Assessing the Workplace Culture and Learning Climate in the Inpatient Operating Room Suite at an Academic Medical Center

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OBJECTIVE: The purpose of this study was to elicit perspectives from operating room (OR) personnel on the workplace culture and learning climate in the surgical suite, and to identify behaviors associated with a positive culture and learning climate.

DESIGN: Qualitative analyses using survey methodology.

SETTING: Main hospital OR suite at a large academic medical center.

PARTICIPANTS: Nurses, faculty, and residents who work in the OR suite.

RESULTS: To improve the OR environment, survey respondents (n = 60) recommended: (1) promoting a respectful "no blame" culture; (2) promoting social cohesion and cross-collaboration; (3) improving communication regarding performance feedback and patient safety; (4) building small interdisciplinary teams working toward common goals; and (5) improving learning opportunities that support professional growth.

CONCLUSIONS: Opportunities exist to improve the OR workplace culture and thereby the learning environment. (J Surg Ed 76:644–651. © 2018 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

KEY WORDS: Workplace culture, Learning climate, Learning environment, Organizational culture

COMPETENCIES: Patient Care, Professionalism, Interpersonal and Communication Skills, Medical Knowledge

INTRODUCTION

The health of society requires quality medical care delivered by healthcare providers who work collaboratively in an increasingly complex environment.[1] More than 40% of healthcare providers show signs and symptoms of burnout including physical, mental, and emotional exhaustion. This likely impairs professional development and may lead to medical conditions, including depression, anxiety, substance abuse, and even suicidal ideation.[2,3]

The Accreditation Council for Graduate Medical Education is addressing physician burnout and its potential consequences for healthcare quality by emphasizing patient safety, healthcare quality, care transitions, supervision, duty hours, fatigue management and mitigation, and professionalism.[4] Impoverished learning environments for healthcare trainees can also diminish participation and learning, leading to emotional exhaustion, depersonalization, and a diminished sense of personal accomplishment.[5,6]

Two different categories of burnout exist. The first is existential relating to a loss of purpose in medicine and professional uncertainty.[7] The second is circumstantial associated with either personal challenges or a difficult work environment due to poor interpersonal relationships, high caseloads and patient acuity, long hours, interfacing with the electronic health record, and an inefficient practice system.

"Workplace culture" is the phenomena of how people treat each other and work together. "Learning climate" describes the atmosphere of a work group that stimulates

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and supports learners' participation in that environment. Both influence the overall training experience.

Anesthesiology and surgery residents spend important parts of their residency in the hospital inpatient operating room suite (OR).[8] Patients are often critically ill undergoing a variety of operations across many surgical specialties. Thus, although the OR provides a rich clinical experience, anesthesiology residents describe dissatisfaction with their OR learning experience, citing difficult interpersonal interactions and a negative work environment.[9]

Conflicts occur regularly within OR teams,[10] negatively disrupting teams and patients. Therefore, the focus of this study was on experiences that contribute to OR conflict. We studied how, OR personnel expect to modify these systems to improve the learning climate.[10] The system-related contributions can be traceable to a variety of characteristics including that: (1) OR teams are comprised of faculty, residents, nurses, and other providers; (2) conflicts may be generated due to a lack of adequate education and training for OR staff; (3) leadership may not be engaged to mitigate conflict; and (4) lack of understanding about which conflicts are best addressed by OR staff or caused by system issues that need to be addressed by individuals responsible for those systems.

Purpose statement

The purpose of this phenomenological study[11] is to elicit perspectives from nurses, scrub technicians, residents, and faculty working in the OR to describe the experiences that define the workplace culture and learning climate in the OR, and to identify behaviors associated with a positive culture and learning climate.

MATERIAL AND METHODS

The Stanford Institutional Review Board determined this study was exempt from review, as it was not considered Human Subjects Research by federal guidelines. The Standards for Reporting Qualitative Research were followed.[12]

This study is designed to address our purpose statement through a social constructivist, interpretivist lens, and research design.[10,13] We obtained qualitative data by using survey methodology to develop an understanding of important processes and outcomes in the OR, focusing on culturally derived and historically situated interpretations.[13] We used written surveys, with both structured and open-ended questions, to gather data from residents, nurses, and faculty. Faculty and residents who work in the OR regularly from the departments of general surgery, anesthesiology, orthopedics, neurosurgery, gynecology, urology, and plastic surgery were invited to participate. All (n = 110) OR nurses were invited to participate.

