1999) reported that interventions which center on role clarification made the greatest contribution to the relationship between team building and performance compared to goal setting, interpersonal relationships, or problem solving. Future team building research may wish to evaluate the effectiveness of one intervention tool on the team building/cohesion relationship. A second strategy may be to more directly assess from the coaches or athletes (either qualitatively or quantitatively) the techniques perceived to be most effective or those which were adhered to the best.

The present investigation focused on the assessment of perceptual changes in team functioning as reported by the athletes. However, other sources of additional information were not considered. The coaching staff was instrumental in the pre intervention and

intervention phases of the present study. Coaches were responsible for the initial orientation of the researchers, for specific team building interventions (e.g., goal setting), and helped to implement many of the strategies adopted. Coaches were not included in the post intervention interviews. Their insight into the effectiveness of the team building intervention would have strengthened the current study.

Further, Brawley and Paskevich (1997) noted that multidimensional assessments of change may also benefit team building researchers. For example, behavioural measures of change could be generated including performance records, intention to return to participate the following season, and changes in coach behaviour. Similarly, organizational changes (e.g., increased responsibility of assistant coaches or changes in meeting structure) during the season and in the subsequent season may provide a valuable source of information.

Interest in evaluating the efficacy of team building programs has received increased attention in the sport and exercise psychology literature. The present study evaluated the effectiveness of a multidimensional intervention on team building. Support for the effectiveness of the intervention was found, although significant differences did not extend through the competitive season. Future research is necessary to replicate and build on the above findings.

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