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CREATING A CULTURE OF TEAMWORK THROUGH THE USE OF THE TEAMSTEPPS FRAMEWORK:

A review of the literature and considerations for Nurse Practitioners

Abstract

Teamwork is essential for patient safety as highly functioning teams make fewer errors. In high acuity academic medical centers, care delivery is complex and ever-changing, creating a high-risk environment for safety concerns. These intricate settings demand a collaborative approach to care delivery, where structured methods of teamwork and communication are engrained in day-to-day practice. With teamwork being a critical component of patient safety and communication failures likened to preventable medical errors, hospitals are looking to bolster leadership training and improve team dynamics. TeamSTEPPS is a proven method shown to enhance teamwork, communication, leadership, and patient satisfaction. TeamSTEPPS provides an evidence-based framework to optimize patient outcomes by improving communication and teamwork skills among healthcare professionals. Current literature on teamwork and communication demonstrates that nurse practitioners are uniquely positioned to improve team performance through the use of the TeamSTEPPS framework.

Keywords: TeamSTEPPS, teamwork, leadership, communication, patient safety, nurse practitioner

Introduction

Team training has been studied extensively in health care, with research emphasizing the importance of strategic implementation of training programs on improving patient safety, performance outcomes, staff attitudes, perceptions, and overall healthcare delivery. There is comprehensive research on team training to strengthen attitudes, increased knowledge, and improved behavioral skills in high-risk fields such as aviation, military, nuclear power, and business (AHRQ, 2014). Many institutions utilize standard leadership courses and conferences for team building, however; there is no standard for leadership education in healthcare.

High acuity academic medical center settings are complex, dynamic, and highly process-oriented; thus, they are recognized as a high-risk environment for patient-safety concerns (Jones, Podila, & Powers, 2013). There are frequent rotations of residents, students, and attending physicians on these academic medical teams, thus posing the risk of challenging communication and team dynamics. Poor teamwork and communication strategies among staff are associated with increased medical errors, which have the potential of harming patients (Vertino, 2014). As the role of the advanced practice registered nurse (APRN) continues to evolve and more novice APRNs are coming into practice (AANP, 2019), it clear that there needs to be an understanding of teamwork, team building, and communication, and leadership

in the workplace. APRNs, being the cornerstone of team consistency in many academic medical center, are uniquely positioned to enhance team dynamics.

With teamwork being a critical component of patient safety, as well as communication failure likened to preventable medical errors, hospitals are looking to bolster leadership training to improve team dynamics (Vertino, 2014). Team strategies and tools to enhance performance and patient safety (TeamSTEPPS) is an evidence-based framework and training initiative proven to enhance teamwork, communication, leadership, and patient satisfaction (Sheppard, Williams, & Klein, 2013). TeamSTEPPS looks at how leadership can affect the team process and outcomes, in addition to exploring different tools for leading teams such as debriefs, huddles, and briefs (AHRQ, 2014). TeamSTEPPS is comprised of five core principles: Team Structure, Leadership, Situation Monitoring, Mutual Support, and Communication (AHRQ, 2014). This framework offers a powerful solution to improving collaboration, leadership, and communication within organizations, specifically in high acuity academic medical centers.

Background

The Institute of Medicine's (IOM)'s publication *To Err is Human* increased awareness of medical errors in the United States (Kohn, Corrigan, & Donaldson, 1999). This report estimated that preventable medical errors are associated with upwards of 98,000 deaths annually (Kohn, 1999). A more recent evidence-based estimate of patient harm associated with hospital care documented the number of deaths related to medical errors to be more than 400,000 per year (James, 2013). In addition to the loss of human life, harmful medical errors are estimated to cost $17.1 billion annually (Van Den Bos, Rustagi, Gray, et al., 2011).