Survey instrument

Based on the experience of the research team and the purpose statement, 6 survey questions were formulated (Appendix 1). The survey instrument was piloted on a separate group which included one head nurse, a chief resident, and several faculty from 2 surgery departments. Suggestions from this group were used to reword statements. The survey included questions on the positive and negative aspects of the OR learning environment and work culture, as well as recommendations on how to improve the OR workplace culture and learning environment.

Sampling and data collection

We invited potential participants (nurses, faculty, and residents) through an OR email distribution list. The survey was open from August 1 to October 1, 2016. Efforts to recruit participants continued for 3 months until saturation was attained, i.e., when the responses no longer resulted in generation of new themes.[14] Participants were offered a $10 gift card to complete the electronic survey (paper versions were available on request). To protect participant confidentiality, no identifiable information was collected from the respondents.

Data analysis

Responses to open-ended questions on the survey were analyzed using team-based qualitative software (MAXQDA) with an inductive iterative approach.[12] The iterative coding and codebook development process consisted of several stages, with researchers (P.T., C.T.) identifying themes and subthemes at each stage, independently, followed by a theme and subtheme reconciliation process based on discussion. One stage of analysis involved the entire research team, with the results from the first 2 stages shared among the research team, focusing on important themes and subthemes and illustrated with quotes from the surveys. All themes and subthemes were reviewed and discussed by the team of authors until 100% agreement was reached. For triangulation the main study findings were shared during Grand Rounds in the anesthesia and surgery departments, and also with nurse management during their practice council meeting. Participants at grand rounds provided levels of agreement or disagreement about the fairness of the interpretations of comments and they provided additional perspectives. The final stage involved the entire research team, using the themes and subthemes and participant verification information, to propose recommendations that may help create a positive learning environment. Three of the researchers (P.T, N.H., and A.M.) are practicing anesthesiologists at the institution, while the remaining three are nonphysicians from outside the institution.

RESULTS

The themes identified from analyzing 60 responses are presented with illustrative quotes in Table 1. We were unable to identify the type of employee or medical discipline of each respondent as the survey recipients received an anonymous link to maintain confidentiality through an email list that is nontraceable.

TABLE 1. Illustrative Quotes of Survey Response Themes

Positive aspects of workplace culture	Positive aspects of learning environment
Expectation of excellence: "I enjoy having multiple people with different roles and expertise working together to care for the patient. In this way, the OR is very functional." "Team work and times when the focus stays on excellent patient care. Culture of excellence" **Supportive culture:** "There is a very collegial environment. It makes it easy to ask for help when necessary and to clarify/discuss any concerns." "Surgeons and anesthesiologists and nurses try to have a collaborative relationship. Residents are treated with respect as well. Poor behavior is not tolerated"	**Different forms of learning:** "Having time during the day to spend on teaching, especially with the more junior residents who are early on in their training." "Some people seem to be understanding if a procedure takes a little longer because a resident or fellow is learning." **Kindness:** "Most everyone seems responsive to kindness. If someone sets the tone of being kind, I have noticed it can definitely change the tone of the entire day." "The diverse backgrounds of each of the team members in the OR provides an ideal environment for learning, as we can all learn something from one another."
Negative aspects of workplace culture	**Negative aspects of learning environment**
Lack of respect: "The environment is full of ongoing changes but little respect and value being given to the surgical team who work very hard caring for patients every day." "No respect for each other." **The OR power structure:** "Some instances where power dynamics seems to build resentment. Sense of entitlement by surgeons can be a large contributing factor." "I find that staff (nurses, physicians, etc.) can be territorial at times." **Production pressure:** "Sometimes creating "metrics" that the nurses, staff, and doctors have to comply with for the purpose of achieving some administrative goal creates extra work and, in some cases, friction, between healthcare providers." "Not everyone seems to be focused on the same priority. Many members of the team seem like they are only there to get paid and not to work hard for the benefit of the team. Very little teamwork between different members of the team (RN will help RN to get lunch break, but RN will not help MD resident or attendings)."	**Production pressure:** "The pressure to complete cases and turnover quickly adds stress when residents are learning to perform procedures. This may detract from the resident's experience or discourage the attending from allowing the resident to do more of the case." "The time pressure makes teaching in anesthesia very difficult—if an anesthesia resident is learning a new procedure, the surgery team is likely to hassle the team about delays, even if later on the surgeons leave and let the medical students close. It feels one sided and unnecessary." **Disrespectful behavior:** "Decreased level of maturity and situational awareness among the staff. Loss of professionalism among a small cohort." "Bullying from surgeons." **Teaching culture:** "Individual insecurities can get in the way of the learning environment. It is a high stress environment, where speed of action and each individual's reaction time/actions can significantly impact patients and their outcomes. This kind of high stakes setting can squash learning opportunities." "People not interested in adapting to new models of working and teaching."
Recommendations to improve workplace culture	**Recommendations to improve learning environment**
Organizational change: "Build small multidisciplinary teams working together toward a common goal." "Align incentives of RN's, scrubs, MDs, orderlies, everyone." **Improve interprofessional communication**: "Teaching/emphasis on why we should have no communication barriers to improve patient safety but also to make it a more enjoyable working environment." "Everyone should do their best to learn the names of others in the OR. There should be some effort to say hi, introduce one another, and address the person by their names." **Respectful work environment:** "Treating one another with respect, gratitude, trust, and integrity." "It would be ideal to have respect for the expertise of everyone in the room."	**Building teamwork and respect:** "The reason for this is that if being rushed then our teachers also get stressed which creates for not only a poor learning climate but also a bad work environment." "Decrease enforcement/blame regarding "room in" time." **Opportunities for learning:** "Make everyone realize that having students and learners is a great opportunity; education helps shape the future and affects many people." "Include more learners from all professions. I find that if a case has a surgical resident, an anesthesia resident, and a scrub or circulator trainee, then everyone has a pro-learning groove that day."

