Finding Antecedents of Psychological Safety: A Step Toward Quality Improvement

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PURPOSE. The study's aim is to review the literature on psychological safety in the healthcare setting, more specifically, to identify environmental climates which promote and support psychological safety in healthcare organizations.

CONCLUSION. The findings show the complex dyadic interplay between leaders and team members. Current literature supports the significant role of leaders as one of the major contextual influences in promoting a psychologically safe environment. Specific leadership behaviors found in this review, including leadership inclusiveness, trustworthiness, change-oriented leaders, and ethical leadership, can foster a psychologically safe environment. The development and training of such leaders must incorporate cultivation of different domains of leadership.

PRACTICE IMPLICATION. Knowledge of the factors influencing psychological safety will assist healthcare organizations to cultivate and promote the psychological safety among healthcare personnel, thereby promoting patient safety and increasing healthcare quality.

Background

Quality improvement in health care has been underscored since the Institute of Medicine (IOM) published its landmark report, *To Err is Human* (IOM, 2000), followed by *Crossing the Quality Chasm: A New Health System for the 21st Century* (IOM, 2001). The focus on quality improvement necessitates the need for an organization to adapt and learn from the continuous and dynamic changes. The study conducted by Tucker and Edmondson (2003) illustrates that operational failures are common occurrences in the everyday work process.

Edmondson (2004) reported that interpersonal climate in the workplace has a direct effect on the employees' behavior to report or to discuss and analyze problems or failures in the workplace. Also noted is the high prevalence of healthcare workers choosing not to speak up about their concerns (Maxfield, Grenny, Lavandero, & Groah, 2011). To create an improvement is to understand the processes that need to be improved. One of the central tenets of quality improvement is the belief that people are forthcoming and honest about quality issues. Interpersonal climates that elicit a belief about the social consequences of speaking up about sensitive topics like errors are silent but potent barriers of any improvement initiative.

There is evidence to suggest that psychological safety leads to organizational learning and team effectiveness which leads to positive outcome. The purpose of this review is to summarize current research literature illustrating environmental climates that promote and support psychological safety in the healthcare organizations. It will attempt to answer "What are the interpersonal contextual factors that foster psychological safety?"

Psychological Safety

Psychological safety is described as one's perception of consequences for taking interpersonal risk in their work environment. Edmondson (2004) described it as a "tacit calculus at micro-behavioral decision point, in which they assess the interpersonal risk associated with a given behavior" (p 4). Based on this tacit assessment, and the degree of perceived consequences, an individual can proceed or retract from a given situation (Edmondson, 2004).

In their study on organizational change, Schein, Bennis, and Blake (1965) describe psychological safety as "an atmosphere where one can take chances . . . (p. 44)" which is needed for an individual to feel secure and be capable of change. In a study that examined the general psychological conditions at work, Kahn (1990) found psychological safety as one of the contributing factors that affect the personal engagement and disengagement at work. He observed that the association between feeling safe and showing one's self reflects a tenet of clinical therapeutic work involving individuals, relationships, families, groups, and organizations. Psychological safety was described as "feeling able to show and employ one's self without fear of negative consequences to self-image, status, or career" (Kahn, 1990, p. 708).

Psychological safety has been found to promote team learning behavior and consequently enhancing team performance (Edmondson, 2004). Perceived psychological safety in a group encourages giving and seeking feedback (Wang & Hong, 2010; Wilkens & London, 2006), which in turn advances creativity and improves decision-making and the group's outcome without damaging team interaction (Bradley, Postlethwaite, Klotz, Hamdani, & Brown, 2012; Wilkens & London, 2006). Drawing from Dewey's learning theory, Edmondson conceptualized learning as an ongoing process of reflection and action characterized by seeking feedback, reflecting, asking questions and discussing problems, issues, and/or concerns. Team members who perceive they are psychologically safe are more confident to engage in learning behavior that leads toward goal achievement and overall improved outcomes.

