

# Development of an Expectations Survey for Patients Undergoing Foot and Ankle Surgery

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## Abstract

**Background:** Many authors have reported on patient satisfaction from foot and ankle surgery, but rarely on expectations, which may vary widely between patients and strongly affect satisfaction. In this study, we aimed to develop a patient-derived survey on expectations from foot and ankle surgery.

**Methods:** We developed and tested our survey using a 3-phase process. Patients with a wide spectrum of foot and ankle diagnoses were enrolled. In phase 1, patients were interviewed preoperatively with open-ended questions about their expectations from surgery. Major concepts were grouped into categories that were used to form a draft survey. In phase 2, the survey was administered to preoperative patients on 2 occasions to establish test-retest reliability. In phase 3, the final survey items were selected based on weighted kappa values for response concordance and clinical relevance.

**Results:** In phase 1, 94 preoperative patients volunteered 655 expectations. Twenty-nine representative categories were discerned by qualitative analysis and became the draft survey. In phase 2, another 60 patients completed the draft survey twice preoperatively. In phase 3, 23 items were retained for the final survey. For retained items, the average weighted kappa value was 0.54. An overall score was calculated based on the amount of improvement expected for each item on the survey and ranged from zero to 100, with higher scores indicating more expectations. For patients in phase 2, mean scores for both administrations were 65 and 66 and approximated normal distributions. The intraclass correlation coefficient between scores was 0.78.

**Conclusion:** We developed a patient-derived survey specific to foot and ankle surgery that is valid, reliable, applicable to diverse diagnoses, and includes physical and psychological expectations. The survey generates an overall score that is easy to calculate and interpret, and thus offers a practical and comprehensive way to record patients' expectations. We believe this survey may be used preoperatively by surgeons to help guide patients' expectations and facilitate shared decision making.

**Level of Evidence:** Level II, cross-sectional study.

**Keywords:** patient expectations, patient-derived survey, patient satisfaction, foot and ankle surgery

## Introduction

In orthopaedic surgery, outcomes have traditionally been assessed from the surgeon's perspective, using instruments derived from clinicians' knowledge and experience. The patient's perspective is most often captured, if at all, by asking about their satisfaction with the result of their treatment. However, assessing outcomes from the patient's perspective can be accomplished in more detail by examining their preoperative expectations, which strongly relate to their ultimate satisfaction.<sup>10,18</sup> When asked directly, patients will volunteer expectations that may not be realistic or pertinent, but are nonetheless still important to them. Patients' expectations are derived from discussions with health care providers, general

knowledge of treatment success rates, prior experiences of self and others, and perhaps increasingly from media and Internet resources. At the Hospital for Special Surgery,

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several patient-derived surveys have been developed and tested for hip, knee, shoulder, and spine surgery.<sup>5,11-18</sup> There are currently no standardized scales to measure patients' expectations of foot and ankle surgery.

Many authors have reported on patient satisfaction following foot and ankle surgery, but rarely on expectations—which may strongly affect satisfaction. A patient satisfaction questionnaire (PSQ-10) was developed in the United Kingdom in the 1990s, specifically for patients undergoing foot surgery.<sup>22</sup> The first question asked patients postoperatively to state freehand what they expected to gain from treatment. Patients most often expected pain relief, improved mobility, and improved shoe fitting.<sup>26</sup> However, these expectations were assessed retrospectively after surgery, and may have changed over the course of recovery.

Tai et al developed a patient-derived questionnaire for expectations from surgery for hallux valgus, which was not validated. Expectations that were most important to patients included improved walking, reduced pain, ability to wear daily shoes, and improved sport/fitness/health.<sup>24</sup> Another study compared patients' expectations from hallux valgus surgery to those of their surgeons, but did not develop a questionnaire. Again, pain relief, improved walking, and improved ability to wear shoes were most commonly cited.<sup>23</sup> Both of these studies were in reference to surgeries for hallux valgus alone.

Thus, there are currently no uniform and valid methods to measure patients' expectations following foot and ankle surgery. In this study, we aimed to develop and test a patient-derived survey on expectations from foot and ankle surgery that could be applied to the diverse diagnoses seen in a standard orthopedic foot and ankle practice.

## Methods

This study was approved by our Institutional Review Board. All patients provided written informed consent with the exception of patients enrolled by telephone, who provided oral consent. The study was conducted in 3 phases.

