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Validation of an Organizational Communication Climate Assessment Toolkit

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Abstract

Effective communication is critical to providing quality health care and can be affected by a number of modifiable organizational factors. The authors performed a prospective multisite validation study of an organizational communication climate assessment tool in 13 geographically and ethnically diverse health care organizations. Communication climate was measured across 9 discrete domains. Patient and staff surveys with matched items in each domain were developed using a national consensus process, which then underwent psychometric field testing and assessment of domain coherence. The authors found meaningful within-site and between-site performance score variability in all domains. In multivariable models, most communication domains were significant predictors of patient-reported quality of care and trust. The authors conclude that these assessment tools provide a valid empirical assessment of organizational communication climate in 9 domains. Assessment results may be useful to track organizational performance, to benchmark, and to inform tailored quality improvement interventions.

Keywords

communication, organizational culture, performance assessment, survey

Effective communication is the foundation for quality health care.¹⁻¹³ Communication between health care practitioners, patients, and other members of care teams affects patient satisfaction,^{6,8,9} adherence to treatment recommendations,^{7,9,10} and patient safety.¹¹⁻¹³ According to the Joint Commission, miscommunication is the leading cause of sentinel events (serious medical errors).¹² In addition, health and health care disparities are created when miscommunication disproportionately affects certain patient populations.^{4,5,14-16} As a result, understanding and improving communication may be a key to addressing disparities,⁴ which is an important national health policy goal.¹⁷

Because much of the communication in health care takes place in dyadic patient–clinician relationships, health care communication is often studied at the level of these interactions.¹⁸⁻²⁰ For example, research using tape recordings of patient–physician interactions has been invaluable to explore determinants of effective interpersonal communication and to improve clinical training programs.^{20,21} Yet it has been noted among those seeking to improve communication that communication is strongly affected by the organizational climate in which interactions take place.²²

In short, organizations create the milieu in which interpersonal communications succeed or fail and, as with many facets of health care quality, the organizational climate can make good performance at the individual level either easier or much harder to attain.

The Ethical Force program is a multistakeholder collaborative that aims to develop valid and reliable measures

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Table 1. Hospitals and Clinics Involved in Field Tests of the Communication Climate Assessment Tools

Children's Hospital & Research Center, Oakland, CA
Windham Hospital, Willimantic, CT
University of Mississippi Medical Center, Jackson, MS
University of Chicago Hospitals, Chicago, IL
Rainbow Babies and Children's Hospital, Cleveland, OH
Sierra Kings District Hospital, Reedley, CA
Golden Valley Health Center, Merced, CA
Community Health Center, several cities across CT
Geisinger Medical Center, Mount Pocono, PA
George Washington University Hospital, Washington, DC
Hennepin County Medical Center, Minneapolis, MN
Open Door Family Medical Center, Ossining, NY
Louisville Oncology, Louisville, KY
Family HealthCare, Visalia, CA

of the ethical environment in health care organizations.^{23,24} The "ethical environment" of a health care organization comprises all ethics-related facets of the organization, including the presence or absence of specific organizational values, infrastructure, and other resources that make ethical practices more or less likely. The program selects specific aspects of the ethical environment (eg, privacy,²⁵ insurance coverage decisions,²⁶ patient-centered communication^{27,28}) and uses a consensus process to develop performance expectations in those areas for health care organizations. It then aims to create valid and useful tools to measure, monitor, and improve an organization's ethical environment. This work is related to efforts to measure and improve organizational culture. The available instruments that measure organizational culture in health care have been sparse²⁹ and limited in their scope, ease of use, and measurement properties.³⁰

The Ethical Force program has developed a set of organizational communication climate assessment tools,³¹ including a coordinated set of patient surveys, clinical and nonclinical staff surveys, leadership surveys, a team-oriented self-assessment workbook, and several optional focus group protocols. In this article, we describe the development and field testing of the patient and staff surveys in 14 health care organizations, including the creation of a scoring system comprising 9 discrete domains of organizational performance, focusing on demonstrating the reliability of the measurement domains and their content and construct validity.

Methods

Toolkit materials were developed using a multistakeholder consensus process and refined through 2 rounds of field testing at 14 widely varying health care organizations, including 7 hospitals and 7 clinics nationwide (Table 1).

