

Critical Analysis of the Kalamazoo Consensus Statement Assessment Tools

Introduction:

We recommend first reading the Critical Analysis of the Kalamazoo Consensus Statement Assessment Tools, which covers basic descriptive and psychometric information, including the number of items, instrument purpose, and psychometric (i.e. validity) data and can help determine if the Kalamazoo Consensus Statement Assessment Tools meets your needs. If you are interested in getting more detailed information about the items in the instrument or have decided to consider using the Kalamazoo Consensus Statement Assessment Tools, we recommend reviewing the Kalamazoo Consensus Statement Assessment Tools instrument file and scoring guide.

Educational Objectives:

1. To describe the purpose and basic properties of the Kalamazoo Consensus Statement Assessment Tools, including number of items and scales, and psychometric properties;
2. To describe the application of the Kalamazoo Consensus Statement Assessment Tools to the field of health sciences education;
3. To evaluate the relative strengths and weaknesses of the Kalamazoo Consensus Statement Assessment Tools; and
4. To provide the Kalamazoo Consensus Statement Assessment Tools and supplemental materials to aid in its administration.

Resource files:

- Critical Analysis of the Kalamazoo Consensus Statement Assessment Tools.pdf
- Kalamazoo Essential Elements Communication Checklist.pdf
- Kalamazoo Essential Elements Communication Checklist-Adapted.pdf
- Gap-Kalamazoo Communication Skills Assessment Forms.pdf

A. Original Citations:

The Bayer-Fetzer Conference on Physician-Patient Communication in Medical Education. Essential elements of communication in medical encounters: The Kalamazoo consensus statement. *Academic Medicine*. 2001 April; 76(4): 390-393.

B. Brief Description/Purpose:

The Kalamazoo Consensus Statement (KCS) Assessment Tools are three instruments that assess communication skills in medical education: the Kalamazoo Essential Elements Communication Checklist (KEECC), Kalamazoo Essential Elements Communication Checklist-Adapted (KEECC-A), and Gap-Kalamazoo Communication Skills Assessment Form (GKCSAF).¹⁶ They can be used for formative or summative assessment or teaching. The KEEC is organized around seven communication components: relationship building, discussion opening, information gathering, understanding patient perspective, information sharing, agreement, and closure. Its twenty-

four items are sub-competencies of these elements, rated Done Well, Needs Improvement, Not Done, or Not Applicable.¹⁶ The adapted KEECC-A provides global ratings on just the seven core competencies, using a five-point Likert scale (Poor to Excellent). Scoring 3 (Good) or higher is considered appropriate for experience level.

The GKCSAF rates the seven communication skills using the same Likert scale, but also assesses self-insight and encourages self-reflection. Mean completion time is seven minutes.³ It is adapted for team assessment of learners in simulated settings. It incorporates 360-degree assessment, which combines self-assessment and multi-rater evaluation, and uses a quantitative gap analysis. Gaps are calculated by subtracting self-assessed scores from raters' mean scores on each communication dimension. Positive values indicate self under-appraisal and negative numbers reflect over-appraisal. Gap analysis reinforces strengths and targets weaknesses or poor insight. The GKCSAF measures two additional dimensions: Demonstrates Empathy and Communicates Accurate Information.¹⁶ It also contains two forced-choice items, asking what learners did best, and could improve, and requires them to choose three respective strengths and weaknesses, each. There are free-text fields for explaining choice of strengths and weaknesses.⁴

C. Development and Psychometrics:

In 1999, twenty-one educators and communication experts from various medical specialties and North American medical education professional organizations (AAMC, ACGME, ECGME, NBME, AMA) met in Kalamazoo, Michigan for the Bayer-Fetzer Conference on Physician-Patient Communication.¹ They aimed to delineate key physician-patient communication ingredients to help articulate ways to teach and assess communication skills at all levels of medical education.¹ Five models of physician-patient communication guided their work: the Calgary-Cambridge Guides, Patient-Centered Clinical Method, Three Function Model/Brown Interview Checklist, Institute for Health Care Communication 4E Model, and SEGUE.¹ Their framework contained two key considerations: patient rapport-building is an ongoing process, not a discrete event; and therapeutic relationships depend on well-developed communication skills (establishing personal connections, soliciting patients' perspectives, empathy, and collaborative attitudes in improving patients' health).¹

