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Residents' and nurses' perceptions of team function in the medical intensive care unit☆

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Abstract

Background: Team-based care is integral to modern intensive care units (ICUs). Trainee physicians ("residents") serve as core team members who provide direct patient care in academic ICUs. However, little is known about how resident perceptions of ICU team function differ from those of other disciplines. Therefore, we compared residents' perceptions to those of nurses', the other predominant direct caregiver group, in the medical ICU.

Methods: A cross-sectional survey was performed with validated team function scales including presence of a real team, communication quality, collaboration, and coordination. The survey was administered to nurses and residents in medical ICUs in an urban academic medical center. We analyzed differences between nurses and residents both in their responses and in their perceptions of how constructs were interrelated.

Results: Residents felt that the team was more bounded, was more collaborative, and planned its work to a greater degree, but they were less satisfied with communication, compared with nurses. Residents and nurses perceived relationships between team function constructs in very similar ways. Both groups felt that communication openness and collaboration were positively associated but that communication accuracy and timeliness were negatively correlated, revealing an opportunity to improve overall team performance.

Conclusions: We found important differences in the way that ICU nurses and medical trainee physicians, the predominant types of providers caring for the critically ill in academic medical center ICUs, perceive key aspects of team function. These results may be useful to those responsible for administering academic ICUs as well as to residency program directors developing communication- and team-based curricula.

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Multiprofessional care teams form a cornerstone of modern critical care. In 1973, Max Harry Weil [1] highlighted care delivered by teams of medical professionals as a fundamental goal of the developing specialty of critical care medicine. Given the complex nature of critical care, a dedicated intensive care unit (ICU) team, which typically includes intensivists, nurses, respiratory care practitioners, pharmacists, and others [2], enables optimal care for the most severely ill patients [3,4]. Many studies have investigated the benefits of team delivery of ICU care, including its effects on mortality rates, length of ICU stay, provider perception of quality of care, and costs of care [5-7]. Collaboration and effective teamwork have also been shown to improve several dimensions of nursing including job satisfaction, turnover rate, and stress associated with morally challenging situations [8,9].

High-performing ICU teams must overcome a unique set of challenges stemming from the high degree of interprofessional communication and collaboration required from a diverse team whose members constantly change [10]. This can be particularly difficult for trainees who are simultaneously developing their clinical skills. In academic medical centers, this has led to an array of team-training initiatives for residents and medical students, reflected in a focus on educational interventions in the literature on trainees and teams [11]. However, such a focus fails to capture how perceptions of team function vary by role, with comparatively little known about trainee physicians outside the context of an educational intervention. This is an important group to understand because they deliver a great deal of bedside care and therefore have the potential to profoundly impact patient outcomes. More specifically, little research to date has addressed trainee physicians' perceptions of team function in the ICU setting and how these differ from other team members' perceptions. One series of articles has explored the relationship between collaboration and satisfaction for nurses and physicians, with particular focus on the relationship between collaboration in clinical decision-making (such as transfer of patients out of an ICU) and provider satisfaction [9,12]. Broader insight into how trainee physicians perceive the multiprofessional team may be useful to both ICU administrators and residency program directors. Therefore, we conducted a cross-sectional survey of ICU trainee physicians and nurses to better understand differences in perceptions of team function between these 2 key provider groups.

1. Methods

1.1. Research setting

This study was conducted in 6 adult ICUs at the Beth Israel Deaconess Medical Center (BIDMC) in Boston, MA. The BIDMC is an urban, academic teaching hospital with 490 total hospital beds, of which 77 are dedicated ICU beds. The medical center has approximately 5000 ICU admissions annually and an ICU clinical staff composed of nurses whose practice is limited to critical care, attending physicians, trainee physicians (including 63 medical interns and 94 medical residents), respiratory therapists, pharmacists, and other disciplines (eg, physical therapists, social workers). Some staff members rotate between units, whereas others are dedicated to a single unit. All of our ICUs have similar organizational characteristics. All ICUs follow either a fully closed model (the attending of record is the attending physician) or a mandatory comanagement model. All units have had multiprofessional rounds for more than a decade. These rounds occur in the morning and include nurses, trainee physicians, attending physicians, and other disciplines such as respiratory therapy and pharmacy.

1.2. Survey development and administration

The survey was composed of a set of previously validated scales that captured the constructs of interest. Team-level constructs included presence of a real team, communication quality, collaborative decision-making, and coordination. Individual-level job autonomy and job satisfaction scales were also included to understand the relationship with team-level constructs. The concept of a "real team," as opposed to a team in name only, means that the individuals responsible for the work perceive themselves as part of a defined group that performs interdependent work on an ongoing basis. We measured this using Wageman's 8-item scale from the Team Diagnostic Survey, which includes 3 subdimensions: boundedness (team membership is clear), interdependence (communication and coordination among team members are required), and stability (team membership remains consistent over time) [13]. Communication quality was measured using Shortell's scale, developed for the ICU setting [14]. His 12-item scale captures 4 dimensions of communication quality: openness, accuracy, timeliness, and satisfaction. Collaborative decision-making was measured using Baggs' 5-item scale [15]. Also developed for the inpatient setting, it includes statements such as "nurses and physicians plan together to make the decision about care for this patient." Coordination was measured using Schippers' 8-item team planning scale and 5-item action-after-planning scale [16]. Job autonomy (2 items) and job satisfaction (4 items) were measured using a subset of Hackman's Job Diagnostic Survey [17]. All responses were reported on a 1 to 7 Likert scale, with 1 = strongly agree and 7 = strongly disagree.

After initial development of the survey, we conducted cognitive testing with 3 ICU leaders to identify modifications required to adapt it to the academic medical center's ICU setting. In response, we made minor edits such as replacing "team" with "patient care team," but did not find any questions in need of significant change. The survey was uploaded to a Web-based tool on the hospital's intranet and administered to the nursing and resident staff. Nurses and residents received an initial e-mail informing them of the