CULTURE

Positive aspects of workplace culture

The first theme identified is the expectation of excellence in a major academic medical center where the quality of professionals is high, and the teamwork spirit focuses on patient-centered care. The second theme centered on a supportive culture driven by collegiality, respect, collaboration, and camaraderie.

Negative aspects of workplace culture

The 3 major themes identified as barriers to a cohesive OR culture were: (1) lack of respect, represented by aggressive behavior, a blaming culture, lack of sensitivity for cultural diversity, and negative staff attitudes, (2) the OR power structure and how that can disrupt optimal communication among health professionals working in the OR, and (3) production pressure dictating the workplace tempo in the OR and leading to stress, poor communication, and less time for teaching.

Recommendations to improve workplace Culture

Recommendations for improving the workplace culture included:

- Driving organizational change that promotes cross-collaboration through building dedicated teams.
- Improving interprofessional communication by promoting social interaction among teams, incorporating feedback, and aligning motivation for teamwork.
- Promoting social cohesion with zero tolerance for bullying and blame, and without fear of retaliation to create a respectful work environment.

LEARNING ENVIRONMENT

Positive aspects of learning environment

Themes that emerged were:

- The different forms in which learning can take place in the OR, the existence of an institutional culture to support teaching with a variety of cases, the sentiment that people enjoy what they do, and the fact that learners can have autonomy without compromising patient safety. Peer-to-peer teaching, learning from nurses, and immediate feedback were other themes identified related to the learning environment.
- Kindness, consideration for learners, and an attitude in which people understand that teaching is one aspect of patient care.

Negative aspects of learning environment

Production pressure was identified as a major barrier in facilitating a positive teaching environment. An increased caseload contributes negatively to the learning environment, impacting OR teaching. Another related theme identified was disrespectful behavior, associated with lack of professionalism and a persistence of the blame culture. A blame culture refers to individuals avoiding being at fault for a given problem, leading to other staff feeling blamed for certain situations like a delayed start or adverse event. This blame culture may be especially prominent in times of acute stress and urgent situations. Insecurity, timing of teaching, and level of supervision were cited as playing a role in preventing effective teaching in the OR.

Recommendations to improve learning environment

Recommendations included building teamwork and respect through less production pressure, communicating openly, and promoting a positive workplace environment. Another identified theme related to the learning environment was the importance of opportunities for learning in the OR, with emphasis on the relevance of teaching and improving situational awareness among the healthcare team.