They ultimately identified seven evidence-based tasks, deemed "essential elements of communication" (EEC), linking each to specific skill competencies. These seven dimensions formed the backbone of the KCS Assessment Tools, developed through subsequent meetings, lending strong evidence supporting content validity. In 2002, participants reviewed formative and summative communication skills assessment methods, including checklists, patient satisfaction surveys, and formal examinations, emphasizing both formative and summative uses.⁶ A notable weakness is that there is no available psychometric information from the original KEECC and KEECC-A scale development.

Calhoun and colleagues further adapted the original Kalamazoo checklist, guided by the original KCS framework, and incorporated 360-degree assessment to create the GKCSAF.³ They used the

adapted assessment in a simulated setting to assess pediatric fellows' communication skills, yielding high internal consistency, evidenced by a Cronbach's alpha of 0.84 on the seven core communication dimensions, and 0.87 on all nine dimensions.³ Although they reported that a factor analysis revealed these dimensions mapped onto one construct, General Communication Competence, indicating construct validity, they did not provide analytic data. Including actual factor loading numeric values would have allowed appraisal of their strength, but their absence prevents a psychometric judgment of internal structure.

D. Additional Studies Reporting Validity Evidence:

There are few studies that report the KCS tools' psychometric properties. In 2005, a panel of family medicine educators evaluated 15 physician-patient communication instruments using KCS criteria. Those rated highest on KCS elements were designed for faculty-raters, despite having varied psychometric properties.¹⁶ Since then, further work has investigated the KCS tools' validity and reliability.

In 2008, Wayne State University trained 135 junior residents across specialties using the KEECC-A in a communication skills curriculum.⁹ Each resident had three KEECC-A scores.⁹ Residents took an OSCE, then the KEECC-A. Standardized patients (SPs) also completed the KEECC-A. Faculty completed the KEECC-A after viewing videos of residents' OSCEs, and providing feedback in mentoring sessions. Cronbach's alpha values were 0.89 (faculty), 0.90 (SPs), and 0.94 (resident/self), signaling high internal consistency and reliability across items.⁹ Factor analysis revealed a clear single-factor structure with all loadings being 0.70 or greater for all three administrations of the KEECC-A, evidence of construct validity.⁹ The consistent one-dimensional factor structure is suggestive of one general communication factor.⁹ Interrater reliability results were mixed at best. The strongest intercorrelation between the three KEECC-A scores was between SP and faculty ratings ($r = .31, p < .001$), signifying slight interrater reliability, while self-ratings were not significantly correlated with faculty or SP ratings. Scores were further analyzed by gender, and domestic versus international medical school training status. An ANOVA found that faculty rated domestic graduates significantly higher than international graduates ($F=7.75, p < .01$), which may further evidence validity through relationship with other variables.⁹ KEECC-A scores were compared to a subsample of medicine residents' American Board of Internal Medicine Patient Satisfaction Questionnaire (PSQ) scores in an attempt to find convergent validity, but severe PSQ score range restrictions thwarted efforts. Finding convergent validity will remain challenging until there exists a "gold standard" for physician communication skills.⁹

