## Title

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# Understanding the Patient Experience: Analysis of 2-Word Assessment and Its Relationship to Likelihood to Recommend in Outpatient Hand Surgery

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## Abstract

**Background:** Actionable feedback from patients after a clinic visit can help inform ways to better deliver patient-centered care. A 2-word assessment may serve as a proxy for lengthy post-visit questionnaires. We tested the use of a 2-word assessment in an outpatient hand clinic. **Methods:** New patients were asked to provide a 2-word assessment of the following: (1) their physician; (2) their overall experience; and (3) recommendations for improvement and their likelihood to recommend (LTR) after their clinic visit. Sentiment analysis was used to categorize results into positive, neutral, or negative sentiment. Recommendations for improvement were classified into physician issue, system issue, or neither. We evaluated the relationship between LTR status, sentiment, actionable improvement opportunities, and classification (physician issue, system issue, or neither). Recommendations for improvement were classified into themes based on prior literature. **Results:** Sixty-seven (97.1%) patients noted positive sentiment toward their physician; 67 (97.1%) noted positive sentiment toward their overall experience. About 31% of improvement recommendations were system-based, 5.9% were physician-based, and 62.7% were neither. Patients not LTR were more likely to leave actionable opportunities for improvement than those LTR ($P = .01$). Recommendations for improvement were classified into predetermined themes relating to: (1) physician interaction; (2) check-in process; (3) facilities; (4) unnecessary visit; and (5) appointment delays. **Conclusion**: Patients not likely to recommend provided actionable opportunities for improvement using a simple 2-word assessment. Implementation of a 2-word assessment in a hand clinic can be used to obtain actionable, real-time patient feedback that can inform operational change and improve the patient experience.

**Keywords:** likelihood to recommend, quality improvement, patient experience, 2-word assessment

## Introduction

Patient experience is used by some health care systems and payers as a dimension of quality of care. For example, the Centers for Medicare and Medicaid Services uses the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) and the Clinician & Group Consumer Assessment of Healthcare Providers and Systems (CG-CAHPS) patient-experience survey for assessment of quality of inpatient hospital stays and office visits, respectively.[1] The results impact a portion of reimbursement under Medicare's value-based purchasing program.[2,3] In an effort to provide physicians and practices with actionable data, several vendors (eg, Press Ganey) provide organizations a service to distribute questionnaires, analyze results, and provide comparisons between time points or other physicians.[4-6] A common item among these questionnaires is a likelihood to recommend (LTR) scale (1 question, usually on an ordinal 1-5 scale, such as "Based on your experience, are you likely to recommend us to your friends or family").[7-10] Likelihood to recommend is valued by health systems as evidence in other industries has shown it to be reflective of customer loyalty, satisfaction, and increasing revenue and market share.[11] Although an LTR scale is frequently included on the above questionnaires, some health care facilities use it as patients exit the hospital or clinic.

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Importantly, without a sufficient understanding of the patient experience, organizations may fail to address areas for improvement, and attempts to improve care may even have unintended consequences.[12,13] The complex interplay of factors affecting the patient experience is not fully understood. For example, does a patient describe his or her experience as poor because he or she did not feel listened to or because the radiology wait time was too long? In evaluating negative patient-experience comments after shoulder arthroplasty, Menendez et al[14] noted that 27% of comments were related to the room condition (eg, too cold). Physicians may argue that despite scores being tied to reimbursement, they have little control over the scores pointing to the effect of issues at the system level (eg, parking delays) on their reimbursement.[12,14] The increased study of systems and process improvement in health care further validates this importance.[12,15]

Obtaining actionable, real-time data on factors that influence the patient experience can inform real-time improvements to the operations of a physician practice. As such, researchers have previously tested a 2-word physician assessment as a simple, qualitative measure of the patient experience.[16] A free-text response box is provided to answer the question, "Please describe your provider in today's visit in 2 words." Singletary et al evaluated the feasibility of its use and correlated CG-CAHPS scores with 2-word assessment. They also identified top performers and systemic stressors, resulting in frequent negative responses. The opportunity for 2-word assessment to not only serve as a proxy for lengthy post-visit questionnaires but also as a means for qualitative and actionable feedback in real time is promising. We sought to pilot test the use of the 2-word assessment in an outpatient hand clinic and the relationship of LTR and 2-word assessment, and determine which words patients used to describe their experience.