The Ethical Force consensus process has been described in detail previously.^{25-27,31} For this project, a 13-member

expert advisory panel on patient-centered communication (member list available at: www.EthicalForce.org) was convened to review the existing literature and propose a set of domains for organizational assessment as well as specific organizational performance expectations within each domain. Each proposed domain and every individual performance expectation within each domain was subject to a vote by the 21-member Ethical Force Oversight Body, comprising leaders from hospital, health plan, clinician, and patient groups (membership list at www.EthicalForce.org). Using a scale of 1 to 10 (1 = *not at all*; 10 = *completely*), members voted on whether each proposed domain and performance expectation was (1) important, (2) measurable, and (3) feasible to accomplish. The mean score for adopting a domain or performance expectation was 7, and no member could vote <3 on any item; in essence, every member held a veto. This strict consensus process ensures the content validity of the domains and performance expectations. The assessment domains are listed in Table 2, and details on the adopted performance expectations in each domain are available online.²⁷

Next, adopted performance expectations were used to develop the set of communication climate assessment tools including the coordinated surveys for patients, clinicians, nonclinical staff, and leaders. A 360° evaluation approach ensures that all views are represented in an effort to produce the most accurate and complete assessment of an organization.³² This report presents research on validation tests for the patient and staff surveys only; the leadership survey closely mirrors the staff survey but is completed by only a few senior executives in each organization, making reliable statistical analysis impossible.

The communication climate assessment tools were field tested in 14 diverse organizations nationwide (Table 1). Sites were selected by the expert advisory panel in a competitive process, which aimed to represent all regions of the country and a broad array of patient populations. Following a call for nominations, more than 50 hospitals and clinics applied to serve as field test sites; 16 were selected (8 hospitals and 8 clinics, comprising 2 clinics and 2 hospitals from each of the 4 major geographic regions of the country). Of these, 14 ultimately contributed data to the field test process because 2 of the sites initially selected experienced leadership turnover or were sold and declined to participate. Table 3 shows the demographic characteristics of patients and staff at the field test sites. Site-specific assessment results are not presented in this report because anonymity was promised for the purposes of testing the instruments.

The initial round of field tests was for psychometric testing and to refine and simplify the tools. The first-round patient surveys also included standard items about quality and trust in health care, which were used to assess the construct validity of the toolkit domains. Following the first round of field tests, 9 of the original 13 organizations agreed

Table 2. Communication Domains and Internal Consistency Reliability of Items Measuring Each Domain

Communication Domain	Patient Survey		Staff Survey	
	No. of Items	Coefficient α	No. of Items	Coefficient α
Organizational commitment	7	.87	15	.91
Data collection	2	.65	9	.90
Workforce development	0	NA ^a	22	.93
Community engagement	3	.64	2	.78
Individual engagement	18	.90	9	.82
Addressing health literacy	15	.88	13	.86
Meetings language needs	15	.83	16	.96
Cross-cultural communication	3	.59	16	.88
Performance monitoring	1	NA ^a	7	.84

^aDomains with 0 to 1 survey items cannot be assessed for statistical reliability.

Table 3. Characteristics of Survey Respondents Across All Sites During Phase I and Phase II of the Field Tests

	Phase I	Phase II		Phase I	Phase II
	n = 5928	n = 1763		Staff Survey Respondents	n = 1229
Patient Survey Respondents			Staff Survey Respondents		
Sex	n(%)	n(%)	Sex	n(%)	n(%)
Male	1323 (22)	431 (24)	Male	214 (17)	117 (18)
Female	3915 (66)	1276 (72)	Female	979 (80)	489 (75)
NA	690 (12)	56 (3)	NA	36 (3)	45 (7)
Race/Ethnicity			Race		
African	147 (2)	7 (0.4)	African	7 (0.6)	3 (0.5)
African American	718 (12)	201 (11)	African American	95 (8)	51 (8)
American Indian	29 (0.5)	5 (0.3)	American Indian	3 (0.2)	4 (0.6)
Asian	176 (3)	42 (2)	Asian	77 (6)	31 (5)
White	1533 (26)	650 (37)	White	517 (42)	351 (54)
Hispanic	2383 (40)	648 (37)	Hispanic	215 (17)	130 (20)
Pacific Islander	16 (0.3)	8 (0.5)	Pacific Islander	8 (0.7)	6 (1)
Multiple/Other	462 (8)	115 (7)	Multiple/Other	113 (9)	51 (8)
NA	464 (8)	87 (5)	NA	194 (16)	24 (4)
Language			Job category		
Bosnian	8 (0.1)		Administration		32 (5)
Chinese	16 (0.3)	1 (0.1)	Maintenance		6 (1)
English	3609 (61)	1181 (67)	Nursing staff		162 (25)
French	2 (0.1)		Patient liaison		7 (1)
Haitian Creole	3 (0.1)		Physician staff		87 (13)
Hmong	22 (0.4)	2 (0.1)	Medical assistant		42 (6)
Polish	9 (0.2)	1 (0.1)	Reception		68 (10)
Portuguese	25 (0.4)	1 (0.1)	Social work		7 (1)
Somali	20 (0.3)		Other		174 (27)
Spanish	1740 (29)	372 (21)	NA		66 (10)
Vietnamese	54 (0.9)				
Other	51 (0.9)	134 (8)			
NA	369 (6)	71 (4)			
Education					
Grade school		264 (15)			
Some high school		232 (13)			
High school graduate		498 (28)			
Some college		391 (22)			
College graduate		109 (6)			
Graduate school		133 (8)			
NA		136 (8)			