Psychological safety enables team members to bring forth concerns and issues that in turn afford the team a valuable source of information. It facilitates the climate of productive discussion, creating opportunities for improvement that can lead to overall organizational improvement. Edmondson (1996) found that team self-correcting behaviors were more prevalent in units in which members were less concerned about being caught making a mistake. She noted that high-performing groups had higher error rates than lower-performing groups. Looking more deeply into this puzzling result, Edmondson found that the difference was in the perceptions of the risk of reporting medication errors. Units with high error rates had members who openly acknowledged medication errors and discussed ways to avoid their recurrence; units with the lower error rates had members who kept their knowledge of a drug error to themselves. This is congruent with other studies that reported a significant relationship between psychological safety and the teams' willingness to learn from failure (Carmeli & Gittell, 2008). In addition, psychological safety has also been found to have a positive impact on employees' organizational commitment.

In the healthcare arena, where the stakes in delivering high-quality care are higher, the consequences of a psychologically safe environment become vital in ensuring a positive performance outcome. Staff should be comfortable speaking up, which in turn can lead to improved patient safety. With the increasing and ever-changing demands in health care, it is imperative to gain a better understanding of the factors which foster psychological safety. This can

better equip organizations and their leaders in the promotion of psychological safety.

Literature Search Strategies & Methods

An integrative literature review process outlined by Whittemore and Knafl (2005) was followed. A search was performed on Medline, CINAHL, Scopus, and PsycINFO databases for English research articles on quality improvement in the period from January 2000 to present. Initially, the search was done on Medline using free text terms describing "psychological safety" or "performance improvement" or "quality improvement"; these were combined with the keywords "work environment" or "organizational culture" or "leadership" or "acute care" or "organizational structure." These steps were repeated for the other databases. In addition, ancestry approach (Cooper, 1998) was utilized to examine citations from relevant research reports.

In an effort to have an extensive literature review of the subject, help from a librarian from a large medical center was solicited. She performed the search on Scopus, Web of Science, Business Source Complete, and Psychology and Behavioral Sciences Collection using the keywords "climate" and "psychological safety" or "psychosocial safety."

Selection of Articles

Research articles were selected based on the following criteria: (a) primary studies of how an individual or team member develops psychological safety; and (b) studies illustrating environments supportive of psychological safety. Schematics were created (Table S1) emphasizing the research question, research design, sample size, and result. These articles were reviewed to determine the factors in the work environment which contributed to psychological safety. Identified factors were then sorted and grouped based on common characteristics. They were reviewed to identify gaps and areas that need further study. Study articles that focused on tool review and testing were not included in the study, nor were articles on psychosocial studies.

Findings

Themes identified were grounded in the interpersonal contextual factors. Two major themes iden-

tified were leadership behavior and network ties. Leadership behaviors were further divided into subcategories: leadership inclusiveness, change-oriented behavior, trustworthiness, and ethical leadership. The behaviors of leaders played a critical role in promoting psychological safety. Leaders are pivotal for removing the constraints that often discourage followers from expressing their concerns and other ideas. Multiple studies have identified different leadership behavior as key antecedents of psychological safety (Bienefeld & Grote, 2012; Carmeli & Gittell, 2008; Detert & Burris, 2007; Edmondson, 1996, 1999; Halbesleben & Rathert, 2008; Hirak, Peng, Carmeli, & Schaubroeck, 2012; Li & Yan, 2009; Milliken, Morrison, & Hewlin, 2003; Nembhard & Edmondson, 2006; Probst & Estrada, 2010; Rathert, Ishqaidef, & May, 2009; Schaubroeck, Lam, & Peng, 2011; Schulte, Cohen, & Klein, 2012; Walumbwa & Schaubroeck, 2009; Wang & Hong, 2010). Network ties, the second theme identified, highlights the significance of a positive relationship between the leader and the team member(s) in the development of psychological safety.

Leader Inclusiveness

Leader inclusiveness, defined as "words and deeds by a leader or leaders that indicate an invitation and appreciation for others' contributions" (Nembhard & Edmondson, 2006, p. 947), has been found as one of the leadership behaviors that promote psychological safety. Nembhard and Edmondson (2006) suggested leaders that indicate an invitation and appreciation for team members' participation can be perceived by members as accepted and valued, therefore increasing psychological safety. Nembhard and Edmondson (2006) investigated factors which promote engagement in quality improvement work in the interprofessional healthcare setting; they found leader inclusiveness predicts psychological safety.

