

UCSF

UC San Francisco Previously Published Works

Title

Support for Use of Consumer Assessment of Healthcare Providers and Systems Communication Items Among Seriously Ill Patients

Permalink

<https://escholarship.org/uc/item/55b3t838>

Authors

Hays, Ron D
Walling, Anne M
Sudore, Rebecca L
[et al.](#)

Publication Date

2023-04-20

DOI

10.1089/jpm.2022.0572

Peer reviewed

Open camera or QR reader and
scan code to access this article
and other resources online.



Support for Use of Consumer Assessment of Healthcare Providers and Systems Communication Items Among Seriously Ill Patients

Ron D. Hays, PhD,¹ Anne M. Walling, MD, PhD,^{1,2} Rebecca L. Sudore, MD,³
Aaron Chau, BS,⁴ and Neil S. Wenger, MD, MPH¹

Abstract

Background: High-quality doctor-patient communication is essential for patients with serious illnesses. The reliability and validity of Consumer Assessment of Healthcare Providers and Systems (CAHPS[®]) communication items among these patients are unknown.

Methods: Five CAHPS communication items, a 4-item Advance Care Planning (ACP) engagement scale, 5-item confidence in others' knowledge of ACP medical wishes scale, and a question about confidence in filling out ACP-related medical forms were administered to 1100 patients (20% response rate) with serious illness receiving primary care at three University of California Health Systems.

Results: Average age was 69 (range 22–102); 52% male, 18% Hispanic, 9% Asian, and 7% Black; 24% had high school or less education. Eigenvalues and internal consistency reliability (0.88) supported a 5-item communication scale. Item characteristic curves showed a monotonic relationship of response options with the communication score. Item thresholds indicated that most patients reported positive patient experiences (i.e., items were negatively skewed). Item slopes ranging from 2.52 to 5.10 confirmed that all items were strongly related to the communication score. Information (reliability) of the communication scale was higher for assessing patients with negative experiences of care than for the positive end of the spectrum. Communication was positively correlated with confidence in other's knowledge of ACP medical wishes ($r=0.32$, $p<0.0001$), ACP engagement ($r=0.14$, $p<0.0001$), and confidence in filling out ACP-related medical forms ($r=0.09$, $p=0.0022$).

Conclusions: These findings support the use of CAHPS survey items to assess communication among patients with serious illnesses in primary care. Clinical Trial Registration: <https://clinicaltrials.gov/ct2/show/NCT04012749>

Keywords: advance care planning; CAHPS[®]; communication; survey

Introduction

HIGH-QUALITY DOCTOR-PATIENT communication is essential for patients with serious illness. The Consumer Assessment of Healthcare Providers and Systems (CAHPS[®]) surveys are the standard measures of patient experience and

widely used in the United States to assess health care.¹ CAHPS surveys are available to assess ambulatory (e.g., clinician and group) and facility care (e.g., hospital). The surveys focus on reports about how often aspects of care occurred, such as how often providers explained things in a way that was easy to understand and how often the patient

¹Department of Medicine, University of California, Los Angeles, California, USA.

²VA Greater Los Angeles Health System, Los Angeles, California, USA.

³Division of Geriatrics, Department of Medicine, University of California, San Francisco, San Francisco, California, USA.

⁴Department of Medicine, University of California, Irvine, Irvine, California, USA.

Accepted March 15, 2023.

was able to get an appointment as soon as they needed it for urgent care.² Multiple questions assessing the same concept (e.g., access to care) administered using frequency (*Never*, *Sometimes*, *Usually*, *Always*) response options are averaged together to create scale scores.

Studies have shown that the CAHPS communication scale has adequate reliability and is strongly associated with global ratings in some samples³⁻⁵ and intentions to return to the provider.⁶ But the reliability and validity of the scale among those with serious illness and limited prognosis is unknown. In addition, previous studies have reported reliability estimates across respondents, but the reliability of measurement varies by the positivity or negativity of the respondent's experience with care.⁷ Further, the scoring of the CAHPS items assumes that the response selected is consistent with the patient's experience with care. Each response category of the CAHPS communication items should have the highest likelihood of being selected somewhere along the underlying distribution consistent with *Never* representing the most negative experience, *Sometimes* the next most negative experience, *Often* the second most positive experience, and *Always* the most positive experience.⁸

The aim of this study was to assess the extent to which the CAHPS communication scale is appropriate for use with seriously ill outpatients. CAHPS items were included in a large multisite cluster randomized controlled advance care planning (ACP) trial among patients with serious illness receiving primary care at one of three University of California Health Systems. We estimate the reliability of the CAHPS communication scale and evaluate its construct validity by examining correlations with confidence in others' knowledge of ACP medical wishes, ACP engagement, and confidence filling out medical forms.