### *Phase 1: Identifying Expectations and Developing a Draft Survey*

**Identifying Expectations.** Consecutive patients scheduled for elective foot or ankle surgery were identified from the operating schedules of 4 fellowship-trained foot and ankle orthopaedic surgeons. Patients were eligible if they were 18 years of age or older, spoke English fluently, and could provide informed consent. Patients were excluded if they were undergoing emergent surgery or very minor procedures (such as removal of hardware, exostectomy, or flexor tenotomy).

Patients were enrolled either in person when they presented for preoperative testing or by telephone if they were not returning to the hospital for testing. Patients were

interviewed and asked these open-ended questions: "What do you expect as a result of your foot (or ankle) surgery? After you have recuperated, what do you expect will be different?" Patients were encouraged to volunteer as many expectations as they wished and their responses were written down in field notes. Patients were reminded to cite what they expected, not what they hoped for.

Enrollment ended when no new expectations were cited (ie, data saturation) and when patients from each of 6 major diagnostic groups had been enrolled. These diagnoses were ankle arthritis, ankle instability, osteochondral lesions of the ankle, flatfoot deformity, hallux valgus, and hallux rigidus.

Demographic characteristics were obtained from patients. The primary diagnosis prompting surgery was obtained from the surgeon's office notes. Major comorbidity was obtained from chart review and weighted by severity according to the Charlson Comorbidity Index.<sup>1</sup> Patients were asked about previous foot or ankle surgery, previous orthopaedic surgery, prior treatments for their current condition, and the impact their current foot or ankle condition had on their job and footwear.

Patients also completed a series of standard surveys including the validated Foot & Ankle Outcome Score (FAOS), Short Form 12 version 2 (SF-12), Patient Health Questionnaire-8 (PHQ-8), and Generalized Anxiety Disorder 7-item scale (GAD-7). The FAOS assesses outcomes in 5 subscales: pain, other symptoms, activities of daily living, sports and recreational activities, and foot and ankle related quality of life. It has been validated in the assessment of outcomes in adult-acquired flatfoot deformity, ankle instability, hallux valgus, hallux rigidus, and ankle osteoarthritis.<sup>2,6,19-21</sup> General function was obtained with the SF-12 and reported according to the Physical Component Summary score and the Mental Component Summary score.<sup>25</sup> Depressive symptoms were assessed with the validated PHQ-8, and anxiety symptoms were assessed with the validated GAD-7.<sup>3,8</sup>

**Assessing Expectations.** Open-ended responses were reviewed independently by 3 reviewers using standard qualitative techniques to identify major concepts. Concepts were then grouped into representative categories and evaluated according to demographic and clinical characteristics with *t* tests and chi square tests.

**Assembling the Draft Survey.** Categories that were cited by at least 5% of patients or that represented unique and clinically relevant expectations became the items for the draft survey. Items were worded using patients' own phrases and terms and were sequenced according to similar themes. The survey was prefaced with the question "How much improvement do you expect in the following areas as a result of your foot or ankle surgery?" with response options of "back to

normal or complete improvement,” “not back to normal but a lot of improvement,” “a moderate amount of improvement,” “a little improvement,” and “I do not have this expectation, or this expectation does not apply to me.”

### *Phase 2: Test-Retest of the Draft Survey for Reliability*

Using the same recruitment strategy as phase 1, another group of preoperative patients was recruited for phase 2. Patients were given the draft survey twice during in-person or telephone interviews, separated by a minimum of 3 days. Patients received no new treatments during the interval time period. The weighted kappa statistic for ranked data was used to measure agreement for each item between surveys. Weighted kappa measures agreement above that due to chance and ranges from -1 (perfect disagreement) to 0 (agreement no better than chance) to +1 (perfect agreement).

A scoring rubric was developed to generate an overall score (described below) and Cronbach alpha correlation coefficients were calculated for each administration of the survey to establish internal validity. The intraclass correlation coefficient for continuous data was calculated to measure agreement in overall scores for each patient between the first and second administrations of the survey. For kappa values and correlation coefficients, a value less than 0.4 was considered slight to fair agreement, >0.4 to 0.6 moderate agreement, >0.6 to 0.75 good agreement, and >0.75 to 1 excellent agreement.<sup>7</sup> A sample size of at least 50 patients was the target for phase 2.<sup>4</sup>

### *Phase 3: Selecting the Final Items and Scoring*

An item was retained for the final survey if the weighted kappa value was greater than or equal to 0.55.<sup>7</sup> Items were also retained if they had a lower kappa value but were frequently endorsed by patients and/or were considered to represent a significant clinical characteristic by an expert panel of foot and ankle surgeons. A scoring rubric was developed to include both the number of items and the amount of improvement expected, and scores were evaluated according to demographic and clinical characteristics.