Hirak et al. (2012) conducted a study with 277 unit members from 67 work units in a large hospital in Israel and examined the relationship between leadership inclusiveness and unit performance. The authors reported that leader inclusiveness plays a significant role in facilitating psychological safety, thereby potentially enabling the unit to better learn from its failures and, in turn, enhance its performance. This is congruent with other studies that found leaders who exhibit openness, accessibility, availability, fallibility (Edmondson, 1996, 2004; Nembhard & Edmondson,

2006), and approachability (Milliken et al., 2003) lower the threshold for fear of interpersonal risk which aids team members in work engagement and innovation, thereby potentially increasing group performance. In a time-lag study (10 months) by Detert and Burris (2007), they reported leadership openness consistently showed to be a significant predictor of employee's decision to speak up on phase I and phase II study of a time-lag study. Baer and Frese (2003) linked managers' openness to creating a climate of initiative. They reported a significant correlation between climate for initiative and climate for psychological safety. Employees that felt supported and encouraged to bring forth issues and concerns were more likely to feel safe showing initiative without fear of reprisal.

Team leaders must assure that issues and concerns brought forth by team members are given a fair consideration (Edmondson, 2003; Tucker, 2007) and appropriate action (Detert & Burris, 2007; D. Wang & Y. Hong, 2010). This is congruent with findings in which Probst and Estrada (2010) reported the perceived supervisor's responsiveness and degree of policies enforcement is a predictor of accident underreporting in five industrial facilities.

Change Oriented/Empowering

Improvement is one of the desired consequences of psychological safety. Improvement implies change. Rathert and Fleming (2008) described continuous quality improvement (CQI) leadership behaviors as making team members feel valued for their contributions, motivating team members to embrace shared goals, getting facts before making decisions, and facilitating communication across professional boundaries. Such behaviors will enhance the interpersonal dynamics and effective teamwork across disciplines, thereby increasing the perception of psychological safety. Nembhard and Edmondson (2006) found that team leaders who facilitated collaboration across professional boundaries increased psychological safety among lower status team members. Such teams were characterized by interpersonal trust and respect, and were more likely to participate in quality improvement efforts.

Several studies examined the employee's perception of attributes of the work environment to better understand the variables that can facilitate success on quality improvement implementation (Halbesleben & Rathert, 2008; Rathert, Ishqaidef, & May, 2009; Rathert & May, 2008). The authors reported management style, characterized by encouraging employee's

vigilance to their work processes and empowering them to influence change without fear of reprisal, creates the climate of psychological safety that in turn facilitates learning from failure. This is congruent with a related study done by Rathert et al. (2009). Rathert and colleagues described management style which supported CQI influenced outcome variables including psychological safety. Wang and Hong (2010) found that supervisory support can increase team psychological safety which can lead to team creativity.

Leadership styles that support quality improvement efforts most likely foster an environment with high-quality relationships. High-quality relationships (Carmeli & Gittell, 2008), as manifested by shared goals, shared knowledge, and mutual respect, create a positive social context in which people feel safe to perform and to engage in work processes and tasks that lead to increased perception of psychological safety.

Trustworthy

Edmondson (2004) noted that team members' trust toward the leader is needed to develop psychological safety. Further, such trust is not related to rational expectations, but rather is conceived in a relational way in which "choices are more affective and intuitive rather than calculative" (p. 243). When members have a strong and favorable emotional connection with the leader, this positively influences the team members to be open in sharing information with the team (team members and leader) in a way that promotes team performance (Schaubroeck et al., 2011). Such trust is associated with the expectation that the leader supports a team context of respect which allows members to speak up without fear of recriminations from each other or the leader.

