



Training Transdisciplinary Health Promotion Teams: Opportunities and Challenges From Team Science

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Across many industries, reliance on teamwork has skyrocketed over the last few decades.¹ In tandem, the problems facing today's teams increasingly require collaboration from across a wide variety of disciplines. As a result, organizations have increasingly looked to transdisciplinary teams to innovate, problem solve, and find answers to their most complex problems. This trend is particularly evident in healthcare promotion, a field that is by nature multidisciplinary and often relies on professionals' ability to collaborate with institutional stakeholders to promote health knowledge, skills, attitudes, and behaviors in workplaces.

To help improve teams' ability to coordinate expertise, organizations often rely on team training. The robust science of team training indicates that well-designed team training boosts team performance across a wide variety of contexts.² While many principles of team training are relevant across industries, the multidisciplinary nature of health promotion generates a unique set of challenges that can be mitigated by team training and other development interventions focused on improving coordination across disciplines.

The purpose of this paper is to catalyze findings from team science as they apply to multidisciplinary health promotion teams, focusing on the teamwork knowledge, skills, and abilities most relevant to multidisciplinary health promotion teams. Accordingly, the paper is organized in 3 sections. The first section reviews the science of team training, noting training best practices and insights for health promotion teams. Second, we focus on key challenges facing multidisciplinary health promotion teams including role ambiguity, psychological safety, and team conflict. Finally, the third section is focused on team behaviors that can be developed through training to help teams overcome these challenges.

Team Training in Health Promotion Teams

To help teams develop the knowledge, skills, and abilities necessary to facilitate effective teamwork, talent development professionals often look to team training. Indeed, team training has been shown to improve a number of team performance outcomes.² Although team training was initially developed for use in aviation and the military, its uses have expanded to a number of other contexts.³ For example, well-designed healthcare team training has been linked to reduced patient mortality.^{4,5} As a result, team training has become increasingly popular in these industries and is becoming more common across a wide range of fields.

Team scientists have spent decades studying what makes team training effective. In general, recommendations can be summarized into 5 pillars of team training effectiveness: determining team training needs, creating a positive climate for learning, designing team training for usability and learnability, evaluating the training program, and creating a system for enduring and sustaining teamwork behavior in the organization (see Figure 1).⁶ Some of these principles go beyond the training itself. For example, managers and organizations play an

important role in creating a climate that promotes learning, communicates the importance of training to organizational goals, and provides ample opportunities to practice skills on the job.⁷ Other principles apply to the design of training itself. For example, training design should include information, demonstration, and practice, first explaining a concept or skill, then demonstrating the skill to trainees, then engaging trainees in practice via simulation or role play.⁸

Principles for team training also apply across fields. For instance, many of the knowledge, skills, and abilities relevant to teamwork effectiveness are similar across fields.⁹ Effective teams, for example, must coordinate their behaviors to streamline their expertise and make the most of working with a team.^{9,10} Team training might focus on the importance of building a shared mental model, or a shared understanding of the team's tasks, roles, and responsibilities, to facilitate coordination.¹¹

However, the exact focus of team training should be tailored to the team's context. For health promotion teams, organization-level goals or strategy might inform the content of training, but factors unique to the industry will also be important. In particular, the unique, often multidisciplinary, composition of health promotion teams might influence their functioning.⁹ Indeed, team composition can impact team attitudes, behaviors, and cognition.¹² The following sections are focused on the teamwork competencies most relevant to multidisciplinary health promotion teams and teamwork behaviors that can help overcome these challenges.

Challenges Facing Multidisciplinary Health Promotion Teams

Health promotion teams typically incorporate experts from across disciplines in team processes and decisions. The multidisciplinary nature of health promotion teams is often a great strength, but makes teams vulnerable to a new set of challenges. Indeed, research indicates that knowledge-based diversity tends to improve team performance because members can draw from a wider range of perspectives, experiences, and expertise.¹³ However, these teams may also have more difficulty integrating their knowledge, sharing information, and making decisions.^{14,15} Thus multidisciplinary teams have the potential to improve team creativity and performance, but only if teams can overcome the challenges associated with integrating different perspectives including challenges with role ambiguity, team conflict, and psychological safety (Table 1).¹⁶

*c*Role Ambiguity

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Figure 1. Pillars of Team Training for Health Promotion Teams (Adapted from Salas, 2015).