## **Results**

### *Phase 1: Identifying Expectations and Developing a Draft Survey*

Ninety-four patients were enrolled and interviewed a mean of  $9 \pm 6$  days before surgery, from January to July 2015. Seventy interviews were conducted in person, whereas the remaining 24 were by telephone. Demographics are listed

in Table 1. Among those working, 26% cited an effect of their foot or ankle condition on their work performance, such as need to work light duty, need to work fewer hours, and inability to be as active as required. Comorbidities for both phase 1 and phase 2 are listed in Table 2. The most frequent diagnoses and clinical characteristics are listed in Table 3. FAOS scores were worst in the recreation/sports and quality of life subscales. Mean scores for the depression and anxiety screening questionnaires reflected a low prevalence of affective symptoms (Table 1).

In response to the open-ended questions, 13 patients volunteered 1 to 3 expectations, 34 volunteered 4 to 6 expectations, 25 volunteered 7 to 9 expectations, and 22 volunteered 10 to 14 expectations. The mean number of expectations per patient was 7 and did not vary by gender. However, women were more likely than men to volunteer expectations that related to footwear (59% vs 26%,  $p = 0.002$ ) and to the appearance of the foot (20% vs 0%,  $p = 0.005$ ). Older patients (ie, age above group mean) volunteered more expectations than younger patients (mean 7 vs 6 expectations,  $P = 0.02$ ).

The most frequently cited expectations pertained to pain relief (cited by 56% of patients), followed by increased variety of footwear (30%) and increased walking comfort (24%). Seventeen percent of patients expressed an expectation to be able to run again. Patients' expectations were grouped into 29 representative categories addressing improvement in pain, walking, movement, daily and work activities, exercise/sports, pain medications, footwear, collateral musculoskeletal effects, and psychological effects. Only 1 expectation category (“improve numbness or tingling”) was included that was not cited by at least 5% of patients.

### *Phase 2: Test-Retest of the Draft Survey for Reliability*

Another group of 63 consecutive patients was enrolled between August and October 2015. Three of these patients could not be reached to complete the survey a second time, and were therefore excluded from data analysis. The first interview (20 in person, 40 by telephone) occurred a mean of  $10 \pm 7$  days before surgery, and the second interview (all 60 by telephone) occurred a mean of  $4 \pm 1$  days after the first interview. Compared to patients in phase 1, patients in phase 2 were slightly older, with fewer diagnoses of ankle instability or osteochondral lesions (Table 1). The 29 items in the draft survey were endorsed by 30% to 98% of patients and weighted kappa values ranged from 0.22 to 0.69.

### *Phase 3: Selecting the Final Items and Scoring*

Of the 29 items, 23 were retained to form the final survey (Table 4). Several items with kappa values less than 0.55

**Table 1.** Demographic and Clinical Characteristics.

	Phase 1 (n=94)	Phase 2 (n=60)	p-Value
Age, years, mean $\pm$ SD (range)	50 $\pm$ 15 (18-80)	55 $\pm$ 15 (20-82)	0.03*
Women	63%	60%	0.73
Marital status			0.93
Married	65%	63%	
Widowed	1%	2%	
Single	34%	35%	
Employment status			0.10
Currently employed	70%	57%	
Not working due to foot/ankle	5%	15%	
On workman's compensation	1%	5%	
Body mass index $\pm$ SD	28 $\pm$ 6	29 $\pm$ 5.8	0.60
PHQ-8 score, mean $\pm$ SD <sup>a</sup>	3 $\pm$ 4	3 $\pm$ 4	0.64
Score $\geq$ 10 <sup>a</sup>	6%	10%	
GAD-7 score, mean $\pm$ SD <sup>b</sup>	4 $\pm$ 4	4 $\pm$ 4	0.57
Score $\geq$ 10 <sup>b</sup>	10%	13%	
SF-12 physical function score, mean $\pm$ SD <sup>c</sup>	40 $\pm$ 12	36 $\pm$ 11	0.07
SF-12 mental function score, mean $\pm$ SD <sup>c</sup>	51 $\pm$ 11	55 $\pm$ 11	0.03*

Abbreviation: SD, standard deviation.