Methods

This study was approved by the Institutional Review Board at UCLA (18-001612).

Sample

The UC Health Care Planning Study is a multisite cluster randomized trial that tested three ACP interventions among seriously ill patients aged 18 years or older receiving outpatient care (at least two visits in the past 2 years) from physicians in University of California primary care clinics (41 Los Angeles, 6 Irvine, and 3 San Francisco clinics). Of 6154 patients with serious illness without an advance directive in the prior three years who were eligible to receive an ACP intervention as part of the UC Health Care Planning Study,⁹ 5382 received the study baseline survey via mail (and 3714 or 69% received telephone follow-up) in the latter half of 2019 and beginning of 2020. Serious illness was defined using a validated automatic algorithm of electronic health record phenotype using administrative billing codes, encounter data, and clinical information.

The definition of serious illness required an at-risk medical diagnosis (cancer, heart failure, chronic obstructive pulmonary disease, end-stage liver disease, end-stage renal disease, or amyotrophic lateral sclerosis) linked with advanced age or a level of severity such that ACP would be a priority, defined as: (1) poor short-term survival prognosis or (2) developing incapacity or (3) worsening functional status or (4) high burden of disease (causing excessive suffering, which may be related to health care utilization).

Patients were excluded from survey eligibility if they did not speak English or Spanish, or their primary care physician indicated that they had moderate or severe cognitive impairment or might be harmed by the survey that included questions about end-of-life preferences. Patients were surveyed in their preferred language of English ($n=989$) or Spanish ($n=111$).

Measures

The baseline survey included four CAHPS Health Plan Survey 5.1 communication items (How often did this doctor explain things in a way that was easy to understand? How often did this doctor listen carefully to you? How often did this doctor show respect for what you had to say? How often did this doctor spend enough time with you?) and a care coordination item ("How often did this doctor seem to know the important information about your medical history?") that are scored as a 5-item communication composite in the Primary Care First Patient Experience of Care Survey: <https://pcfpecs.org/General-Information/About-PCF-PECS>

The instructions preceding the five items were as follows: "Your personal doctor could be a doctor, a nurse practitioner, or anyone else you see for regular medical care." All items were administered using the CAHPS *Never*, *Sometimes*, *Usually*, or *Always* response choices, and an "In the last 12 months" recall interval.

We also administered a 4-item ACP Engagement scale¹⁰ and a single question about confidence in filling out ACP-related medical forms.¹¹ In addition, we created a 5-item scale assessing confidence in others' knowledge of one's medical wishes: (1) How confident are you that if you were unconscious or in a coma that your doctor would know what you would or would not want done for you? (2) How confident are you that if you were unconscious or in a coma that your family or friends, including the person helping to make medical decisions for you, would know what you would or would not want done for you? (3) How confident are you that your doctors know what is important to you for your medical care at the end of life? (4) How confident are you that your family and/or friends know what is important to you for your medical care at the end of life? (5) How confident are you that you will get the medical care that is right for you at the end of life? We also administered a global physical health item ("In general, how would you rate your physical health?") and a global mental health item ("In general, would you say your quality of life is") both asked with *Poor*, *Fair*, *Good*, *Very Good*, or *Excellent* response options.^{12,13}

Analysis plan

To assess dimensionality of the five CAHPS items, we examined principal component eigenvalues and estimated internal consistency reliability¹⁴ for the 5-item communication scale. To evaluate the assumptions behind scoring responses to the CAHPS items, we fit an item response theory graded response model¹⁵ to obtain item parameters. The item discrimination or slope parameter indicates how strongly an item is related to the scale score. The item threshold ("difficulty") parameters are estimated on a z -score metric (mean=0 and standard deviation [SD]=1) and indicate the likelihood of selecting each response option. The CAHPS items are scored so that a higher score is associated with more positive patient experience.

