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Effect of Conflict on Team Performance and Satisfaction among Health Profession Students

Introduction

The use of teams within organizations is very popular for a variety of reasons. Using the diverse skills and perspectives of individuals within a group can lead to higher performance (Jehn, Northcraft, & Neale, 1999) and teams tend to perform better than individuals on tasks (Cooper & Kagel, 2005; Faust, 1959; Michealsen, Watson, & Black, 1989). Additionally, some research suggests that millennials, the newest members of the workforce, prefer to work in teams as opposed to individually (Howe & Strauss, 2003), meaning it can be expected that the use of teams for task completion in organizations will likely continue its upward trend.

To help in the development of team work skills, educational programs often use group and team learning processes as part of their curriculum. This is not a new concept in health profession education and makes sense given the realities of working in teams in healthcare settings. However, a question arises as to the types of conflict that appear within student work teams and how students may transfer these experiences into professional practice. Team members who encounter conflict could potentially learn poor conflict management habits that they could carry into their professional lives. Considering Baldwin and Daugherty's (2008) findings of the scope of conflict encountered by medical residents and the correlation between conflict and medical errors, understanding the risks and opportunities for conflict management skill development in initial education is important.

This study investigated how a population of students within healthcare profession educational paths (radiology, microbiology, physiology, and Medical/Dental Education Preparatory Program [MEDPREP]), experienced task conflict and relationship conflict

(Guetzkow & Gyr, 1954; Jehn, 1994) and how that conflict impacted their team performance and satisfaction working with their team. While this study investigated students intending to matriculate to health professions, understanding how students in general experience conflict in their training can speak to how educators and managers prepare and lead these future professionals for their day-to-day work interactions.

Conflict is detrimental for team work and affects not only the team itself, but the organization, its customers, and the economy. Conflict has been found to interfere with a team's ability to engage in collaboration (LePine, Piccolo, Jackson, Mathieu, & Saul, 2008) and is a significant problem for teams and managers. Research suggests that as much as 18% of a manager's time is spent resolving conflict (AccountTemps, 2011) and that the average employee spends approximately 2.1 hours per week handling conflict (CPP Inc., 2008). Of the respondents from the CPP Inc. study (2008), 25% indicated they had missed work to avoid conflict, and the findings estimated the cost of lost productivity due to conflict at around \$359 billion annually.

In healthcare settings, the presence of conflict can pose a major concern as life and death may be on the line and the causes of conflict vary widely from time stress (Brown, Lewis, Ellis, Stewart, Freeman, & Kasperski, 2011; Marco & Smith, 2002) to differing approaches to conflict management (Leever, Hulst, Berendsen, Boendemaker, Roodenburg, & Pols, 2010; Skjørshammer, 2001) to administrative decision-making (Cohn, 2009). As noted by Lepine et al. (2008), conflict hinders collaboration and collaboration breakdowns in medical settings have been shown to be negatively correlated with team performance in the form of patient outcomes (Baggs, Ryan, Phelps, Richeson, & Johnson, 1992; Baggs Schmitt, Mushlin, Mitchell, Eldredge, Oakes, & Hutson, 1999; Fassier & Azoulay, 2010; Knaus, Draper, Wagner, & Zimmerman, 1986). According to Baldwin and Daugherty (2008), medical residents who reported

experiencing higher rates of conflict with colleagues also reported higher rates of significant medical errors (SME) and adverse patient outcomes (APO). General adverse outcomes of conflict in medical settings manifest themselves in the form of unnecessary deaths (Institute of Medicine, 1999; Society of Actuaries, 2010), increased disability costs and lost workdays (Society of Actuaries, 2010), and nurse and employee turnover (Buffington, Zwink, Fink, Devine, & Sanders, 2012; Estryn-Behar, van der Heijden, Fry, & Hasselhom, 2010; Hulin, 1991; O'Brien-Pallas, Murphy, Shamien, Xiaogiang, & Hayes, 2010; Suzuki, Itomine, Saito, Katsuki, & Sato, 2008), among others.