DISCUSSION

This study was done using qualitative methods to elicit and investigate residents, nurses, and faculty perceptions about the OR culture and learning climate and identify targets associated with a more positive learning environment. The positive aspects of the culture described were a focus on the psychosocial and interaction domain where personal, professional, and organizational characteristics played a major role. A quest for excellence and a supportive culture were major aspects of an effective culture, as reflected by the quality of professionals and the sense of collegiality, collaboration, respect, and camaraderie. This finding is supported by previous research on nurse education, which also finds that psychosocial and interaction factors and organizational culture were 2 key attributes of the environment that affected students.[15] These aspects of the learning environment can determine the overall student experience, increasing their self-confidence and satisfaction.

Given the same key attributes described above, institutional culture was viewed by respondents as playing a major role in contributing to a positive learning climate. It influences the majority of participants' individual

interactions, and furthermore supports a culture that emphasizes professional obligation toward teaching students and the need to support this belief to promote learning. Survey participants mentioned important characteristics of the learning environment to include autonomy for trainees during clinical care not impacting patient safety and open discussion among team members when unanticipated changes arose. Friendly, understanding, and appreciative relationships in the work environment were also described as elements contributing to a positive learning environment. Allowing team members to actively participate in care provides an opportunity to apply theory to practice and hence increases trainee's satisfaction with the learning environment.

Teaching and learning components serve an important role for a good clinical learning environment. A key to success in creating a positive learning environment is the approachability of faculty. Faculty should be providing feedback, motivating students, taking time to teach in a wide variety of cases and situations, and preventing communication breakdowns. Modern learning theory emphasizes the need for creation of a safe, supportive social-emotional learning climate.[16] When the quality of supervision is monitored, and feedback provided to the anesthesiologists, patient care improves.[17]

Lack of a respectful environment and production pressure were identified as major negative impact factors for the OR culture and learning environment. The presence of passive aggressive behaviors within different groups, the lack of positive reinforcement for learners, a "blaming culture," and the lack of sensitivity to cultural diversity impair the learning environment. Sometimes these behaviors are characterized as microaggressions, defined as brief social interactions that elicit negative feelings in an individual because of one or more of their identities.[18] From previous qualitative analysis, exemplary OR behavior has been described as an atmosphere that promotes mutual respect between instructors and residents.[19] Disruptive physician behavior interrupts learning[20] and team performance.[21]

Production pressure in an environment that should facilitate teaching provides a conflicting message about what is valued by the institution. Performance metrics to comply with some administrative goal creates extra work and possibly friction among healthcare providers. Simplifying the system and workflow will streamline patient care and enhance the learning environment. Production pressure impacts teaching, such as when anesthesiology attendings are double-covering residents in fast turnover rooms or when surgeons are concerned with their procedure time and take over surgical work from residents. The dynamism of the OR suite results in a high-stress environment that can impact patients and inadvertently suppress learning opportunities.

Another negative aspect of the workplace culture identified was related to the communication gaps among the various professional groups leading to interpersonal conflicts, in particular when staff are not familiar with OR policies or fail to provide information needed in handoffs, thereby compromising safety. Teamwork and communication problems account for a majority of adverse surgical events and were the strongest predictor of surgical error.[22]

As for the learning environment, the importance of a teaching culture was identified as a distinct theme. Specifically, individual insecurity and faculty lack of awareness of conditions for optimal timing of teaching detract from a positive learning environment. Anesthesia residents judge insufficient faculty presence and with poor quality of OR teaching.[23]

Even though this study's findings are similar to other studies, recommendations for a better workplace and learning environment include the following:

1) Ensure a respectful working environment that minimizes fear of retaliation and eliminates the culture of blame and bullying. A better quality of clinical learning climate is associated with better emotional well-being and fewer symptoms of burnout among orthopedic trainees.[24] Burnout is associated with more self-reported errors, decreased adherence to best practices and up to 5 times more medication errors.[25] Work-related bullying, such as withholding information, pressure to not report errors, and ignoring or excluding residents, can directly affect patients.[26] Thirty percent (30%) of general surgery residents report having their recommendations or orders ignored by nurses.[26] A reduction in bullying and blame culture may lead to healthier emotional well-being in practitioners.