## Methods

### Patient Selection

We enrolled patients from the outpatient hand and upper extremity clinic of 2 fellowship-trained orthopedic surgeons at a suburban academic medical center. We used consecutive sampling to enroll new patients aged ≥18 years demonstrating English literacy who presented to clinic. Surveys were administered by a research assistant after the completion of the visit prior to the patients exiting clinic. Because this study was considered quality improvement based on the criteria of our institution, it did not require institutional review board approval.

### Data Collection

Patients were asked to complete a 2-word assessment of the following: (1) their physician; (2) their overall experience; and (3) recommendations for improvement and an LTR scale (1 being "extremely unlikely" to 5 being "extremely likely"). The LTR data were dichotomized (1-4: not likely to recommend, 5: likely to recommend) based on implications from hospital administration, in accordance with quality improvement efforts (including those conducted at our hospital in the past), and to make the distribution that was skewed toward "extremely likely" more robust (given the propensity of most patients to select "extremely likely").[7,11,17-19] In addition, sentiment analysis, a method that allows the context of natural language to be evaluated for positive and negative intensity, was used to categorize the 2-word surveys into positive, neutral, or negative sentiment.[14,20,21] Sentiment analysis is commonly used in marketing and social media research to understand the consumer or user opinion.[21-23] Recommendations for improvement were classified into physician issue, system issue, and neither. These classifications were derived from prior investigations and were chosen as they are a proxy for gauging areas of improvement.[10,12,14] Recommendations for improvement were also classified into actionable improvement opportunities or not actionable improvement opportunities. Actionable improvement opportunities were defined as words and phrases that served a purpose or provided constructive feedback (eg, phrases like "very good" and "none" were classified as not actionable feedback, whereas phrases like "waited too long" or "online booking" were classified as actionable feedback). Two authors classified the phrases and words above, and discrepancies were resolved by the senior author.

### Data Analysis

As no patients expressed a negative 2-word sentiment, a Fisher exact test was used to determine whether the LTR status differed by 2-word sentiment (positive or neutral). A $\chi^2$ test was used to determine whether LTR status differed between those who expressed improvement related to the system, related to the physician, or neither. A Fisher exact test was used to determine the difference in actionable improvement opportunities between those likely to recommend and those not likely to recommend. To provide a more granular understanding, recommendations for improvement were classified into themes. Recommendations for improvement were reviewed and to provide a more granular understanding were classified into predetermined themes relating to the following: (1) physician interaction; (2) check-in process; (3) facilities; (4) unnecessary visit; and (5) appointment delays. This topic classification was adapted from recent studies analyzing patient-experience comments and their relationship to patient-rated quality of care.[14,23,24]

As an exploratory pilot and qualitative study, an a priori power analysis was not conducted. We included 69 patients and closed enrollment after 12 weeks, which included reaching saturation in our qualitative analysis when no new

domains were identified.[25] Based on prior work and qualitative research theory, we theorized that if we could not find a clinically meaningful result in 12 weeks of patient enrollment, then our results would not be clinically meaningful to the practicing hand surgeon.[25]

## Results

Sixty-nine patients completed the questionnaires (65% women, mean age of 46 years [SD, 18 years]; Table 1; 78.8% of patients were likely to recommend their physician). Sixty-seven (97.1%) patients noted positive sentiments toward their physician. Sixty-seven (97.1%) patients noted positive sentiments toward their overall clinic experience. In all, 31.4% of improvement recommendations were system-based, 5.9% were physician-based, and 62.7% were neither.