Because item thresholds are reported on a *z*-score metric and indicate that the underlying communication score needed to have a 50% change of responding above the threshold, a negative item threshold indicates that most people in the sample are likely to pick a response option above the threshold. Item characteristic curves indicate the probability of selecting each response option of an item by the estimated communication scale score. Scale information is analogous to reliability of measurement but varies by the scale score (i.e., extent to which experience with communication was negative or positive).

We hypothesized that more positive assessments of doctor communication would be positively associated with confidence that others would follow one's medical wishes, ACP engagement, and confidence in completing ACP-related

medical forms. To evaluate these hypotheses, we estimated product-moment correlations of the simple-summed 5-item CAHPS communication scale with confidence in other's knowledge of ACP medical wishes, ACP engagement, and confidence filling out ACP-related medical forms measures. We interpret 0.100 as small, 0.243 as medium, and 0.371 as a large correlation based on Cohen¹⁶ effect size (*d*) rules of thumb: $r = d/\sqrt{d^2 + 4}$. Analyses were conducted using SAS 9.4 (SAS Institute, Cary, NC).

Results

Of the 5382 seriously ill patients who were invited, 1100 (20%) completed the CAHPS survey (999 by mail, 70 by phone, and 31 by email). The average age of the sample was 69 (median = 72; range = 22–102). The majority was male (52%); 18% were Hispanic, 9% Asian, and 7% Black; 24% were high school graduates or had less education; 60% were in a committed relationship. Twelve percent of the sample spoke a language other than English at home. The enrolled participants were like the population of seriously ill patients¹⁷ in gender (52% vs. 52% male), age (mean of 69 vs. 71), race/ethnicity (18% vs. 19% Hispanic, 9% vs. 12% Asian, 7% vs. 9% Black), primary language (88% vs. 85% English), and social vulnerability index¹⁸ (0.37 vs. 0.38) (Table 1).

The estimated Patient-Reported Outcomes Measurement Information System (PROMIS[®]) global physical health scale was 45 (SD = 7) and global mental health scale was 48 (SD = 8), both worse than the mean of 50 for the U.S. general population.¹⁹

Item characteristics

Table 2 provides frequencies for the five communication items in the sample. The items are skewed such that most of the respondents give the most positive response (*Always*) for each of the items.

Eigenvalues of the polychoric correlation matrix indicated a single factor (first two eigenvalues were 4.04 and 0.34). Internal consistency reliability of the 5-item CAHPS composite was 0.88, exceeding the minimum 0.70 threshold for group-level applications.²⁰

Item characteristic curves based on estimating the graded response model are shown in Figure 1. The curves show the

TABLE 1. SAMPLE CHARACTERISTICS (N = 1100)

Characteristic	Estimate
Gender	
Male	52%
Age	Mean = 69; Median = 72 (range: 22–102)
Race/ethnicity	
Hispanic	18%
White	60%
Asian	9%
Black	7%
Other	6%
Primary language spoken at home	
English	88%
Spanish	10%
Other	2%
Education	
Some high school or less	10%
High school graduate or General education diploma	14%
Some college or two-year degree	28%
Four-year college degree	21%
More than four-year college degree	27%
Insurance	
Medicare	36%
Commercial	30%
Medicaid	20%
HMO/managed care	5%
Other	9%
Social Vulnerability Index (0–1 possible range)	Mean = 0.37
Married or in committed relationship	60%
Self-rated physical health	
Poor	8%
Fair	31%
Good	36%
Very good	21%
Excellent	4%
Self-rated quality of life	
Poor	3%
Fair	20%
Good	32%
Very good	32%
Excellent	14%

TABLE 2. ITEM FREQUENCIES FOR THE COMMUNICATION SCALE

Item	Never	Sometimes	Usually	Always
Explain	2%	4%	31%	63%
Listen	1%	6%	24%	69%
Knows history	1%	7%	31%	61%
Respect	1%	3%	18%	78%
Spends time	2%	7%	27%	64%

Explain: How often did this provider explain things in a way that was easy to understand? Listen: How often did this provider listen carefully to you? Knows history: How often did this doctor seem to know the important information about your medical history? Respect: How often did this provider show respect for what you had to say? Spends time: How often did this provider spend enough time with you? All items were administered using *Never*, *Sometimes*, *Usually*, or *Always* response options.

Percentages in a row may not add up to 100% due to rounding.