More recently, the University of Louisville School of Medicine's multidisciplinary, simulation-based curriculum adopted the KCS framework to guide its communication skills education. It uses the GKCSAF to assess communication competencies within simulated settings. Multiple faculty observers, SPs, peer-observers, and learners participate in 360-degree assessment using the GKCSAF. An analysis of 118 conversations yielded Cronbach's alpha scores of 0.84 (faculty raters) and 0.88 (peer observers), signaling high internal consistency. Intra-Class Correlation (ICC) values of 0.83 (faculty raters) and 0.89 (peer observers) demonstrate good interrater

reliability.¹⁵

Most recently, the Uniformed Services University of the Health Sciences (USUHS) medical school's longitudinal communication curriculum adopted an adapted, regionally presented, well-honed, yet unpublished version of the KEEC from the University of New Mexico (UNM) School of Medicine. Coined the Essential Elements of Communication-Global Rating Scale (EEC). This tool was employed to teach communication skills during SP encounters, and assess learners on Objective Structured Clinical Examinations (OSCEs).^{10, 14, 20} One study investigated the association between EEC scores on an end of pre-clerkship OSCE, and communication skills assessments during clerkships and residency, measured by USMLE Step 2 Clinical Skills Exam Communication and Interpersonal Skills (CIS) and postgraduate year one (PGY-1) evaluation of communication skills by program director.¹⁰ There were medium correlations between EEC and CIS ($r = .42, p < .01$), and between EEC and PGY-1 communication skills scores ($r = .31, p < .01$), implying moderate criterion-related validity.¹⁰ EEC performance was a significant predictor of CIS performance and PGY-1 communication skills scores, revealing construct validity.⁹ Another unpublished investigation there examined students' communication skills across a curriculum change. EEC OSCE data from the old vs. new curriculum yields Cronbach's alpha values of .87 and .90 respectively, suggesting high reliability. While these psychometric properties are based on a closely adapted unpublished instrument based on the Kalamazoo tools, they hint at similar psychometric properties for the original KCS checklists.

E. Application to Health Sciences Education & Health Sciences Education Research:

Few studies detail the Kalamazoo tools' use. Existing work documents their application to learners at all levels of medical education. Extensive unpublished work at the University of New Mexico and the Uniformed Services University of the Health Sciences also strongly hint at these tools' applicability and relevance for medical trainees. Some recent research has focused on communication skills training in specific contexts, such a difficult conversations, or specific specialties including pediatrics, neonatology, or emergency care.^{3, 4, 5} However, currently no distinction has been made regarding the use of KCS tools by specialty. In terms of further health professions education research, there have been several comprehensive reviews of various communication assessment tools, where all were found to have limitations regarding lack of rating unanimity, lack of widespread utility/practicality, and which revealed that instruments consistent with the KCS were not necessarily psychometrically strong.^{7, 17, 18, 19}

F. Commentary:

Data from the development and adaptation of KCS tools hint at promising psychometric characteristics. Cronbach alpha values indicate reliability. Interrater reliability is modest, and warrants more investigation to understand why, or strengthen it. Content and construct validity were good, criterion-related validity was modest, and convergent validity is presently unable to be established. Continuing evaluation and research are necessary for establishing validity and reliability, and to advance research in teaching and assessing physician-patient communication skills. We should consider whether the Kalamazoo tool might capture interview efficiency, or be adapted to patient interviews involving multiple family members. Other future directions

include using the tool with direct learner observation to strengthen links between communication training and learners' bedside performance.⁸ Research and development of the KCS tools has been contextually embedded in graduate medical education, mapping onto ACGME competencies. While these tools are relevant to all levels of learners, there is potential for expanded use in continuing medical education, both as professional development for all clinicians, and special training for those who receive sanctions, if malpractice links to poor communication. These tools also hold promise in specific situational training, such as difficult conversations, breaking bad news, obtaining informed consent, or scenarios of unanticipated events. Taken together, it encourages earlier incorporation of the KCS tools in training, especially given trends towards integration during pre-clerkship years. In conclusion, the Kalamazoo tools are promising teaching and assessment tools for complex contexts of healthcare quality and safety initiatives, integrated clinical training, and increased emphasis on professionalism. The KCS tools may eventually be applicable or adaptable to other health professions. Existing data shows reliability and suggests certain types of validity. Faculty development and training for users may help with interrater differences. In sum, the KCS tools are worth considering, for those interested in teaching or assessing communication skills.

G. Additional Citations:

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