For this study, task conflict and relationship conflict were the two types of conflict investigated (Guetzkow & Gyr, 1954; Jehn, 1994). Task conflict is defined as, “an awareness of differences in viewpoints and opinions relating to a group task,” while relationship conflict is defined as, “an awareness of interpersonal incompatibilities, includes affective components such as feeling friction and tension” (Jehn & Mannix, 2001, p. 238). While conflict is often considered a negative event within a team, some have suggested that the conflict related to the manner in which tasks are completed may actually benefit team outcomes (Jehn, 1995). Yet the notion of task conflict, as opposed to relationship conflict, providing potential advantages for teams has been a point of debate. De Dreu and Weingart (2003) contended that research suggesting increases in team outcomes related to task conflict were less than conclusive and only significant circumstantially. Following De Dreu and Weingart’s meta-analysis, research on the effects of task conflict and relationship conflict within teams then began to focus more on the specific circumstances and populations as well as potential moderators for effects. For example, de Wit, Greer and Jehn (2012) found supporting evidence for previous findings that if task conflict was present without relationship conflict, the negative effect on group outcome was

lessened (Greer, Jehn, & Mannix, 2008; Peterson & Behfar, 2003; Shaw, Zhu, Duffy, Scott, Shih, & Susanto, 2011; Simons & Peterson, 2000; Yang & Mossholder, 2004). They also found evidence of the effect of task conflict on team performance being less negative among top management teams (de Wit, Greer, & Jehn, 2012).

One group that was not among the populations investigated in the studies that were part of De Dreu and Weingart's (2003) and de Wit, Greer, and Jehn's (2012) meta analyses were students in health profession programs or courses that tend to matriculate to either a health profession or medical school. This population is worthy of study as they are likely the next generation of doctors, nurses, radiologists, and other medical personnel who will be working in teams with other healthcare professionals. If task conflict and relationship conflict can lead to subpar team performance that manifests itself in the form of medical errors, then study of this phenomenon in future medical professionals is needed. The same is true regarding the impact of these types of conflict on team member satisfaction leading to turnover and staffing shortages, which can be costly both economically (PriceWaterhouseCoopers, 2008; The Lewin Group, 2009) and from a patient wellbeing perspective (Gelinas & Bohlen, 2002). Because of the importance of this population, the research sought to extend the investigation of task conflict and relationship conflict's effect on team performance and team member satisfaction to their team processes.

Methodology

Research Questions

This study was guided by the following research questions:

1. What is the nature and strength of the relationship between task conflict and team performance among students in health profession related courses?
2. What is the nature and strength of the relationship between relationship conflict and team performance among students in health profession related courses?
3. What is the nature and strength of the relationship between task conflict and team member satisfaction among students in health profession related courses?
4. What is the nature and strength of the relationship between relationship conflict and team member satisfaction among students in health profession related courses?

Participants

The study used students in courses that traditionally matriculate to medically related professions. Upon Institutional Review Board approval, students from a medium-size, public university in the Midwest were introduced to the research and invited to participate during a regular class meeting. A total of 148 students enrolled in radiology, physiology, and microbiology classes agreed to participate and were separated into 47 teams within their individual classes. Targeted convenience sampling was used to select and recruit the participants. Health profession tracking students were chosen in part because, as previously mentioned, among the studies included in the meta-analyses of de Wit, Greer, and Jehn (2012) and De Dreu and Weingart (2003), none were identified that focused on students from health profession related courses.

Of the 148 participants, 102 (68.9%) were female and 46 (31.1%) were male. Participants came from courses in radiology before they attend clinic (n=36, 24.3%), radiology

after they attend clinic (n=38, 25.7%), physiology (n=34, 23%), and microbiology (n=40, 27%). Five different grade levels were represented. Student participants represented the grade levels of freshman (n=15, 10.1%), sophomore (n=21, 14.2%), junior (n=72, 48.6%), senior (n=19, 12.8%), and MEDPREP (n=21, 14.2%).