Table 1. Teamwork Training Foci for Health Promotion Teams.

Challenge	Teamwork behavior	Key citations
Role Ambiguity	<ul style="list-style-type: none"> Use pre-briefing, huddle, and de-briefing meetings to build shared mental models When conducted effectively, these touch bases can help boost team psychological safety 	Allen et al., 2018; Keiser & Arthur, 2020
Team Conflict	<ul style="list-style-type: none"> Engage in both proactive and reactive conflict management Consider using team-building exercises focused on developing shared goals Leaders should engage in coaching behaviors to help team members manage conflict 	De Wit et al., 2012; Shuffler et al., 2011
Psychological Safety	<ul style="list-style-type: none"> Leaders should demonstrate openness to team members' ideas When leaders are inclusive and humble, members are more likely to feel psychologically safe 	Edmondson, 1999; Frazier et al., 2017

Although the unique compositional and contextual features of multidisciplinary teams are largely beneficial, the same features that lead to greater creativity and innovation in transdisciplinary teams may also have detrimental effects on how teams work together. The diversity of functional backgrounds and perspectives in multidisciplinary teams may give rise to role ambiguity and role conflict when team members are not clear on their colleagues' knowledge, skills, and abilities, or when team members disagree about who should play what role in a team. Relatedly, multidisciplinary teams may have trouble staying on the same page about the best way to address a problem that arises.

Team scientists refer to uncertainty around job obligations or the role that members play in their teams as *role ambiguity* and disagreements or inconsistencies regarding responsibilities as *role conflict*.¹⁷ In multidisciplinary health promotion teams, a number of factors may lend way to role ambiguity or conflict. For example, teams that have frequently rotating membership might have more difficulty keeping track of roles and responsibilities.¹⁸ In health promotion teams working together on project-based teams where members come from a variety of backgrounds, it may be difficult for teams to clarify whose expertise lies where or who should take on what responsibilities within the team.

Role ambiguity and role conflict can have negative impacts for both teams and their members. For example, role conflict can lead to or exacerbate relationship conflict in teams, ultimately negatively impacting team performance.¹⁹ Conflict or the stress stemming from ambiguity can also impact individual team members' experiences,

leading to lower team satisfaction. However, other aspects of how a team operates can mitigate the effects of role ambiguity. For example, members' social support, job satisfaction, and job autonomy can help team members avoid role conflict and mitigate the negative effects of role ambiguity on well-being and work outcomes.

Role ambiguity is a symptom of a larger challenge for transdisciplinary teams, which psychologists refer to as a lack of *shared mental models*. Shared mental models can be defined as the knowledge each member individual possess which allows the team as a whole to function collaboratively.²⁰ Because multidisciplinary teams tend to be particularly diverse, they may have more difficulties developing shared mental models than their more homogeneous counterparts.²¹ When many different types of team members are present, it is more difficult to ensure all members are on the same page and share a mental model. Specifically, teams that are functionally diverse may also have different values, goals, or visions for the team that prevent a cohesive mental model. For example, if one member is trained to value one aspect of a project most highly and another member is trained to value a different aspect, it can be difficult to join the 2 in a multidisciplinary team that shares the same goals and values. Intra-individual goal conflict may arise when individuals attempt to account for their own field's goals as well as the goals of team members. This conflict can ultimately lead to lower performance.²² Shared mental models have the potential to be a great asset to transdisciplinary teams but a deficiency in the model can pose great harm to the team's success.

Team Conflict

Finally, multidisciplinary health promotion teams may struggle with team conflict. Team scientists typically describe team conflict as encompassing 3 types of incompatibilities among team members.²³ First, task conflict is focused on different ideas and perspectives among group members. Process conflict encompasses disagreements about how a team's work should be accomplished. Finally, relationship conflict involves interpersonal tension and friction.