<sup>a</sup>The PHQ-8 (Patient Health Questionnaire-8) is scored 0 to 24, with higher scores indicating more depressive symptoms, 10 is considered the threshold for depression screening.<sup>1</sup>

<sup>b</sup>The GAD-7 (Generalized Anxiety Disorder 7-item scale) is scored 0 to 21, with higher scores indicating more anxiety symptoms, 10 is considered the threshold for screening for generalized anxiety disorder.<sup>2</sup>

<sup>c</sup>SF-12 (Short Form 12 version 2) physical and mental components are each scored 0 to 100, with higher scores indicating better function; 50 is the general population mean.

\* $P < 0.05$ .

**Table 2.** Comorbidities for the Pooled Phase 1 and Phase 2 Patient Populations.

	Number (n = 154)	Percentage
Comorbidity index score $\geq$ 1 <sup>a</sup>	33	17
Obese (BMI $\geq$ 30)	57	37
Current smoker	9	6
Hypertension	39	25
Obstructive sleep apnea	11	7
Diabetes mellitus	8	5
Rheumatoid arthritis	6	4
CAD or PVD	4	3
History of DVT or PE	4	3

Abbreviations: BMI, body mass index; CAD, coronary artery disease; DVT, deep venous thrombosis; PE, pulmonary embolism; PVD, peripheral vascular disease.

<sup>a</sup>There was no significant difference in the incidence of comorbidity index scores  $\geq$  1 between the 2 phases ( $P = .84$ ).

were retained because they represented unique and clinically relevant features. Specifically, "improve pain at rest" was retained because it was frequently endorsed. "Improve balance and stability" was retained because it was particularly relevant to patients undergoing ankle surgery. "Improve ability to drive" was retained because it would be more relevant for nonurban dwellers who were not a

majority in our sample. "Improve confidence in the foot/ankle" and "prevent the foot/ankle from getting worse" were retained because they were frequently endorsed and represent unique psychologic expectations.

Patients considered the terms and phrases used in the draft survey to be unambiguous; thus no modifications were made to terminology. The final Hospital for Special Surgery Foot and Ankle Surgery Expectations Survey therefore was composed of 23 items and had response options for each item reflecting amount of improvement expected (Figure 1). The survey was scored by ranking responses from 4 points for "complete improvement, back to normal" to zero points for "I do not have this expectation or this expectation does not apply to me." An overall score was calculated as the sum of all responses (raw score) divided by the maximum possible score (4 points  $\times$  23 expectations = 92). The overall score was multiplied by 100 so that the possible score range was zero to 100, with a higher score indicating greater expectations (appendix).

When applied to the 2 administrations in phase 2, the mean scores were 65  $\pm$  19 and 66  $\pm$  20. Each set approximated a normal distribution with score ranges of 23 to 100 and 27 to 100, with 4 patients and 3 patients having the maximum score, respectively. Cronbach alpha coefficients were 0.88 and 0.90 and the intraclass correlation

**Table 3.** Clinical Characteristics.

	Phase 1 (n=94)	Phase 2 (n=60)	P Value
Primary diagnosis			.61
Ankle arthritis	11%	15%	
Ankle instability / osteochondral lesion	19%	9%	
Flatfoot deformity	14%	15%	
Hallux valgus	14%	19%	
Hallux rigidus	9%	9%	
Hammertoe or clawtoe	5%	9%	
Other	23%	24%	
Prior foot/ankle surgery	46%	48%	.75
On narcotics for foot pain	5%	10%	.34
Uses a cane or crutches	11%	15%	.47
FAOS scores, mean $\pm$ SD <sup>a</sup>			
Symptoms	61 $\pm$ 24	65 $\pm$ 24	.29
Pain	60 $\pm$ 21	53 $\pm$ 23	.09
Daily function	71 $\pm$ 23	62 $\pm$ 24	.03*
Recreation/sports	46 $\pm$ 30	39 $\pm$ 28	.21
Quality of life	29 $\pm$ 22	29 $\pm$ 24	>.99
Pain scale score, mean $\pm$ SD	5.6 $\pm$ 2.5	5.3 $\pm$ 2.4	.98
0-3	26%	20%	
4-5	16%	30%	
6-8	50%	28%	
9-10	9%	22%	

Abbreviations: FAOS, Foot & Ankle Outcome Score; SD, standard deviation.

<sup>a</sup>Subscales are each scored 0 to 100, with higher scores indicating better function.

\* $P < 0.05$ .

coefficient was 0.78. In preliminary analysis from phase 2, higher scores (ie, greater expectations) were associated with younger age, more pain, and worse FAOS quality of life scores ( $P < .03$  for all comparisons).