The Medical/Dental Education Preparatory Program (MEDPREP) program serves as an opportunity for students interested in pursuing medical school to prove their potential success in that pursuit. Thus, students in the MEDPREP program hope to matriculate to medical school. Twenty one of the participants were MEDPREP students, 19 of those students came from the microbiology class and two from the physiology class. There were 74 radiology students in the study (36 pre-clinical and 38 post-clinical). These students naturally move into health profession positions. Ninety five (64.19%) of the 148 participants were enrolled in programs that specifically matriculate to health professions. While students were not formally asked to state their career intentions, many of the students identified health related careers as their goal during informal conversations throughout the introduction and implementation of the study.

Measures

The primary variables being investigated in the study were task conflict, relationship conflict, team satisfaction, and team performance. The instruments to measure the constructs of task conflict, relationship conflict and satisfaction were selected from prior research. Team performance was measured using decision tasks completed by the participant teams and were chosen because they were inauthentic, which gave each participant equal chance to know something about the scenario, and had correct answers that could be used to measure team performance.

NASA Moon Survival Task. The NASA Moon Survival Task uses a scenario where group members are to imagine themselves stranded on the moon. They are given a list of items and then asked to rank those items in order of importance to assist them in making it to the rendezvous point. This task has been used in previous research related to team decision making and interaction (Innami, 1994; Kimura & Kottke, 2009; Miner, 1984). Group answers were compared to the correct answers provided by the instrument and calculated for an overall group score. This is explained in the procedures section.

Lost at Sea: A Consensus-Seeking Task. The Lost at Sea: A Consensus-Seeking Task (Nemiroff & Pasemore, 1975) is similar to the NASA Moon Survival Task in that it provides a scenario and a list of items that the group must rank in order of importance. In this particular scenario the group is to imagine they are in a raft in the ocean after their charter boat sank. It is a commonly used task for group decision making and interaction (Reinig, 2003; Roch & Ayman, 2005). Group answers were compared to the correct answers provided by the instrument and calculated for an overall group score. This is also explained in the procedures section.

Intragroup Conflict Scale. Created by Karen Jehn (1994), the Intragroup Conflict Scale is used to measure levels of task conflict and relationship conflict. The scale consists of nine questions relating to levels of anger or disagreement over ideas the team member observed or felt within the group. A five point, Likert type scale was used with response options ranging from “None or Hardly” to “A Great Deal.” Each individual team member completed the scale following the completion of each of the two tasks. For this study, a modified, six question version of the scale was used per Pearson, Ensley, and Amason (2002), who found equal or greater levels of reliability using the shortened scale. Cronbach’s alphas for the instruments in this study were .873 for relationship conflict and .833 for task conflict.

Satisfaction Scale. The satisfaction scale was a two item scale taken from previous studies by Priem, Harrison, and Muir (1995) and DeChurch and Marks (2001). The two statements were “working with this group has been an enjoyable experience” and “I would like to work with this group in the future.” A five point Likert scale was used with response options ranging from “strongly agree” to “strongly disagree” and DeChurch and Marks reported an item correlation of .94. In this study, a Cronbach’s alpha of .959 was observed.

Procedure

Prior to the beginning of the study, participants’ consent forms with demographic information were gathered. Participants in each class were assigned to teams using stratified random assignment in which more senior students were made team leads. To increase emotional investment, a cash reward was awarded to the teams with the top four scores based on performance. Previous research indicated that personal rewards helped increase emotional investment in study participants (Saavedra and Van Dyne, 1999).

Teams were informed of their team lead and told that the team lead had authority over the final answers. They were then given the Lost at Sea group task and allowed 12 minutes to complete it. Typical instructions for this task suggest 15- 20 minutes for completion; however, a shorter time frame was used to increase stress, as time constraints has been identified as a catalyst for conflict (Espin & Lingard, 2001; Marco & Smith, 2002). Once teams finished the Lost at Sea task, team members individually completed the Intragroup Conflict Scale and Satisfaction Scale. After a short break teams were reconvened and given the Lost on the Moon task along with 12 minutes to complete it. Once finished, the participants individually completed the Intragroup Conflict Scale and the Satisfaction Scale.