to perform reassessments using the refined tools to assess variability in performance within and between organizations and to help test our system for reporting and benchmarking performance in each domain.

Survey Distribution Methods

Field tests took place between November 2007 and August 2008. Surveys were available on paper or online. Patient surveys were also available via automated voice response systems in round 1 (very few patients replied using the system, so it was retired for round 2) and in 5 languages (English, Spanish, Chinese, Polish, and Vietnamese).

All sites used convenience samples for patient and staff data collection. For patient surveys, sites either distributed surveys directly to patients in outpatient clinics or prior to discharge from the hospital, or they mailed the surveys to patients' homes following an office visit or inpatient admission. For staff surveys, sites either asked their staff to complete the surveys during staff meetings, distributed them personally, mailed surveys through interoffice mail or to staff members' homes, or sent an e-mail with a Web link instructing staff to complete the survey online. At most sites, it was not possible to determine a precise survey response rate because patients or staff could decline to pick up the survey or could pick up more than 1 survey, but the response rates generally ranged from 20% to 50%. A few sites obtained nearly 100% response rates on staff surveys by distributing the surveys at staff meetings and stipulating that they be returned before leaving. All staff and patient surveys were anonymous, which precluded any attempts to follow up with nonrespondents.

Data Analysis

In round 1, reliability was assessed by testing the internal consistency reliability of the domains, measured using Cronbach α . Standardized coefficients were used along with listwise deletion to optimize domain reliability.³³ Specifically, items were systematically removed and α s recalculated to determine when removing an item improved internal consistency. Finally, to assess the construct validity of the 9 domains, we examined correlations between domain scores and 3 standard measures of patient-reported quality of care and trust in health care systems. Patient reports of quality of care and trust can be correlated with a number of independent demographic factors that are unrelated to communication climate, including patient age, education, sex, race, ethnicity, and language (English vs non-English).⁸⁻¹⁰ Because we wished to examine the effect of communication climate per se on patient-reported quality and trust, we adjusted for these demographic factors using multivariable logistic regression models. In round 2,

graphical displays by sites were constructed to compare domain score variability within and between sites. All analyses were 2-sided, and statistical significance was determined at the $\alpha = .05$ level. All analyses were performed using SAS v9.1.3 (SAS Institute Inc, Cary, NC) or Stata v10 (StataCorp LP, College Station, TX).

Calculating Domain Scores

To calculate domain scores, all relevant survey item responses were first standardized to a 0-to-1 scale, with 1 being the most desired response. For each domain, the mean of all included items was calculated for each survey to obtain patient and staff survey domain means (this accounts for varying numbers of items in each domain as well as the varying numbers of surveys collected at different sites). Finally, the means of the patient survey and the staff survey domain means were calculated (so that staff and patient scores carry equal weight in the overall domain score) and multiplied by 100. The domain scores are thus reported on standardized scales of 0 to 100 for each organization, with 100 being the best possible score.

Patient-Reported Quality and Trust Measures

To assess patients' perceptions of quality and trust, we adapted several items from the previously validated Health Care System Distrust Scale.³³ In particular, we asked if patients believed that they received high-quality care (competence/quality), that the system would hide mistakes (honesty, reverse-coded), and that the system would keep their medical records private (confidentiality).

The nationwide field test protocol was reviewed and approved by the Western Institutional Review Board, Olympia, WA. Several field test sites that incorporated additional substudies, such as staff focus groups, also underwent additional local institutional review board review, depending on the specifics of their local protocols.