Numerous studies have examined factors associated with medical errors. Most noteworthy, and cited in over 600 publications, was a retrospective review of an emergency departments risk management cases (Morey, Simon, Jay, et al., 2002). The investigators of the study concluded that 43 percent of medical errors resulted from problems with collaboration and teamwork. Additionally, the authors determined that structured teamwork training could have mitigated 79 percent of these medical errors (Morey et al., 2002). Further, research indicates that effective communication and teamwork are vital to the delivery of high quality, safe patient care (Risser, Rice, Salisbury, et al., 1999 & King, Battles, Baker, 2008) There is increasing evidence that coordinating care through interprofessional collaboration and teamwork can help to reduce medical errors and improve healthcare quality (RWJF, 2018).

Several organizations, including The Joint Commission (TJC), Institute for Healthcare Improvement (IHI), the National Quality Forum (NQF), and the Accreditation Council for Graduate Medical Education (ACGME), have acknowledged the significance of teamwork and communication regarding patient safety. As a direct result of the IOM report, TeamSTEPPS was established as an evidence-based tool, aimed at optimizing patient outcomes by improving communicational and teamwork skills among the healthcare team (RWJF, 2018). Effective leadership is what holds a team together and helps ensure that the medical plan is implemented, reviewed, updated, and continuously monitored and that there is an environment of mutual support in the team (AHRQ, 2014).

TeamSTEPPS was developed through the collaboration of the Department of Defense (DOD) and the Agency for Healthcare Research and Quality (AHRQ) to create a systematic, team-training program aimed at enhancing teamwork and improving patient safety (Vertino, 2014). This evidence-based program utilizes specific language

and tools meant to enhance the effectiveness of team members about leadership, communication, situation monitoring, and mutual support (RWJF, 2018). This framework suggests that skills of leadership, communication, situation monitoring, and mutual support in the context of an appropriate team structure improve team performance, attitudes, and knowledge (Castner, Foltz-Ramos, Schwartz, et al., 2012). The implementation of TeamSTEPPS' systematic approach for teamwork integration into practice can improve the quality, safety, and efficiency of healthcare delivery while improving staff perceptions and attitudes regarding communication and teamwork (Vertino, 2014 & RWJF, 2018 & Haynes & Strickler, 2014). TeamSTEPPS can be utilized in many medical settings; also, it can guide the user and trainer through the program regardless of the medical training the personnel may have. Because it has been tested in a many medical organizations, the Agency for Healthcare Research and Quality reports it is a reliable framework for the team training (AHRQ, 2014).

Literature Review

A comprehensive literature review was conducted focusing on the following aspects of team training: 1) team training and patient safety, 2) team-training and performance outcomes, and 3) TeamSTEPPS training and health care. This literature review included an evaluative account of the literature, to identify relevant themes, trends, and theories. The knowledge gained from the analysis and synthesis of this evidence supported the organizational implementation of the TeamSTEPPS training and tools to improve teamwork and leadership within the organization.

Medical team research precedes the patient safety movement, with the DOD's integration of teamwork into healthcare nearly four years before the release of the IOM's report. In 1995, the DOD embarked on a multi-year research project introducing formal team training based on aviation

Crew Resource Management (CRM) training for health care (Morey et al., 2002). Researchers utilized a quasi-experimental, control group, pre-test/ post-test design to evaluate the effectiveness of formal team training on emergency department caregiver teams. The principal findings of this study highlighted an improvement in team behaviors and a significant decrease in medical errors from 30.9% to 4.4% (Morey et al., 2002). The researchers also noted that effective leadership functions in support of teamwork implementation and needs to be performed at various levels of the organization. Throughout the organizational structure, having sustained commitment and active involvement of executive leaders is necessary as leaders are often looked at as role models within instructions (Morey et al., 2002). The vertical integration of leadership support for teamwork practices can be seen through mentoring and coaching of teamwork behaviors in respective areas (Morey et al., 2002). Although dated, this pivotal study signified the importance of team training and prompted further studies focused on team performance and patient safety.