Findings

Scores of the Intragroup Conflict Scale and the satisfaction scale were calculated for each team along with their scores on the two team tasks. Each team task included 15 items to be ranked in order of importance to survival. Performance scores were calculated by comparing the team's rankings of the items to the correct ranking of the items and then summing the absolute deviations from the correct rankings (Waugh, 1996). Using this system, if a team ranks three items 2, 1, 3 and the correct ranking is 1, 2, 3, the team's score would be 2. This is derived by the following, $(2-1) + (1-2) + (3-3) = 2$. Thus, the lower the score, the better the team performed. Those scores were then compared to identify any correlations using Spearman's Rho for non-parametric distributions.

Research Question #1

What is the nature and strength of the relationship between task conflict and team performance among students in health profession related courses?

As reported in Table 1, no statistically significant correlation between task conflict and team performance were identified ($r_s = -.064$, $p = .671$).

Research Question #2

What is the nature and strength of the relationship between relationship conflict and team performance among students in health profession related courses?

In the present study, no statistically significant relationship between relationship conflict and team performance existed in Phase I ($r_s = -.149$, $p = .318$), which are reported in Table 1.

Research Question #3

What is the nature and strength of the relationship between task conflict and team member satisfaction among students in health profession related courses?

Data from the present study found a negative, statistically significant correlation ($r_s = -.343$, $p = .018$) between task conflict and team member satisfaction (Table 1).

Research Question #4

What is the nature and strength of the relationship between relationship conflict and team member satisfaction among students in health profession related courses?

The findings that are presented in Table 1 show a negative, statistically significant correlation ($r_s = -.302$, $p = .039$) between relationship conflict and team member satisfaction in the present study.

Table 1

Correlations Between Levels of Conflict, Team Performance and Team Satisfaction

	1	2	3	4
1. Satisfaction	-			
2. Task Conflict	-.343*	-		
3. Relationship Conflict	-.302*	.602**	-	
4. Task Performance	.135	-.064	-.149	-

** . Correlation is significant at the 0.01 level (2 tailed)

* . Correlation is significant at the 0.05 level (2 tailed)

Additional Findings

Beyond the research questions, additional investigation was conducted to determine if differences existed between the classes. Data analysis using ANOVA found that differences in the levels of task conflict between classes were statistically significant ($F(3,43) = 3.951$, $p = .014$). Post-hoc analysis using Tukey HSD indicated differences existing between the Radiology Post-clinical and Physiology students ($p = .035$). Additionally, significant differences were present between Radiology Post-clinical and Microbiology students ($p = .035$). Post-clinical radiology student groups indicated lower levels of task conflict than participants from the Physiology and Microbiology groups.

Conclusions and Discussion

The findings of the study support previous research, which indicated that the impact of task conflict on team performance can be inconsistent and circumstantial (De Dreu & Weingart, 2003). Likewise there was no significant correlation between levels of relationship conflict and team performance, which is consistent with earlier findings (De Dreu & Weingart, 2003; de Wit,

Greer, & Jehn, 2012). Both of these findings may be a result of the correlation between levels of task conflict and relationship conflict in this study.

The meta-analysis by de Wit, Greer, and Jehn (2012) found that low correlations between task conflict and relationship conflict were important for task conflict to positively impact performance. In this study, however, task conflict and relationship conflict were positively and significantly correlated ($r_s = -.602, p < .01$). The presence of such a correlation between task conflict and relationship conflict would suggest that task conflict would either have no effect or a negative effect on team performance. In this case, no affect was detected.

