

Measuring Expectations in Orthopaedic Surgery: A Systematic Review

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Abstract

Background Advances in the surgical treatment of musculoskeletal conditions have resulted in an interest in better defining and understanding patients' expectations of these procedures, but the best ways to do this remain a topic of considerable debate.

Questions/purposes (1) What validated instruments for the assessment of patient expectations of orthopaedic surgery have been used in published studies to date? (2) How were these expectation measures developed and validated? (3) What unvalidated instruments for the assessment of patient expectations have been used in published studies to date?

Methods A systematic literature search was performed using the OVID Medline and EMBASE databases, in duplicate, to identify all studies that assessed patient expectations in orthopaedic surgery. Sixty-six studies were ultimately included in the present review.

Results Seven validated expectation instruments were identified, all of which use patient-reported questionnaires. Five were specific to a particular procedure or affected anatomic location, whereas two were broadly applicable. Details of reliability and validity testing were available for all but one of these instruments. Forty additional unvalidated expectation assessment tools were identified. Thirteen were based on existing clinical outcome tools, and the others were study-specific, custom-developed tools. Only one of the unvalidated tools was used in more than one study.

Conclusions Several validated expectation instruments have been developed for use by patients undergoing orthopaedic surgery. However, many tools have been reported without evidence of testing and validation. The wide range of untested instruments used in single studies substantially limits the interpretation and comparison of data concerning patient expectations.

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Introduction

There have been marked improvements in the elective surgical treatment of musculoskeletal conditions over the past half century. Advances in the development of implantable medical devices including hardware and prostheses and improvements in surgical techniques have resulted in predictable structural and clinical results in the treatment of a number of previously debilitating conditions [29, 41]. Procedures such as hip and knee arthroplasty were initially developed with the goal of providing pain relief and some improvement in mobility in profoundly debilitated patients [6, 21]. However, as experience with elective orthopaedic procedures has grown and the populations deemed to be candidates for surgery have expanded [7],

defining successful surgery similarly has evolved, most notably with greater weight attached to patient-reported outcomes and satisfaction [49]. Several authors have reported strong associations between fulfillment of patient expectations of orthopaedic surgery and postoperative satisfaction [4, 8, 47, 58, 60]. This has led to increasing interest among surgeons and researchers in better defining and understanding patients' expectations of orthopaedic procedures with a goal of optimizing patient selection and preoperative education to ultimately influence patient satisfaction.

Patient expectations are a potentially complex and dynamic quality that can be difficult to define, measure, and analyze. For instance, patient expectations may vary depending on when in the course of care they are measured (before surgery, postoperatively, or at full recovery), by different diagnoses (such as malignant versus nonmalignant processes), and by anatomic location or patient age (eg, anterior cruciate ligament surgery in teens or THA in octogenarians). Second, as described by Saban and Penckofer [54] and Kravitz [26], expectations may be defined in at least two dimensions. They can be probabilistic reflecting the perceived likelihood of a particular outcome or event or value-based based on the importance attached to a particular outcome or event. Thus, a vast array of specific expectations may be held by patients, complicating the development of instruments and scores that would allow their quantification and comparison. Further complexity arises from the potential for many personal and contextual factors to influence expectations [26].

The purpose of the present study was to systematically review the published literature to answer the following questions: (1) What validated tools for the assessment of patient expectations of orthopaedic surgery have been used in published studies to date? (2) How were these expectation measures developed and validated? (3) What unvalidated instruments for the assessment of patient expectations have been used in published studies to date?

Materials and Methods

Search Strategy and Criteria

A manual electronic search of the OVID Medline and EMBASE databases, encompassing all included reports until the end of October 2012, was performed by two of the authors (MGZ, AM) to identify studies that assessed patient expectations with respect to orthopaedic surgery. The search was performed in duplicate with any disagreements in eligibility resolved by consensus discussion with all authors. The following search string was used limited to citation titles and abstracts: “(((orthopedic* or

orthopaedic* or ((hip or knee or shoulder or elbow or ankle or spine or spinal or lumbar or cervical or hand or wrist) and (surgeon or surgery or replacement or arthroplasty))) and (expectation or expectations))”. One thousand seven hundred seventy-one records were identified with 1036 remaining after automated deduplication was performed using the OVID search interface.