In another study, researchers set out to determine the effect of teamwork training on employees' perception of the culture of safety in the emergency department (ED) of an extensive hospital system in Memphis, Tennessee (Jones et al., 2013). TeamSTEPPS was the chosen method of team training for this study. This independent sample, a comparison study, utilized the AHRQ's patient safety culture survey (PSCS) to quantify staff perceptions in a pre-test/ post-test design. The PSCS consists of 12 domains that interplay to build a culture of safety. The results of this study demonstrated a nine percent increase for an average score in each of the 12 domains post-training, indicating improved perceptions regarding the culture of safety (Jones et al., 2013). This research emphasized the importance of team training on the culture of patient safety.

More than thirty years of research have been conducted on team performance in a variety of high-risk settings (AHRQ, 2014). Of these studies, one meta-analysis was pivotal in documenting the

relationship between team training and performance outcomes. Salas, Cooke, & Rosen (2008), conducted a comprehensive review of more than 160 empirical articles on team training from 1955 through 2007 to gauge the effectiveness of team training programs on team performance. Although not specific to training in health care, all studies evaluated were conducted in environments in which poor performance posed severe adverse consequences or death. Results of this meta-analysis confirmed a moderate, positive relationship between team training interventions and team performance (Salas et al., 2008). Additionally, factors such as training content, team stability, and team size were found to impact the effectiveness of team training programs. The authors concluded that team-training programs are valuable for improving teamwork processes and performance outcomes (Salas et al., 2008).

Evidence indicates that effective leadership and team training improves teamwork and performance outcomes in a variety of settings. Moreover, research specific to TeamSTEPPS training documents similar findings in health care. Capella, Smith, Philp, et al. (2010), sought to determine if TeamSTEPPS training improved teamwork behaviors and efficiency of care delivery to trauma patients. This pre-test/post-test design used the Trauma Performance Observation Tool (TPOT) to assess teams' performance during trauma resuscitations (Capella et al., 2010). These researchers found that team performance during trauma resuscitation improved across all teamwork skills post-training and that better communication and leadership does in fact lead to greater efficiency (Capella et al., 2010). Furthermore, clinical care delivery was enhanced, as evidenced by a significant decrease in time from patient arrival to diagnostic testing and treatment (Capella et al., 2010), which leads to an overall improvement in outcomes.

In a system-wide implementation of TeamSTEPPS, a healthcare system trained more than 30,000 employees across 14 hospitals, two long-term care facilities, and outpatient areas (Thomas & Galla, 2012). The AHRQ's PSCS was used to document staff perceptions on patient safety culture. Results revealed a significant improvement in the PSCS post-implementation, strengthening the link between TeamSTEPPS training and organizational outcomes (Thomas & Galla, 2012). Included in their findings was that ongoing team engagement from the TeamSTEPPS curriculum provides an infrastructure for implementation that includes leadership at the executive level as well as interdisciplinary role models from the front-line staff to motivate for change and keep up engagement (Thomas & Galla, 2012).

Communication failures can be linked to medical errors, and teamwork is critical to patient safety as teams that function at the highest capacity make fewer errors (Vertino, 2014). TeamSTEPPS has been used in quality improvement project with nursing staff to see if education about TeamSTEPPS can improve teamwork among nurses. TeamSTEPPS can promote positive changes in nursing staff as related to team structure, leadership, situational monitoring, mutual support, and communication. Sheppard et al. (2013), also implemented TeamSTEPPS in two large healthcare systems to improve patient safety. The researchers concluded that implementing TeamSTEPPS into these institutions improved teamwork, communication, and patient satisfaction and has improved the culture of safety in the sample hospitals.

There are limitations to TeamSTEPPS. Barriers that prevent TeamSTEPPS from reaching full potential are lack of administrative support and resources, lack of training focus to address hierarchal differences and incivility within the healthcare team, inadequate TeamSTEPPS instruction and simulation practices, and educators' resistance to change (Clapper & Ng, 2013). Clapper & Ng (2013) noted that in healthcare the physicians sometimes see themselves as the natural leader or authority; thus, when implementing a team approach, having an authoritarian exercising control. This can create fear and vulnerability within the group which can lead to mistrust and defensiveness. Physicians often lack formal leadership training, leaving them without education or experience to know how to build a team and communicate effectively (Clapper & Kong, 2012).