Team conflict is not universally negative. Whereas relationship and process conflict tend to have negative effects on team performance, task conflict can actually benefit team performance.^{24,25} Indeed, in a study of team conflict profiles, researchers found that student teams with high levels of task conflict and low levels of process and relationship conflict performed better than teams with no conflict at all.²⁶ When teams are able to openly engage in fruitful discussions about the best solution to a problem, they may generate more creative ideas or come to better decisions. In contrast, if this task conflict is driven by relationship or process conflict, teams are likely to be dysfunctional.

On multidisciplinary teams, teams may be more likely to experience conflict.²⁷ For example, individuals from different fields may have divergent opinions on the best way to complete a task, or may have personal disagreements due to the way resources are allocated in the organization. Further, if individuals' disciplines align with other member characteristics, like gender or organizational tenure, "fault lines" may occur. Fault lines emerge when subgroups form on the team on the basis of two or more characteristics, and are linked to higher levels of conflict and lower levels of team satisfaction and performance.²⁸

Psychological Safety

While team functional diversity typically drives challenges related to role ambiguity, shared mental model development, and team conflict, the hierarchy inherent in some multidisciplinary teams can also create challenges. A consequence of the hierarchical nature of multidisciplinary teams is the lack of psychological safety, or the extent to which team members feel comfortable engaging in interpersonal risk taking.^{29,30} In health promotion teams, interpersonal risk taking might mean speaking up as a team is deciding how to tackle a project or feeling comfortable voicing disagreement with a leader from a different field than your own. Psychological safety is closely related to factors such as voice, team learning, and organizational learning, which can all impact both team performance.³¹ In teams where psychological safety is high, members are more likely to share their mistakes or near-misses, helping the team to learn from them.

Although a number of factors can influence the emergence of psychological safety, the presence of hierarchy may be particularly influential in determining psychological safety. In healthcare promotion teams, it may be the case that some disciplines represented hold a higher status than others or that some members of a team may hold a higher status than others. This type of hierarchy has been linked to lower psychological safety in fields like healthcare, where hierarchy is inherent in organizational culture.³² When members are or perceive that they carry lower status on the team, they may be more hesitant to speak up about their concerns.

Teamwork Behaviors to Promote Health Promotion Team Effectiveness

Although role ambiguity, team conflict, and low psychological safety may pose unique challenges to health promotion teams, a number of

behaviors can help teams overcome these obstacles. Team training for health promotion teams may incorporate these behaviors.

Building Shared Mental Models

Pre-briefings are small team meetings that discuss the ins and outs of a specific case and clarify points of confusion. These meetings help to reduce role ambiguity among members, encouraging a shared mental model. Pre-briefings have been linked to improved team processes and performance. For example, experimental studies of healthcare simulations show that engaging in a pre-briefing positively impacts competency performance and clinical judgment.³³ Further, these huddles can give senior members the opportunity to model ideal behaviors for newer members.³⁴ Having an open forum to discuss key decisions being made allows newer members to have a better grasp of what should be weighed in decision making and how teams should function by observing more senior team members. Lastly, huddling can increase psychological safety among team members,³⁵ which improves both quality of care and job satisfaction. Establishing a set time to ask questions encourages more open dialogue and eases anxieties of asking questions at the wrong time.

For similar reasons, teams should also engage in debriefing after an intervention or event. A debrief conducted at the conclusion of a project provides teams with an opportunity to discuss how things went, what could have gone better, and how the team plans to improve future projects. When done well, debriefing promotes psychological safety³⁶ and decreases role ambiguity.³⁷ By implementing more touch points for the team to communicate, transdisciplinary teams can improve the care patients receive and participate in a better work environment. Indeed, meta-analyses demonstrate that de-briefs can improve team performance by more than 25% and are particularly effective when teams are given the opportunity to review objective performance information as part of the debriefing process.^{38,39}

Effectively Managing Conflict

Multidisciplinary teams may also be prone to conflict as they manage a wide variety of viewpoints among team members. Team scientists have defined 2 approaches to conflict management to mitigate team conflict.¹⁰ Proactive conflict management requires teams to establish conditions to prevent, control, or guide team conflict. In contrast, reactive conflict management involves efforts to work through disagreements among team members. Conflict management approaches can take a variety of forms. For example, team building may be used to promote conflict management. Team building describes activities aimed at improving team relations and social interactions and helping teams to crystallize team goals.^{40,41} For example, goal setting team building may improve relationships among team members by providing teams a source of shared motivation and focusing members on the team rather than their individual goals.^{41,42} Team leaders may also play a role in helping their teams to manage conflict. For example, leaders may coach team members on how to proactively manage conflict before it arises or may serve as mediators to help teams effectively manage conflict after it arises.⁴³