There was no difference in LTR between cohorts expressing positive or neutral sentiment in the 2-word survey (no patients noted negative sentiment), nor was there a relationship between LTR and patients noting either physician or system issues. Patients not likely to recommend were more likely to leave actionable opportunities for improvement than those likely to recommend ($P = .01$).

Recommendations for improvement were classified into themes (adapted from those previously described in the literature previously) relating to the following: (1) physician interaction; (2) check-in process; (3) facilities; (4) unnecessary visit; and (5) appointment delays[14,23,24,26] (Table 2).

**Table 1.** Demographics.

| Demographic domain | Result |
|---|---|
| Total | 69 |
| Mean age, y | 46 (SD 18) |
| Sex, No. (%) | |
| Male | 24 (35) |
| Female | 44 (65) |
| Annual household income, No. (%) | |
| <$49 000 | 17 (27) |
| From $50 000-$99 999 | 12 (19) |
| From $100 000-$149 999 | 10 (16) |
| From $150 000-$199 999 | 8 (13) |
| From $200 000-$249 999 | 6 (10) |
| >$250 000 | 9 (15) |
| Race/ethnicity, No. (%) | |
| White/Caucasian | 34 (50) |
| Black or African American | 2 (3) |
| American Indian or Alaska Native | 1 (1) |
| Asian | 18 (27) |
| Hispanic | 9 (13) |
| Native Hawaiian or other Pacific Islander | 0 (0) |
| Other | 4 (6) |
| Employment status, No. (%) | |
| Full-time | 29 (44) |
| Part-time | 5 (8) |
| Retired | 9 (14) |
| No work outside the home | 2 (3) |
| Disabled | 5 (8) |
| Unemployed | 4 (6) |
| Student | 11 (17) |
| Highest level of education, No. (%) | |
| Elementary school | 1 (2) |
| High school | 12 (18) |
| 2-year college | 8 (12) |
| 4-year college | 22 (34) |
| Post-college/graduate | 22 (34) |
| Relationship status, No. (%) | |
| Married | 30 (47) |
| Domestic partnership | 5 (8) |
| Single, never married | 23 (36) |
| Single, divorced, or separated | 5 (8) |
| Single, widowed | 1 (1) |
| Primary insurance type, No. (%) | |
| Medicaid/Medi-Cal | 3 (4) |
| Medicare | 11 (16) |
| Military | 3 (4) |
| Privately insured | 50 (73) |
| San Mateo County Health Insurance | 2 (3) |
| Uninsured | 0 (0) |

## Discussion

We found that patients who were not likely to recommend their episode of care were more likely to leave actionable opportunities for improvement. There was no correlation between LTR and a 2-word assessment of the physician or the overall experience, nor was there a relationship between LTR and patients noting either physician or system issues. Although a 2-word assessment has been posed as a quick and efficient replacement for lengthy inpatient HCAHPS surveys, its utility may be better realized in obtaining actionable, real-time data that inform changes to the operations of an outpatient hand surgery practice.

Our findings are at odds with Singletary et al[16] who demonstrated significant correlation between CG-CAHPS and the 2-word assessment at a large academic medical center. Our comparison, however, evaluated different metrics (CG-CAHPS and LTR) at a different time interval (several weeks vs immediately after the visit). Our results suggest that a qualitative 2-word assessment used immediately after an outpatient visit may not relate to other attributes associated with LTR—loyalty, satisfaction, and revenue. Another discrepancy between our study and the prior work is the high frequency of negative words noted by Singletary et al. While survey administration was not detailed in this prior work, it is possible that the clinic administration of our study introduced a positive response bias. Despite these discrepancies, we found that a 2-word assessment can be implemented with the goal of obtaining actionable and real-time feedback to specific physicians

**Table 2.** Themes and Actionable Opportunities for Improvement.

| Physician interaction | Check-in process | Facilities | Unnecessary visit | Appointment delays |
|---|---|---|---|---|
| Be friendly | Communication about XR | Parking | Having no need to come in | Appointment was quite delayed |
| More understanding | Inform about XR in advance | More parking | | Less waiting |
| Understand insurance better | Advance notice of schedules | Place was incredibly cold | | Reduce wait |
| Time management | Forms online | Closer to home | | Waited too long |
| Faster visit | Less paperwork | | | |
| More time | Online booking | | | |
| | Too many forms | | | |
| | More staff at reception | | | |
| | More visibility in status | | | |
| | Timely intake | | | |
| | Quicker check-in | | | |

Note. XR: = radiographs

and identifying systemic stressors from the patient's perspective.