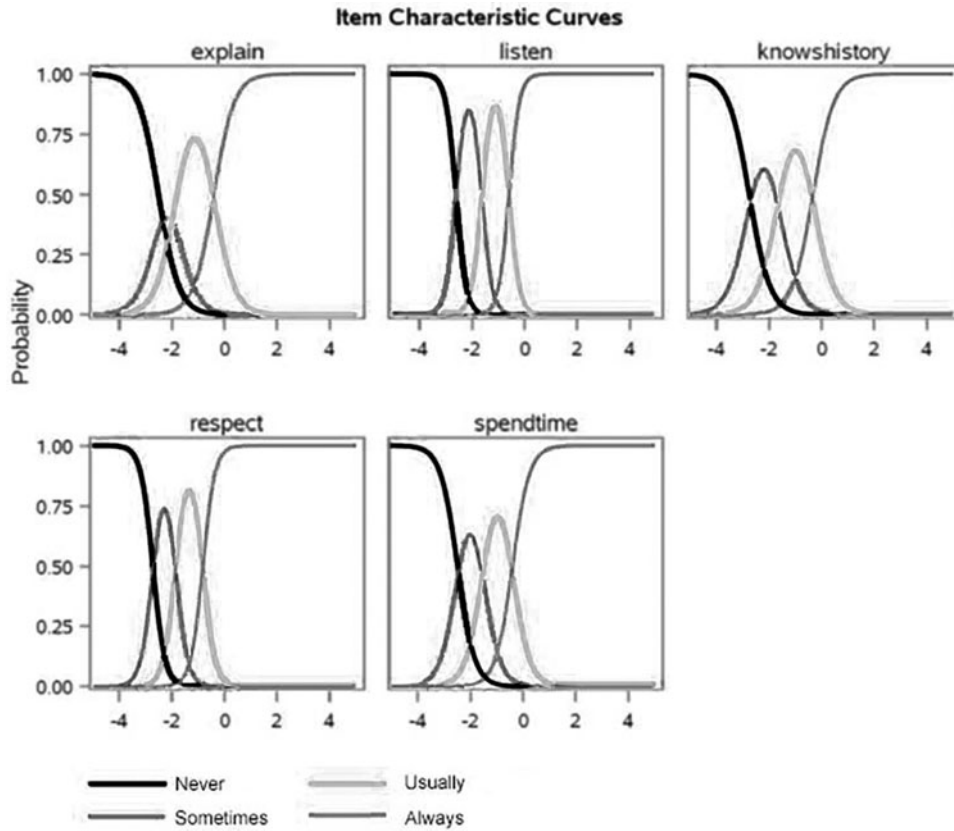


FIG. 1. Item characteristic curves for CAHPS Communication Items.

probability of selecting each of the four CAHPS response options along the underlying communication continuum (expressed as a z -score) with a higher score representing better communication. These curves provide support for the informativeness of each of the CAHPS response options except for the *sometimes* response choice to explain things in a way that was easy to understand question. That is, this response option is only most likely to be selected at a very narrow point along the underlying communication continuum.

Item thresholds and slope parameters are given in Table 3. These thresholds represent where on the underlying communication continuum (z -score), there is a 50% chance of selecting a response choice below versus above it. Threshold 1 represents where there is a 50% probability of selecting *Never* versus *Sometimes*, *Usually*, or *Always*; threshold 2 of selecting *Never* or *Sometimes* versus *Usually* or *Always*; and threshold 3 represents *Never*, *Sometimes*, or *Usually* versus *Always*. These threshold estimates indicate that the CAHPS items are “easy” items (negatively skewed). A patient needs to have a communication score >2.5 SDs below the average to have a 50% probability of picking the most negative response option (*Never*) to each item. Patients with communication scores below the average still have a 50% chance of selecting the most positive option (*Always*) to each item.

The item slope estimates reveal that all items are strongly related to the underlying communication score. The slopes range from 2.52 (knows history) to 5.10 (listens carefully). The listen carefully, show respect, and spend enough time items are the most discriminating items (i.e., most strongly represent the underlying construct).

Internal consistency reliability for the 5-item CAHPS communication scale was 0.88. Figure 2 shows the test (scale) information curve. For reference, information of 10 is equivalent to 0.90 reliability: $(\text{Information} - 1)/\text{Information}$. The figure shows that information and reliability of the 5-item CAHPS communication scale is highest between z -scores of about -3 and -0.5 . Hence, the scale is most accurate in assessing patients who are negative in their perceptions of doctor communication. The mean for the CAHPS communication scale scored on a 0–100 possible range was 86 ($SD=18$).