Promoting Psychological Safety

Leaders also play an important role in bolstering psychological safety in teams. Indeed, compared to team members at the same level, leaders play an outsized role in promoting psychological safety on their

teams.²¹ Leaders who are inclusive and ethical and those who have strong relationships with team members are more likely to develop a strong psychological safety climate.⁴⁴⁻⁴⁶ Conversely, authoritarian leaders can make team members feel their opinions are unvalued and not welcomed.²⁹ To create an environment where team members are more comfortable, leaders can make themselves accessible and approachable. This can take the form of soliciting input and feedback at regular intervals. Setting the precedent that it is good to speak up will encourage team members to do so later on.

Conclusion

The science of team training provides a multitude of insights relevant to health promotion teams. However, these teams face unique challenges due to their often multidisciplinary nature including role ambiguity, team conflict, and difficulty developing psychological safety. As a result, teams may benefit from additional training around behaviors to overcome these obstacles.

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Optimizing Virtual Team Meetings: Attendee and Leader Perspectives

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Workplace meetings are a significant aspect of organizational life, with the average employee spending roughly 6 hours of their time in meetings per week.¹ Those in top management or executive positions report spending upward of 23 hours in meetings each week.¹ In fact, leaders report spending more time preparing for and leading meetings than any other work-related activity.²

In recent times, many of these meetings have been held remotely. From 2010-2020, there has been a 400% increase in the number of employees who work remotely at least once a week.³ Zoom reported having over 300 million⁴ meeting participants per day in 2020. A Future Workforce Pulse report by UpWork revealed that by 2025, 36.2 million⁵ Americans will be working remotely. This is an 87% percent increase from pre-pandemic levels.

These statistics suggest that a significant number of work-related meetings will continue to be remote well into the future. If these meetings are led effectively, they could positively impact employees, teams, and organizations.

Over the past 20 years, meeting science has explored various tactics and behaviors that contribute to positive perceptions of meeting effectiveness—such as having an agenda, starting on time, and keeping meeting minutes.⁶ Despite the clear migration of so many meetings to virtual contexts, little research has considered whether these specific practices transfer to the virtual context. The purpose of the present study is to explore tactics associated with successful and effective virtual meetings, representing both an attendee perspective and leader specific perspective.

Examining Virtual Meeting Experiences

Adopting a convenience sampling approach, we surveyed a diverse sample of over 270 employees addressing their perceptions of and experiences with leading and attending virtual meetings. The survey was distributed in June 2020, in the midst of the COVID-19 pandemic.

Our sample included members of a Norwegian startup company as well as the international social networks of the authorship team. At the time of the survey, 87% of our sample reported they were working from home. On average, respondents indicated 92% of their overall meetings were held remotely. A majority of our sample were senior, executive or top-level management (54%), followed by middle-level management (23%). Most participants were between the ages of 35-55 (62%), from North America or Europe (88%), with about two-thirds being male (61%) and one-third female (39%).

We first asked all participants to report on the effectiveness of their virtual meetings. Participants indicated the percentage of time their meetings were effective using a set of descriptors (e.g., “a good use of time”). The 5 items assessing virtual meeting effectiveness were then averaged to achieve an overall meeting effectiveness score ($M = 70.46\%$, $SD = 18.54$). We also asked participants to assess the overall virtual meeting skills of their supervisor on a scale ranging from 1 (“Very poor”) to 5 (“Very good”).

We then tested whether higher perceptions of virtual meeting effectiveness were related to meeting leader skills. Results revealed there was a significant positive relationship between employees' perceptions of their leaders' virtual meeting skills and their ratings of overall meeting effectiveness ($r = 0.36$, $p < .001$). Those who rated their leaders as having better meeting skills also rated their meetings as more effective.

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