## Discussion

In this study, we developed a survey assessing patients' expectations that was valid, reliable, and applicable to diverse diagnoses within foot and ankle surgery. The expectations that were chosen for the survey were phrased in the patients' own words and were included based on the frequency of their citation and in one case, based on clinical relevance; they were also reviewed by a panel of foot and ankle surgeons. These 2 attributes imparted content validity to the survey. It was also reliable on the basis of repeat measurements of each item and the overall score. From the patient's perspective, the survey encompassed a wide range of expectations covering both physical and psychological effects.

Most authors who previously investigated patients' expectations from foot and ankle surgery only included

**Table 4.** Items Chosen for the Final Expectations Survey Are Listed as They Appear on the Survey.<sup>a</sup>

Expectation item	Frequency	Weighted kappa value
Improve pain at rest	83%	0.40
Improve ability to walk longer or farther	95%	0.61
Improve ability to walk on uneven ground (such as banked sidewalks, cobblestones)	95%	0.59
Improve ability to walk fast or run if necessary (such as cross the street quickly)	93%	0.65
Improve gait or decrease limp	80%	0.46
Improve foot/ankle flexibility	75%	0.50
Improve foot/ankle balance and stability	88%	0.45
Improve numbness or tingling	47%	0.53
Decrease swelling	63%	0.67
Improve ability to go up or down stairs	82%	0.61
Improve ability to exercise for fitness	97%	0.48
Improve ability to run for sports or exercise	70%	0.62
Improve ability to fulfill work duties	57%	0.55
Not need pain medications	63%	0.51
Increase variety of shoe options	83%	0.69
Participate more in social/family activities	60%	0.68
Improve ability to perform daily activities or household chores	77%	0.49
Improve ability to commute or drive	38%	0.53
Improve appearance of foot or toes	70%	0.54
Improve confidence in foot/ankle	97%	0.40
Go back to normal again	97%	0.55
Decrease pain elsewhere (such as hips, back) because compensating for foot/ankle	77%	0.67
Prevent foot/ankle from getting worse	98%	0.22

<sup>a</sup>Frequency of citation by patients and weighted kappa value for test-retest reliability are listed for each.

patients undergoing hallux valgus surgery. They found that the most frequently cited expectations related to pain relief, improved walking comfort, and footwear concerns.<sup>23,24</sup> Despite enrolling patients with many more diagnoses, we also found these to be the most frequent expectations. While these expectations might also be cited by surgeons, some of the other expectations included on our survey were more unique and would not necessarily be chosen by surgeons. For instance, an expectation to "return to normal" was expressed by 11 patients in phase 1 (12%). In phase 2, 48%

<b>HOSPITAL FOR SPECIAL SURGERY</b>					
<b>FOOT &amp; ANKLE SURGERY EXPECTATIONS SURVEY</b>					
<b>Please circle the number that best describes your response to each question.</b>					
How much improvement do you expect in the following areas as a result of your foot or ankle surgery?					
	Back to normal or complete improvement	Not back to normal, but...			I do not have this expectation, or this expectation does not apply to me
		a lot of improvement	a moderate amount of improvement	a little improvement	
Improve pain at rest	1	2	3	4	5
Improve ability to walk longer or farther	1	2	3	4	5
Improve ability to walk on uneven ground (such as banked sidewalks, cobblestones)	1	2	3	4	5
Improve ability to walk fast or run if necessary (such as cross the street quickly)	1	2	3	4	5
Improve gait or decrease limp	1	2	3	4	5
Improve foot/ankle flexibility	1	2	3	4	5
Improve foot/ankle balance and stability	1	2	3	4	5
Improve numbness or tingling	1	2	3	4	5
Decrease swelling	1	2	3	4	5
Improve ability to go up and down stairs	1	2	3	4	5
Improve ability to exercise for fitness	1	2	3	4	5
Improve ability to run for sports or exercise	1	2	3	4	5
Improve ability to fulfill work duties	1	2	3	4	5
Not need pain medications	1	2	3	4	5
Increase variety of shoe options	1	2	3	4	5
Participate more in social/family activities	1	2	3	4	5
Improve ability to perform daily activities or household chores	1	2	3	4	5
Improve ability to commute or drive	1	2	3	4	5
Improve appearance of foot or toes	1	2	3	4	5
Improve confidence in foot/ankle	1	2	3	4	5
Go back to normal again	1	2	3	4	5
Decrease pain elsewhere (such as hips, back) because compensating for foot/ankle	1	2	3	4	5
Prevent foot/ankle from getting worse	1	2	3	4	5

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**Figure 1.** The Hospital for Special Surgery Foot and Ankle Surgery Expectations Survey. © 2016 Hospital for Special Surgery. All rights reserved, reprinted with permission.

of patients said they expected “complete improvement” for the expectation of “go back to normal again” on the draft survey, although their surgeons might find that expectation unrealistic for many of the surgeries being performed.