TABLE 3. ITEM THRESHOLD AND SLOPE PARAMETERS FOR THE COMMUNICATION SCALE

Item	Threshold 1	Threshold 2	Threshold 3	Slope
Explain	-2.52	-1.85	-0.40	2.58
Listen	-2.56	-1.57	-0.53	5.10
Knows history	-2.78	-1.65	-0.33	2.52
Respect	-2.73	-1.87	-0.82	4.38
Spends time	-2.50	-1.54	-0.40	3.09

Explain: How often did this provider explain things in a way that was easy to understand? Listen: How often did this provider listen carefully to you? Knows history: How often did this doctor seem to know the important information about your medical history? Respect: How often did this provider show respect for what you had to say? Spends time: How often did this provider spend enough time with you? All items were administered using *Never*, *Sometimes*, *Usually*, or *Always* response options.

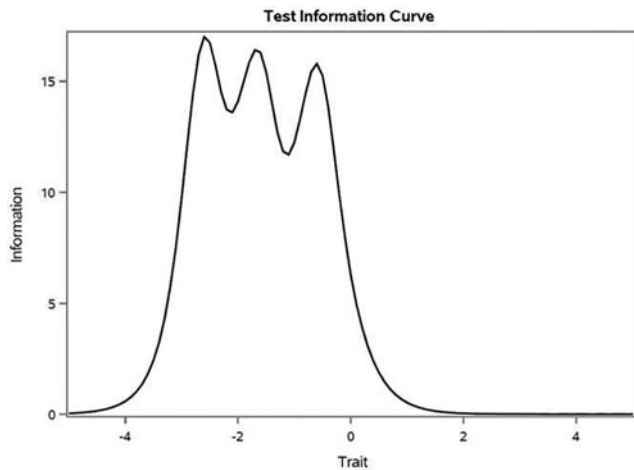


FIG. 2. Information curve for the 5-item CAHPS Communication Scale.

Internal consistency reliabilities were 0.83 for the 5-item confidence in others' knowledge of ACP medical wishes scale and 0.87 for the 4-item ACP Engagement scale. Correlations of the doctor communication scale with confidence in others' knowledge of ACP medical wishes ($r=0.32$, $p<0.0001$) was "medium" size, and correlations with the ACP Engagement scale ($r=0.14$, $p<0.0001$) and confidence with filling out medical forms ($r=0.09$, $p=0.0022$) were small.

Discussion

This study provides additional support for the reliability and validity of a CAHPS communication scale in a sample of seriously ill ambulatory patients. As hypothesized, the communication scale was positively associated with ACP perceptions and behaviors.

Patients who perceived better communication by their doctors were more confident that others would know their medical wishes and had engaged in more ACP such as putting into writing their wishes about the medical care they want if they become very sick or near the end of life, naming someone to make medical decisions for them, and talking to that person and their doctor about the kind of medical care they want. They were also more confident in completing ACP-related medical forms. These results are consistent with previous research showing that good communication is essential for effective ACP.²¹

One of the CAHPS frequently asked questions²² is: How and why do you combine the response categories for the never/sometimes/usually/always composite measures? Collapsing as recommended (to three categories) or preserving all four categories are CAHPS analysis program options.²³ The CAHPS consortium recommended combining the *Never* and *Sometimes* response options in scoring. If this recommendation is followed, then the mean for the 5-item communication scale in this sample is 80 (SD=25) on a 0–100 possible range. In comparison, the CAHPS health plan database average in 2021 for 176,635 Medicare recipients (<https://datatools.ahrq.gov/cahps>) was 88. Hence, communication was reported to be less positive in the current sample of seriously ill patients than for a national sample of adults with Medicare insurance.