2) Promote social wellness among groups that are part of the OR to foster cross-disciplinary and peer collaboration. Poor peer collaboration was the strongest learning climate factor associated with symptoms of burnout.[16] Furthermore, medical students rated positive relationships with faculty as essential for the learning environment to be exceptional.[27]

3) Improve interprofessional and intraprofessional communication to improve feedback and assure patient safety with complete hand-offs. Trainees desire a clearly defined, transparent, and realistic curriculum with specific learning goals and objectives that would also allow instructors to provide students and trainees with more structured feedback.[28] Debriefing in the feedback process initiates a discussion of practice

and gives providers the opportunity to reflect on their routine practice. This is in contrast to the current approach of discussing only negative cases. Debriefing and feedback also allows trainees to develop self- and peer-assessment skills.[29] As such, the learning environment should promote activities that foster interprofessional and intraprofessional activities and longitudinal relationships.[30]

4) Drive organizational change through building small multidisciplinary teams working together toward common goals. Examples of this include creating business and practice efficiencies that make it easier for physicians and nurses to care for patients. Aligning house staff learning goals with overall institutional goals for physician wellness is crucial.[31] The rotational aspect of OR work for residents and nurses leads to constant team rearrangement. This hinders cohesion and meaningful working relationships, which are developed with time and continuity.[32] Within the team setting, marginalized learners are at high risk of psychological distress. It may include anyone who differs from team norms (e.g., position, race, gender, level of extraversion, and social views). "Outsider" status may lead to differing perceptions of the MOR culture and learning environment.[32]

5) Support opportunities to learn so that trainees can thrive. This study's responses advocated for more training opportunities and patience for new staff at all levels to address the continual transition of staff through the main OR and various specialties. Some suggestions included creating opportunities for learning with training workshops, improving situational awareness, promoting and valuing teaching, collaborating in supporting staff in their professional growth, rewarding and acknowledging exemplary role models in the OR, and integrating work and training in a way that is tailored to individual trainees. Based on survey data, opportunities for learning among surgery residents may be lacking from the trainees' perspectives and must be balanced with opportunities and goals of other providers on the team and organization as a whole.[33] Since learning is context dependent, situating it in the authentic activity of the profession is best for effective learning.[29]

Limitations

This study has the usual limitations from an analysis of survey written in results. Additional individual and focus group interviews may have provided richer data. Also, data were collected at a single time point and staff such as residents may perceive an improvement in learning climate.[34] Survey responses were not stratified and analyzed by staff type (e.g., residents, faculty, and nurses) because the survey was sent out as an anonymous link and no identifiable information was collected from respondents. The total number of individuals invited to participate was not tracked and hence the response rate is unknown. A low response rate to the survey may then not be representative of all groups that work in the OR. In addition, there is self-selection bias in which dissatisfied participants or participants with more interest in medical education may be more likely to complete the survey. Lastly, the results may not be generalizable as it was a single institution study.

CONCLUSIONS

The context within which people work and learn is complex with many influencing factors, including personal, social, and organizational factors. Positive aspects of the OR culture included an environment supportive of teaching and learning needs, kindness from OR personnel, and an overall goal of everyone working toward excellence thereby creating a positive learning environment. Identifying a subset of components of workplace culture and learning environment that promote positive learning interactions would allow the design of focused interventions that can effectively target specific problems. A lack of respect between nurses, residents, and faculty and production pressure were identified as major negative factors in the OR culture and learning environment.

Possible strategies proposed by survey respondents were to create a respectful "no blame" culture, promote social cohesion and cross-collaboration, enhance communication regarding performance feedback and patient safety, build small interdisciplinary teams working toward common goals, and improve learning opportunities that support professional growth.

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SUPPLEMENTARY INFORMATION

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.jsurg.2018.09.014.

APPENDIX 1 – SURVEY QUESTIONS SENT TO PARTICIPANTS

- Consider the culture of the OR. Culture refers to such matters as how people treat each other and work together. What are the most positive aspects of the OR workplace culture?
- What are the most negative aspects of the OR workplace culture?
- What recommendations do you have for improving the OR workplace culture?
- In the OR, all staff are learning from each other. In particular, students are learning as they develop applied knowledge, clinical skills, professional attitudes and professional identity, and confidence. Consider the OR learning environment. With respect to the OR as a learning environment, what are the most positive aspects?
- What are the most negative aspects?
- What recommendations do you have for improving the OR as a learning environment?