Results

In round 1, the 13 participating organizations collected surveys from 5929 patients (35% limited English proficient) and 1229 clinical and nonclinical staff. Round 2 included 9 sites that collected data from 1763 patients (29% limited English proficient) and 651 staff. Table 3 details the samples in each round of field tests. Across both rounds of surveys, patient survey respondents were mostly female (72%) and white (40%) or Hispanic/Latino (39%); 67% of patients reported English to be their preferred language when talking with their doctor, whereas 21% reported Spanish as their preferred language. Staff survey respondents held heterogeneous job responsibilities: 13% were physicians, 25%

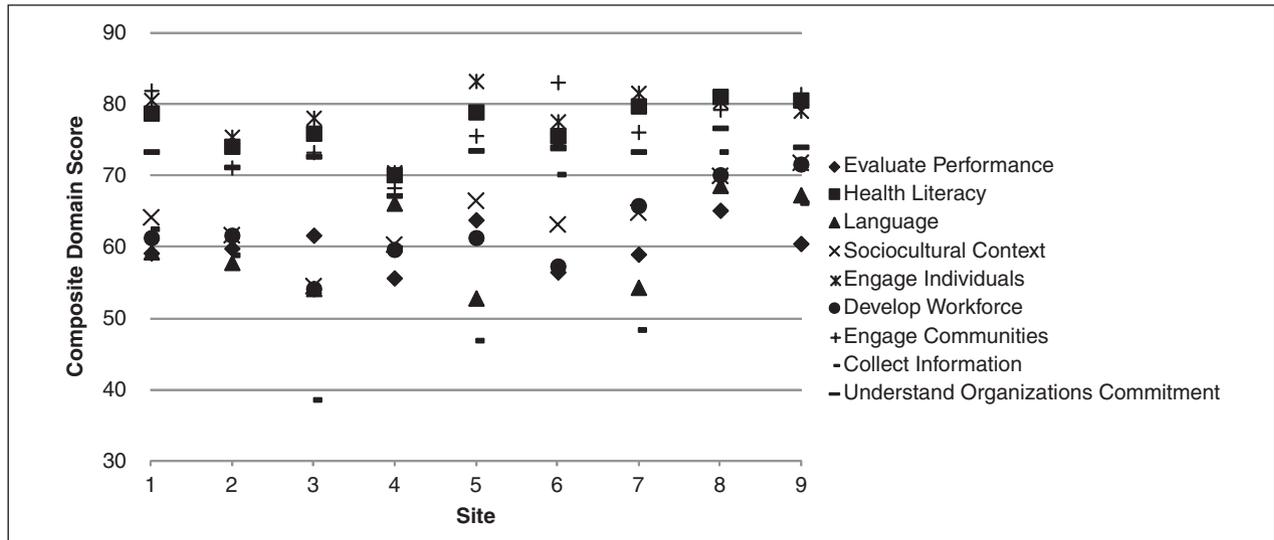


Figure 1. Variability across final domain scores at the 9 sites that participated in round 2

were from nursing, 10% were from reception/front desk, and 52% were from other categories.

Internal Consistency of Domains

Table 2 shows the number of survey items in each domain as well as the final internal consistency reliability analyses for each domain by survey, demonstrating acceptable instrument reliability in all domains for both patient and staff surveys (surveys with 0-1 item in a domain cannot be scored for domain reliability). The range of Cronbach α for patient survey domains was .59 to .90. The range of Cronbach α for staff data was .69 to .96.

Site Variability

Figure 1 shows the variability across final domain scores at the 9 sites that participated in round 2. There was substantial within-site variability between domains (ie, no site scored uniformly high or low on all domains) as well as considerable between-site variability within domains. The smallest variability between organizations was seen in the Leadership Commitment domain, with low and high site scores of 67.2 and 76.6 (Δ of 9.4). The largest variation was seen in the data collection domain, with low and high site scores of 38.5 and 73.4 (Δ of 34.9).

Domain Scores as Predictors of Patient-Reported Quality and Trust

To assess construct validity, we examined correlations between differences in domain scores and patient-reported measures of quality and trust. Results for 5-point changes

in domain scores are shown in Table 4 and demonstrate that scores on most of the domains are significant predictors of patient-reported quality and trust, after adjusting for patient age, education, sex, race, ethnicity, and language (English vs non-English). For example, a 5-point increase in score on the community engagement domain corresponds to a 54% increase in the odds that patients at that organization will report receiving high-quality care. Similarly, a 5-point increase in score on the health literacy domain corresponds to a 28% increase in the odds that patients will trust the organization to protect their confidential records and a 27% decrease in the odds that patients will think the organization would hide an error in their care.