The results of this study show appropriate monotonic distinctions in communication across the response choices (*Never*, *Sometimes*, *Usually*, *Always*), suggesting that preserving four categories in scoring is warranted.²⁴ Two of the three items identified as most representative of communication in terms of the item slope parameter (listens carefully, spends enough time) were recommended as a possible CAHPS communication composite short form.²⁵ The prior work and results of this study suggest that listening to patients and spending enough time with them are core aspects of good doctor-patient communication. The inclusion of a care coordination item (doctor knowledge about the patient's medical history) with four standard CAHPS communication items is consistent with a previous study showing high correlations between patient reports of care coordination and communication.³

Rather than assuming the same reliability for all patients, the test information curve in this study shows that reliability of the CAHPS communication scale is very high for patients who have negative experiences with doctor communication and low for those with average or more positive experiences. That is, the CAHPS communication scale can distinguish precisely among those who have negative experiences but not among those with the typical more positive experiences with care. Hence, the scale is most accurate for identifying communication experience where quality improvement efforts may be most useful.²⁶

While the response rate was low (20%), the sample size was large and representative of the target population demographic characteristics. Because the study participants were patients of physicians at three California academic medical centers, it is unknown the extent to which the findings generalize to other settings. Further research evaluating the CAHPS communication scale and ACP is needed in other samples. In addition, further investigation of how patient and provider facing interventions can optimize patient experience with communication is needed.²⁷

Acknowledgments

The authors appreciate the administrative assistance of Victor Gonzalez. R.D.H. is supported by a cooperative agreement from the Agency for Healthcare Research and Quality (U18 HS029321). A.M.W. is funded by the Cambia Health Foundation's Sojourns Scholars Leadership Program. R.L.S. is funded, in part, by the National Institute and Aging, National Institutes of Health (KZ4AG054415).

Authors' Contributions

R.D.H.: Conceptualization and Methodology, A.M.W.: Data curation and Reviewing and Editing, R.L.S.: Data curation and Reviewing and Editing, A.C.: Reviewing and Editing, N.S.W.: Data curation, Reviewing and Editing, and Supervision (use CRediT format—<https://www.elsevier.com/authors/policies-and-guidelines/credit-author-statement>).

Disclaimer

The views presented in this publication are solely the responsibility of the authors and do not necessarily represent the views of PCORI®, its Board of Governors, or Methodology Committee.

Funding Information

Research reported in this report was funded through a Patient-Centered Outcomes Research Institute® (PCORI®) Award (PLC-1609-36291).

Author Disclosure Statement

No competing financial interests exist.