This is just another perspective as to why APRNs are positioned to lead the team to explore just culture and candor within the healthcare team.

Implications for the Nurse Practitioner

Increasing demands of healthcare, coupled with the mounting complexity of care delivery, has propelled nurse practitioners to be the mainstay of many healthcare teams. The Accreditation Council of Graduate Medical Education's (ACGME) mandated resident work-hour restrictions called for major workforce restructuring, leading to the incorporation of APRNs into many medical and surgical teams (Hunter, Kellogg, Ferguson, et al., 2006). With these restrictions and frequent resident rotations, APRNs are providing off-hour coverage and leading diverse healthcare teams. GME requirements, off-hour coverage, and routine resident rotations cause fluctuations in team structure and function. This ever-changing team dynamic poses a significant risk to communication, team dynamic, and patient safety (IOM, 2009).

Time constants for nurses to focus on leadership instead of patient care can also a factor in leadership development, as priority is always given to patient care. In many organizations, nurses report having a large patient load, which limits their time to take on leadership activities, and are concerned that they may have fewer opportunities to participate in decision-making or leadership development within the organization (Elliot, Begley, Sheaf et al., 2016). Strong teamwork is a critical component of patient safety as communication failure can create medical errors, thus hospitals are looking to supplement team training to improve patient safety in new innovative ways such as TeamSTEPPS (Vertino, 2014).

There is a cost associated with TeamSTEPPs such as cost for materials and identifying and educating TeamSTEPPS trainers. In addition, it will take approximately 200 hours for one person in the TeamSTEPPS implementation year, or about 0.1

full time equivalent (FTE) of an employee. However, the cost of TeamSTEPPS is minimal compared to a cost of $17-29 billion every year that is currently spent on medical errors. The Joint Commission, a national governing body for hospitals and medical organizations, found that in a review of 936 sentinel events in 2015, communication was the root cause of over 70% of the time. (Joint Commission, 2017). With the Institute of Medicine supporting that reducing medical errors could be done with interdisciplinary team training, like a TeamSTEPPS framework, the cost to saving ratio is low. (IOM, 2009).

An organization can implement the TeamSTEPPS framework in a few steps. After identifying the need for improving communication and teamwork, and getting the organization and senior leadership to support a change, a trainer can attend the training session either remotely or in person. With the Centers for Medicare and Medicaid, one of the largest payers of healthcare supporting the TeamSTEPPS framework, there is clear evidence to support teamwork initiatives like TeamSTEPPS (AHRQ, 2014).

Conclusion

Decades of research linked team training to improved attitudes, increased knowledge, and improved behavioral skills in high-risk fields such as aviation, military, nuclear power, and business (AHRQ, 2004). Team training has been studied extensively in health care, with research emphasizing the importance of strategic implementation of training programs on improving patient safety, performance outcomes, leadership, staff attitudes and perceptions, and overall care delivery. TeamSTEPPS is built upon the aforementioned comprehensive research and supported by evidence and expert consensus.

This literature review documents the effectiveness of TeamSTEPPS training on improving perceptions of teamwork and provides a foundation for future initiatives, patient safety, and quality outcomes. As APRNs continue to expand their role as leaders

of interdisciplinary healthcare teams, focused teamwork training will prove beneficial. Through the use of TeamSTEPPS, APRNs can continue to deliver safe, quality care while building strong, cohesive teams. The APRN nurse leader is challenged with large patient loads and time constraints, limiting their leadership capacity (Elliot et al., 2016). However, these APRNs are uniquely positioned to play a significant role in ensuring safe, quality care, and lead process improvement efforts within medical centers. Through championing the use of TeamSTEPPS tools, APRNs can embrace their role as leaders and advocate for improved teamwork, communication, and patient safety.

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