Schaubroeck et al. (2011), in their study, suggested that the leader's behavior, transformational leaders and servant leadership, can foster cognitive and affective base trust that can in turn promote psychological safety. Transformational leadership refers to leader behaviors and communications that elevate followers' interest in furthering the collective purposes of groups and organizations (Bass, 1985). Servant leadership is conceptualized as a leadership approach that emphasizes serving others, building a sense of community, emphasizing teamwork, and sharing power (Walumbwa, Hartnell, & Oke, 2010). The authors argued that transformational leadership can elicit cognitive-based trust while servant leadership corresponds to affective base trust. Drawing from McAllister's (1995) framework, the authors suggested

that once employees reach a cognitive level of trust, they are more ready to develop affective-based trust.

Along the same line, Li and Yan (2009), also drawing from the McAllister (1995) assumption, examined the relationship of trust climate in developing the level of psychological safety and how it impacts task performance. The authors argue that cognitive trust lays the foundation ensuring the feeling of safety to express ideas and concerns. In addition, affective trust helps reduce the fear for the potential loss, as a result of taking interpersonal risks, fortifying individual psychological safety. The results of their study showed a mediating effect of psychological safety between climate of trust and task performance. Perceived trust among team members creates a safe environment which promotes positive psychological conditions that lead to increase task performance.

Team leaders must assure that reflection follows action (Edmondson, 2003; Tucker, 2007) and must be given fair considerations (Detert & Burris, 2007; Wang & Hong, 2010). This is congruent with the findings reported by Probst and Estrada (2010) that the perceived supervisors' responsiveness and degree of policy enforcement is a predictor of accident underreporting in five industrial facilities.

Ethical Leadership

Conscientiousness, agreeableness, and neuroticism, derived from Brown and Treviño (2006), are the three individual traits that Walumbwa and Schaubroeck (2009) included in their study, linking ethical leadership to psychological safety. Ethical leaders are described to value honest and truthful relations with their subordinates. They act according to their "fundamental values and beliefs, rather than to respond to external pressures and transitory interests" (Walumbwa & Schaubroeck, 2009, p. 1276). As cited previously from other studies, the authors agree that leaders' openness and truthfulness can promote interpersonal trust and mutual respect within the team. In addition, leaders that demonstrate high personal moral standard create a work environment that hinders social undermining, blaming, and unfair punishments (Rathert & Fleming, 2008; Walumbwa & Schaubroeck, 2009). Employees that perceive their leaders to have sufficient ability, benevolence, and integrity will engage in interpersonal risk taking. The result of Walumbwa and Schaubroeck's (2009) study found that ethical leadership predicted psychological safety.

Network Ties

Drawing from social learning theory, in which learning is described as a relational activity involving human interactions, Carmeli (2007) posits that social capital is an important factor that builds psychological safety. Through the interactions among and between participants, better understanding and knowledge are created. At the same time, the quality of interpersonal relationships that arise from this interaction creates a shared perception of safe interpersonal risk taking (Carmeli, 2007). Schulte et al. (2012) argued that emergent team states and team social network ties are each key antecedents of the other; that two are mutually influential and coevolve over time. In other words, the team member's perception of the team and the team member's social network are likely to coevolve. In a dyad or group interaction, each individual brings his/her own beliefs and perceptions based on their previous experiences. Each team member reacts to a situation based on his/her previous knowledge and beliefs, which in turn can influence other beliefs and perceptions and, consequently, their actions/reaction.

Schulte et al.'s (2012) framework and findings illustrate the varied, complex, and intertwining mechanisms by which team members' perceptions of their team's psychological safety and team members' ties, of advice, friendship, and difficulty, may coevolve. Implications from this study support several studies previously mentioned. Leader inclusiveness that can be characterized by seeking opinions and suggestions from team members can increase perceived psychological safety. This is related to the "reaction mechanism" which refers to an individual perception, based on the network ties they receive, and may influence the individual's subsequent perceptions of the team. Other mechanisms that are found to support the relationship between network ties and psychological safety give confirmation to the importance of leadership involvement in fostering and increasing psychological safety of the team. Prospective action refers to the mechanism in which one's perceptions of the team influence the ties he/she "sends" and assimilation refers to the mechanism where one's perception of the team becomes similar to those to whom they send ties.