We made an effort to ensure that the items chosen for the draft survey were the expectations most frequently

cited by patients in the open-ended interviews in phase 1. The only item on the draft survey that was not cited by at least 5% of patients in phase 1 was “improve numbness or tingling,” which applied particularly to patients with neuromas. For patients with other diagnoses, such as hallux rigidus, an expectation of improved numbness or tingling

could represent an unrealistic expectation that warrants recognition. Indeed, in phase 2, 12 patients (20%) expected complete improvement for this item. For these reasons, we chose to include this item as a unique and relevant expectation.

Many of the women interviewed in phase 1 (31%) expressed an expectation to wear heels again. While this was felt to be a unique and important expectation that may not be realistic for many women, it could not be added as an expectation on its own because it did not apply to men. If it were added, it would prevent men from getting the highest score on the survey. It was added to the draft survey as “wear formal shoes or heels,” but was ultimately discarded from the final survey because of very high correlation with the other item pertaining to footwear, “increase variety of shoe options.” In order to keep survey administration as simple as possible, we chose not to have separate surveys for each gender.

Most of the items chosen for the final survey had excellent test-retest reliability as measured by the weighted kappa statistic. One item, “prevent foot/ankle from getting worse,” had a kappa value of 0.2, indicating only slight to fair agreement between testings, however, this is likely because only a few patients (2%) did not have this expectation. As it was so frequently cited and felt to be clinically important, this item was retained.

Regarding patients’ diagnoses, the diagnoses of ankle instability and osteochondral lesions were grouped together. We found that many of the patients enrolled with either instability or osteochondral lesions had the other diagnosis as well, thus complicating the designation of a primary diagnosis. Patients undergoing surgery for these 2 diagnoses tend to be similar demographically, and so it was felt to be acceptable to group them together. It is also worth noting that very few patients with a diagnosis of acute trauma were enrolled, because the interval between their first office visit and surgery was usually too short to allow for identification and recruitment. In further testing of the survey, we will potentially be able to delineate differences in expectations between patients with acute trauma and patients with chronic conditions.

There were several limitations to this study. First, it was conducted in a tertiary-care center, where patients’ expectations may not necessarily reflect the expectations of patients in other practice settings. Nearly 50% of patients in this study had a history of previous foot or ankle surgery, a finding that may be reflective of the tertiary care setting. Second, a number of interviews were conducted by telephone, which may have affected patients’ responses. Although less than ideal, we chose to perform telephone interviews in order to ensure recruitment of a broad, representative pool of patients and diagnoses. Third, the survey did not allow weighing or ranking of expectations; this was not attempted so as to keep administration and scoring as simple as possible. Finally, our correlations of expectations

scores with other patient variables were all preliminary. Further analysis with a larger patient population will be required.

The initial work we present here, describing the work of developing the survey and validating it, is a necessary prerequisite step before addressing its performance characteristics in a larger patient sample. Additional work using the survey over the next 2 years will be required to examine fulfillment of expectations postoperatively and the impact on patient satisfaction.<sup>9,14</sup>

In conclusion, with applicability to a wide range of diagnoses, this expectations survey may be used by surgeons to facilitate a discussion of realistic expectations preoperatively. Given that it is patient derived, it contains the expectations that patients care most about, whether or not they are attainable. We believe that this survey will be a useful tool in the current healthcare climate, in which patients’ perspectives are increasingly being emphasized in medical decision-making and assessment of outcomes.

## Appendix

The scoring for the Hospital for Special Surgery Foot & Ankle Surgery Expectations Survey is as follows:

1. Record responses in reverse order so that:  
4 = back to normal or complete improvement  
3 = a lot of improvement  
2 = a moderate amount of improvement  
1 = a little improvement  
0 = I do not have this expectation, or this expectation does not apply to me.
2. Sum all responses. The summed raw score ranges from 0 to 92.
3. Transform the score to range from 0 to 100 using this equation:  
$$\text{Transformed score} = (\text{raw score} / 92) \times 100.$$
4. Report the transformed score. A higher score indicates expecting more improvement for more items.

## Declaration of Conflicting Interests

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