A common tenant of continuous quality improvement, learning health systems, and communication frameworks is minimizing the time for feedback.[12,27-29] The 2-word assessment that allows for immediate feedback generated by the patient (as opposed to a third party employing standardized questions) allows physicians and hospital systems to take ownership of their unique patients and make meaningful changes. For example, Boston Children's Hospital (BCH) conducted an in-depth investigation of the patient experience and identified several pain-points for patients and their families.[30,31] As the administrative burden placed on families (eg, appointment confirmation, previsit paperwork) was a highlighted opportunity for improvement, BCH implemented a Customer Relationship Management tool to address this burden, and preliminary feedback has demonstrated decreased patient wait times and improved patient experience.

Physicians may object to linking outcome metrics to their reimbursement as they have little control over the scores (eg, parking delays, radiology wait times, hasty residents).[12,14] A recent study sought to evaluate factors that influence satisfaction of plastic surgery patients using "likelihood of your recommending this care provider to others" and "likelihood of recommending our practice to others" as primary outcome variables.[10] The authors found that patients' confidence in their physician and the physician's concern for questions were best correlated with the primary outcome measures, especially when compared with access to services and experience with the office staff. In contrast, our results do not demonstrate a relationship between issues related to the physician or system and LTR.

The results of this study should be considered within its limitations. Although LTR is not a perfect metric of patient satisfaction or quality, from a clinic or hospital administration standpoint and operating from a business perspective, LTR serves as a proxy for patient satisfaction by means of loyalty, referrals, and ultimately revenue to the system. We understand that CG-CAHPS and other metrics are valuable measures for comparison and benchmarking; however, these surveys are lengthy, requiring up to 15 minutes to complete,[32] cannot be tracked to individual patients, and administration may be up to 6 weeks after the episode of care. A potential bias lies in the notion that patients may have given more positive ratings, thinking that their answers would affect their clinical care or physician's perception of them. This was minimized by having a research assistant (not involved in care delivery) deliver surveys after their visit was complete and ensuring that their responses would be de-identified for analysis. At the same time, completing standardized questionnaires 6 weeks after a visit are susceptible to recall bias to which our study was not exposed. In addition, we did not collect or control for patient demographics, conditions, and so on, nor did we evaluate or analyze those patients who declined to participate. Menendez et al[14] noted that women and sicker patients were more likely to give negative patient-experience comments. Understanding patient-related factors, both modifiable and nonmodifiable, that affect the patient experience is important for both case-mix adjustment and informing quality improvement measures. We recognize that the classifications and definitions of sentiment, areas for improvement, and actionable opportunities for improvement may be open to interpretation. We defined these based on prior literature and in accordance with potential practice/experience improvements; however, this may vary by physician or hospital system. Finally, the high rate of opportunities for improvement that were classified as neither should be noted. These included phrases such as "none," "very happy," "neither," and "no ideas," which we interpreted as not actionable. Despite the high rate of opportunities for improvement classified as neither, the phrases that were

actionable allow for changes to the system that may improve the patient experience if addressed.

This study shows that although those not likely to recommend do not express different sentiments (toward their physician or their experience) than those likely to recommend, nor do they note issues related more to physicians or system compared with those likely to recommend, they do provide actionable opportunities for feedback. This insight may be used in future practice to obtain actionable, real-time patient feedback that can inform operational change and improve the patient experience.

## Ethical Approval

This study was approved by our institutional review board.

## Statement of Human and Animal Rights

All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2008.

## Statement of Informed Consent

Informed consent was not obtained from patients given that this study was considered quality improvement.

## Declaration of Conflicting Interests

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