Discussion

This review set out to examine the current literature regarding the contextual factors that foster psy-

chological safety. The findings show the complex dyadic interplay between leaders and team members. The current literature supports the significant role of leaders as one of the major contextual influences in promoting a psychologically safe environment. The important consequences of psychological safety are profound. Employees or team members who feel psychologically safe tend to engage in more quality improvement efforts (Nembhard & Edmondson, 2006), they are more open to learning from failure (Carmeli & Gittell, 2008), and have less workarounds (Halbesleben & Rathert, 2008). Furthermore, psychologically safe staff also tend to be more engaged in their work (May, Gilson, & Harter, 2004; May et al., 2004), thereby increasing job performance (Detert & Burris, 2007; Edmondson, 1999; Hirak et al., 2012; Li & Yan, 2009; Schaubroeck et al., 2011). In the healthcare arena, where stakes in delivering high-quality care are higher, the consequences of a psychologically safe environment become vital in ensuring a positive performance outcome. Improvement in patient safety could stem from identifying concerns and issues and correcting imperfect processes. With the increasing and ever-changing demands in health care, it is imperative to gain a better understanding of the factors that foster psychological safety. This can better equip organizations and their leaders to promote a climate of psychological safety.

The findings of this integrative review suggest that there are specific leadership behaviors, rather than generically positive or personalized behaviors, which may be needed to offset the perceived interpersonal risk of employees in voicing concerns and issues that can further open the door for improvement efforts, elimination of workarounds, and increasing employee work engagement. These leadership behaviors—leadership inclusiveness, trustworthiness, change-oriented leaders, and ethical leadership—can elicit psychological safety among employees to overcome employee restraint.

Specific leadership behaviors identified in this review are not conflicting, but complementary. Leadership behaviors and network ties are attributes an organization can modify and develop by training or other types of interventions. The challenge lies in how to cultivate a leader's ability to identify and implement specific leadership behaviors warranted for a specific situation. Edmondson (2004) suggested that "practice fields," referred to as "dry-runs" or simulations, may enable leaders to practice and learn from failure without the real consequences. However, there is

much more to be learned. Studies still report employees' reluctance to voice their concerns and issues (Detert & Edmondson, 2011; Milliken et al., 2003). The airline industry has a long-established "just-culture" practice (Dekker, 2007), which means that their crew members feel safe and supported when voicing issues and concerns. In the most recent study on Airline Company, Bienefeld and Grote (2012) revealed that crew members are still reluctant to speak up even though they are aware they should for safety. The question regarding why and what makes someone decide it is safe to speak up about their concerns and issues continues. Edmondson (2004) described psychological safety as interpersonal beliefs that can vary from team to team, even to the organization with strong context and culture.

The literature shows that there is room to explore psychological safety in healthcare settings. Organizations in high-reliability industries like health care are under tremendous pressure to improve the patient experience and increase the overall value of health care, to include achieving basic day-to-day operational effectiveness. Further research might be warranted to examine specific factors employees and healthcare clinicians consider when making a choice of speaking up or not.

Conclusion

Psychological safety is grounded in elusive interpersonal beliefs and predictions. Although studies in a variety of work settings make explicit that there are actions leaders can take to build psychological safety, it cannot be mandated or altered directly. In this sense, theory and practice related to psychological safety must be advanced by research. Specific leadership behaviors found in this review, leadership inclusiveness, trustworthiness, change-oriented leaders, and ethical leadership, can foster a psychologically safe environment. The development of such leadership behaviors must incorporate cultivation of the different domains of leadership. Leadership development programs must be designed to cultivate the ability of a leader to identify when to implement a specific leadership domain, being sensitive to the individual needs and context, in order to develop and sustain a psychologically safe environment. The complexity and ever-changing environment in health care and the demand for safety, efficiency, and effectiveness require a leader that can adapt and engage in behaviors as the situation warrants. An examination of specific leaders' behav-

iors that establish psychological safety highlights the importance of understanding the development of each behavior, in addition to its application synchronous with the need of team members.

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Supporting Information

Additional Supporting Information may be found in the online version of this article at the publisher's web-site:

Table S1. Schematic Table