Discussion

Patient-centered communication is well recognized as a key to quality care, and an organization's climate and infrastructure can affect communication in a number of important ways. We developed a set of assessment tools to measure a hospital or clinic's organizational climate specifically in regard to patient-centered communication. The tools provide a 360° evaluation of organizational communication climate and include patient and staff surveys that can be used to derive standardized domain scores in each of 9 key areas of organizational communication climate. In a diverse set of hospitals and clinics nationwide, we found these domains and the scoring system to be reliable and to accurately predict patient-reported quality and trust. Even relatively small changes in most domain scores (5 points on a 100-point scale) corresponded to meaningful changes in patients' beliefs that they were receiving high-quality care from a trustworthy organization.

Table 4. Multivariate^a Relationship Between Organizational Performance in Each Communication Domain and Patient-Reported Measures of General Quality and Trust

Communication Domain	I Receive High-Quality Medical Care	My Medical Records Are Kept Private	If a Mistake Were Made in my Health Care, the System Would Try to Hide It From Me
	OR (95% CI)	OR (95% CI)	OR (95% CI)
Organizational commitment	1.34 (1.22-1.54)	1.22 (1.05-1.40)	0.73 (0.66-0.86)
Data collection	0.95 (0.90-0.95)	1.00 (0.95-1.05)	1.0 (1.00-1.05)
Workforce development	1.47 (1.28-1.69)	1.28 (1.10-1.47)	0.73 (0.62-0.86)
Engage community	1.54 (1.28-1.76)	1.28 (1.10-1.54)	0.73 (0.59-0.86)
Engage individuals	1.40 (1.22-1.61)	1.22 (1.05-1.40)	0.73 (0.62-0.86)
Health literacy	1.40 (1.22-1.61)	1.28 (1.10-1.47)	0.73 (0.62-0.86)
Language services	0.90 (0.82-0.95)	1.05 (0.95-1.16)	1.0 (0.90-1.16)
Cross-cultural	1.28 (1.16-1.40)	1.16 (1.05-1.28)	0.82 (0.73-0.90)
Performance monitoring	1.40 (1.22-1.54)	1.22 (1.05-1.40)	0.73 (0.66-0.86)

Abbreviations: OR, odds ratio; CI, confidence interval.

^aResults are adjusted for patient age, sex, education, and language ability, and reflect the effects of 5-point changes in domain scores.

Although most health care organizations survey patients and staff on satisfaction, and the Consumer Assessment of Healthcare Providers and Systems surveys include several items related to patient-centered communication, we are not aware of any prior efforts to develop a comprehensive 360° assessment system for organizational communication climate. With this toolkit, the Ethical Force Program gives hospitals, clinics, and other health care organizations the ability to assess organizational communication climate and diagnose specific performance domains as high-value targets for quality improvement.

Limitations

The primary limitation of this research is that it is too early to measure whether quality assessment in the 9 domains related to communication climate can lead to changes in organizational performance and resultant patient health outcomes. Providing standardized feedback on quality has been offered as a mechanism to prompt quality improvement,^{34,35} and one might hope that organizations will respond to detailed quality data with tailored quality improvement interventions. For instance, an organization scoring well on the language services domain but less well on the health literacy domain might choose particular interventions focused on literacy to target this discrepancy.³⁶ However, even public reporting of quality data has not always sparked effective quality improvement.³⁷ In addition, patient reports of quality of care do not always correspond to quality of care using process or outcomes measures,³⁸ they can be important nonetheless and may though they can be important nonetheless and may correspond to other important outcomes.³⁹ Finally, despite the large

sample size for patients and staff, the small number of sites (13 in round 1 and 9 in round 2) precludes any meaningful analyses according to organizational type, as does the fact that these sites did not comprise a random sample. Although this small group of sites is adequate for survey validation, we hope that future studies will include larger numbers of organizations, which might allow detection of performance variation according to region, site demographics, and specific policy environmental factors, among others.

Conclusion

Effective communication is critical to quality care and is sensitive to numerous organizational factors. We have developed and validated a set of assessment tools for measuring the communication climate of health care organizations. These tools can provide organizations with detailed feedback across 9 discrete domains of communication performance, which might be useful to track performance over time, to benchmark, and to target quality improvement interventions.

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Declaration of Conflicting Interests

The authors declared a potential conflict of interest (e.g. a financial relationship with the commercial organizations or products discussed in this article) as follows: Dr Osborn, Ms Griffin, and Mr McCoy disclosed no conflicts of interest. The following authors declared the following potential conflicts of interest. Dr Wynia is an employee of the American Medical Association, which holds copyright on all products of the Ethical Force program. Ms Johnson is an independent consultant who has been trained and is authorized to use the organizational assessment toolkit in her consulting work. Any conflicts of interest were resolved during the peer-review process.

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