Previous research was also supported regarding the relationship between conflict and team member satisfaction. Both task conflict ($r_s = -.343, p = .018$) and relationship conflict ($r_s = -.302, p = .039$) showed statistically significant negative correlations to team member satisfaction. Throughout the majority of the studies analyzed by De Dreu and Weingart (2003) and de Wit, Greer, and Jehn (2012), increases in conflict led to decreases in satisfaction. Lower satisfaction likely contributes to overall employee satisfaction and has been found to lead to employee intentions to leave (Buffington, Zwink, Fink, Devine, & Sanders, 2012; Hulin, 1991; Luu and Hattrup, 2010; O'Brien-Pallas, Murphy, Shamien, Xiaogiang, & Hayes, 2010).

The findings have both theoretical and practical implications for training and development. Educationally, there is evidence that conflict does arise within student work teams. The concern may not be the presence of conflict but protecting against poor conflict management habits being formed during group exercises and transferred to professional practice. Thus, training through either formal or informal coursework on general conflict and conflict management techniques might be beneficial prior to the start of group activities.

For those who oversee work teams, the connection between conflict and team member satisfaction is an important one. This study indicates that even in instances of relatively low stress and emotional investment, the appearance of conflict can lead to decreases in team member satisfaction. The increased stress and emotional investment in professional interactions will likely only exacerbate feelings of dissatisfaction potentially leading to employee withdrawal or turnover. Creating processes to either reduce team conflict or facilitate conversations that address instances of conflict may alleviate some of the negative effects. As with education, training on general conflict and conflict management techniques would also provide members of work teams with the skills necessary to self-manage conflict as it arises.

There are several opportunities for continued research in the area of conflict within work teams. Perhaps the most obvious among these opportunities is continued research looking at task conflict and relationship conflict's effect on team performance and team member satisfaction among students. However, there is also a need to investigate these same types of conflict within professional work teams during the course of training and in real work settings. Longitudinal studies of conflict reactions and their effects on students as they move into professional roles may uncover differences that exist or changes that occur at various points along the path from student to working professional, which may inform educational practices.

Another area for research is how team member dissatisfaction and withdrawal impacts team productivity. Consider Tuckman's (1965) team developmental stages of "forming, storming, norming, performing," in relation to team member satisfaction. High dissatisfaction leading to member withdrawal and turnover can impede team continuity and cohesion. If a member leaves the team and needs to be replaced, the potential for group norms to be renegotiated increases as the equivalent of a new team has been formed. This runs the risk of

moving group development to step one again. It is certainly possible that a new member will conform to the established group norms, but this is not guaranteed. Since it takes time for groups to pass through Tuckman's developmental stages, there is a risk of lost or reduced productivity. The potential impact on individual, team, and organizational productivity merits further investigation.

There are a couple factors that may contribute to the lower levels of task conflict reported by Post-Clinical Radiology students in comparison to those reported by Microbiology and Physiology students. One factor may be that these students have spent time in an actual work environment with high-stress team interactions that included conflict. Thus, a simple activity in class for a research study may not be something that elicits an emotional response. Maturation may also take place in a radiology student's clinical experience that gives them a different perspective. Finally, there may be some inherent difference, either in Post-clinical Radiology students or their educational process, which makes them less likely to encounter, report, or be affected by conflict related to the completion of tasks. Future research may look at personal characteristics of radiology students at various stages to investigate possible predispositions and changes that occur during the course of their education.

The study supports much of the previous research on task conflict, relationship conflict, team satisfaction, and team performance. The debate over the risks or benefits of task conflict centers on the somewhat sporadic findings throughout research on the subject, and given the widespread use of teams within healthcare settings, continued research on these interactions is necessary. Anything that can enhance or retard performance or productivity is worthy of investigation, especially where human wellness is concerned. There is also the moral aspect of gaining a better understanding of how people "get along" and work together, which has

corporate and social implications. This study sought to add to this body of knowledge within the specific population of students who may likely pursue roles in the healthcare industry and may eventually be working in teams in which the outcome is life or death. Identifying any potential differences in this population regarding their ability to interact successfully in a team context can have broad moral and economic implications.

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