References

- Sanghavi P, McWilliams JM, Schwartz AL, et al. Association of low-value care exposure with health care experience ratings among patient panels. *JAMA Intern Med* 2021; 181(7):941–948; doi: 10.1001/jamainternmed.2021.1974
- Cleary PD, Lubalin J, Hays RD, et al. Debating survey approaches: Letter to the Editor. *Health Aff* 1988;17:265–266; doi: 10.1377/hlthaff.17.1.265
- Hays RD, Martino S, Brown J, et al. Evaluation of a care coordination measure for the Consumer Assessment of Healthcare Providers and System (CAHPS®) Medicare Survey. *Med Care Res Rev* 2014;71:192–202; doi: 10.1177/1077558713508205
- Hays RD, Mallett JS, Haas A, et al. Associations of CAHPS composites with global ratings of the doctor vary by Medicare beneficiaries' health status. *Med Care* 2018; 56(8):736–739; doi: 10.1097/MLR.0000000000000942
- Hays RD, Skootsky SA. Patient experience with in-person and telehealth visits before and during the COVID-19 pandemic at a large integrated health system in the United States. *J Gen Intern Medicine* 2022;37(4):847–852; doi: 10.1007/s11606-021-07196-4
- Quigley DD, Reynolds K, Dellva S, et al. Examining the business case for patient experience: A systematic review. *J Healthc Manag* 2021;66:200–224; doi: 10.1097/JHM-D-20-00207
- Cappelleri, JC, Lundy JJ, Hays RD. Overview of classical test theory and item response theory for quantitative assessment of items in developing patient-reported outcome measures. *Clin Ther* 2014;36(5):648–662; doi: 10.1016/j.clinthera.2014.04.006
- Hambleton RK, Swaminathan H. *Item Response Theory Principles and Applications*. Kluwer-Nijhoff Publishing: Boston, MA; 1985.
- Walling AM, Sudore R, Bell D, et al. Population-based, pragmatic trial of advance care planning in primary care in the University of California health system. *J Palliat Med* 2019;22:S72–S81; doi: 10.1089/jpm.2019.0142
- Shi Y, Barnes DE, Boscardin J, et al. Brief English and Spanish survey detects change in response to advance care planning Interventions. *J Pain Symptom Manage* 2019;58(6): 1068–1074.e5; doi: 10.1016/j.jpainsymman.2019.09.004
- Sarkar U, Schillinger D, López A, et al. Validation of self-reported health literacy questions among diverse English and Spanish-speaking populations. *J Gen Intern Med* 2011; 26(3):265–271; doi: 10.1007/s11606-010-1552-1
- Hays RD, Bjorner J, Revicki DA, et al. Development of physical and mental health summary scores from the Patient-Reported Outcomes Measurement Information System (PROMIS) global items. *Qual Life Res* 2009;18: 873–880; doi: 10.1007/s11136-009-9496-9
- Hays RD, Schalet BD, Spritzer KL, et al. Two-item PROMIS global physical and mental health scales. *J Patient Rep Outcomes* 2017;1:2; doi: 10.1186/s41687-017-0003-8
- Cronbach LJ. Coefficient alpha and the internal structure of tests. *Psychometrika* 1951;16:297–334; doi: 10.1007/BF02310555
- Samejima F. The graded response model. In: *Handbook of Modern Item Response Theory*. (van der Linden WJ, Hambleton R eds.) Springer: New York, NY; 1996.
- Cohen, J. A power primer. *Psychol Bull* 1992;112:155–159; doi: 10.1037/0033-2909.112.1.155
- Chau AJ, Sudore RL, Hays RD, et al. Telephone outreach enhances recruitment of underrepresented seriously ill patients for an advance care planning pragmatic trial. *J Gen Intern Med* 2023. [Epub ahead of print]; doi: 10.1007/s11606-022-08000-7
- Flanagan BE, Hallisey EJ, Adams E, et al. Measuring community vulnerability to natural and anthropogenic hazards: The Centers for Disease Control and Prevention's social vulnerability index. *J Environ Health* 2018;80(10):34–36.
- Schalet BD, Rothrock NE, Hays RD, et al. Linking physical and mental health summary scores from the Veterans RAND 12-item health survey (VR-12) to the PROMIS global health scale. *J Gen Intern Med* 2015;30(10):1524–1530; doi: 10.1007/s11606-015-3453-9
- Nunnally JC, Bernstein IH. *Psychometric Theory*, 3rd ed. McGraw-Hill: New York, NY; 1994.
- Lakin J, Branne EN, Tulskey JA, et al. Advance care planning: Promoting effective and aligned communication in the elderly (ACP-PEACE): The study protocol for a pragmatic stepped-wedge trial of older patients with cancer. *BMJ Open* 2020;10:e040999; doi: 10.1136/bmjopen-2020-040999
- Agency for Healthcare Research and Quality. Frequently Asked Questions About CAHPS. Available from: <https://www.ahrq.gov/cahps/faq/index.html> [Last accessed: November 30, 2022].
- Yount N, Walsh K, Zaslavsky A. *Instructions for Analyzing Data from CAHPS® Surveys in SAS®: Using the CAHPS Analysis Program Version 5.0*. AHRQ Publication No. 20-M019. Agency for Health Care Research and Quality: Rockville, MD; 2020.
- Drake KM, Hargraves JL, Lloyd S, et al. The effect of response scale, administration mode, and format on responses to the CAHPS Clinician and Group survey. *Health Serv Res* 2014;49(4):1387–1399; doi: 10.1111/1475-6773.12160
- Stucky BD, Hays RD, Edelen MO, et al. Possibilities for shortening the CAHPS clinician and group survey. *Med Care* 2016;54:32–37; doi: 10.1097/MLR.0000000000000452
- Quigley DD, Elliot MN, Slaughter ME, et al. Shadow coaching improves patient experience with care, but gains erode later. *Med Care* 2021; 59(11):950–960; doi: 10.1097/MLR.0000000000001629
- Quigley DD, Qureshi N, Rybowski L, et al. Summary of the 2020 AHRQ research meeting on Advancing methods of implementing and evaluating patient experience improvement using Consumer Assessment of Healthcare Providers and Systems (CAHPS) surveys. *Expert Rev Pharmacoecon Outcomes Res* 2022;22(6):883–890; doi: 10.1080/14737167.2022.2064848

Address correspondence to:

Ron D. Hays, PhD
 UCLA Department of Medicine—GIM/HSR
 1100 Glendon Avenue
 Los Angeles, CA 90024
 USA

E-mail: drhays@ucla.edu