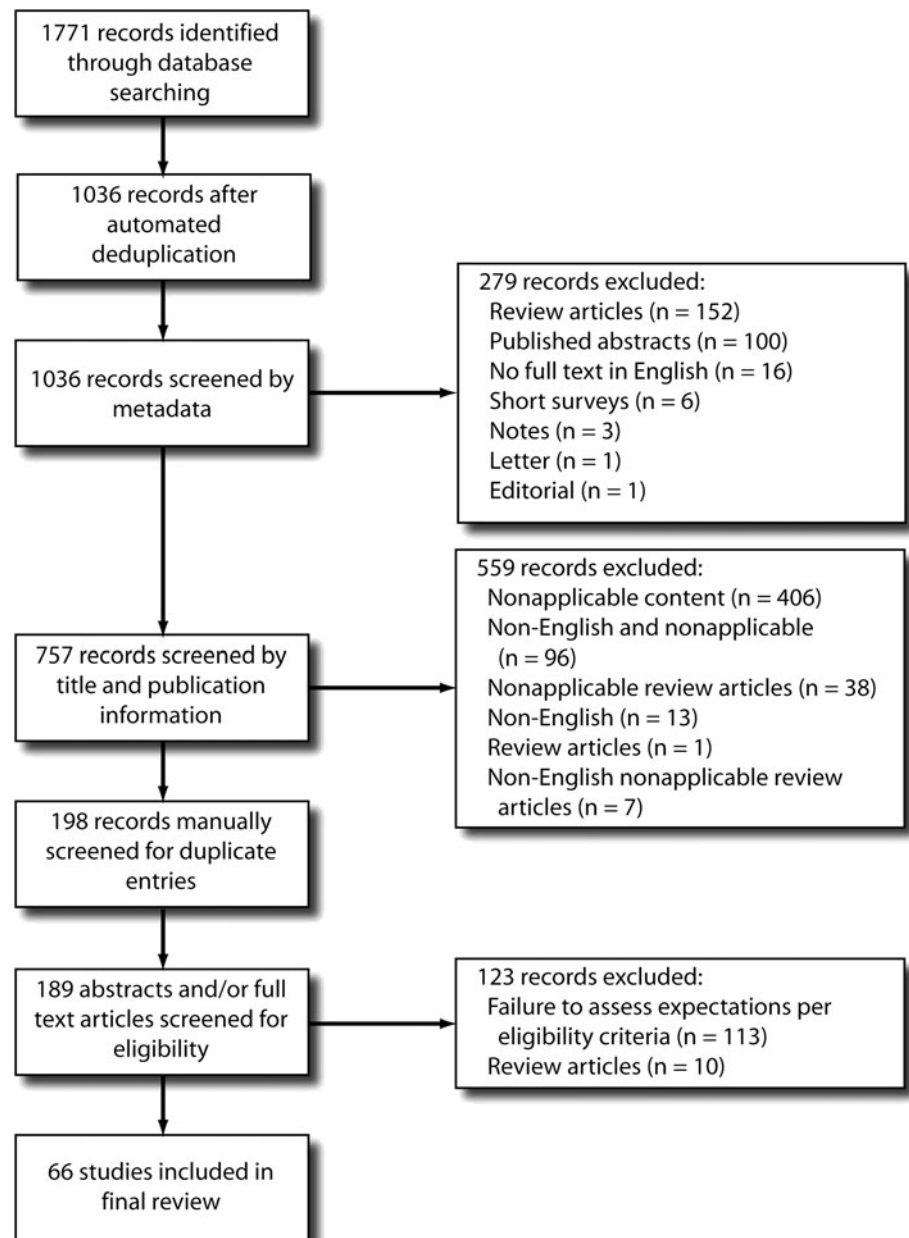
Study Selection

Citation records were extracted to Excel spreadsheet software (Microsoft Corp, Redmond, WA, USA) and sorted by publication-type metadata. No specialized systematic review software packages were used. Publication types not meeting our inclusion criteria were discarded (Fig. 1). Specifically, 100 abstracts, one letter, three notes, 152 review papers, six short surveys, one editorial, and 16 manuscripts with only abstracts published in English were discarded, leaving 757 records. The titles of these records were reviewed to further identify studies not meeting eligibility criteria with a further 559 studies excluded. These studies were excluded for the following reasons: not applicable based on the title alone (for example, did not report on patients with orthopaedic diagnoses = 406 records); non-English manuscripts concerning nonapplicable subject matter (96 records); review articles concerning nonapplicable subject matter (38 records); non-English manuscripts (11 records); review articles (one record); and non-English review articles concerning nonapplicable subject matter (seven records). The remaining 198 records were manually screened for duplicate entries with nine duplicate records identified and removed. All abstracts of the remaining 189 records were read by two reviewers (MGZ, AM). No systematic search of article bibliographies or conference proceedings was performed in an attempt to identify any additional unpublished or otherwise unidentified data. Full-length articles of abstracts that were considered as probably relevant or of unknown relevance were obtained and screened to definitively identify those studies that met our eligibility criteria described previously with 66 reports included in the final review.

Eligibility Criteria

Original studies of human subjects who (1) either underwent or were considered eligible for orthopaedic surgery for musculoskeletal conditions and (2) were assessed at any point during the study period concerning their expectations of any portion of the care cycle were included for review. We limited eligibility to studies that assessed patient expectations using either a probabilistic (ie, likelihood of a

Fig. 1 A systematic search strategy was used to identify the studies included in the present review as summarized in this flow diagram.



given outcome) or value-based (ie, importance attached to a given outcome) definition, which are the most commonly used descriptions in the context of medical care [26, 54]. In contradistinction, any assessment methods that exclusively investigated beliefs (premises held to be true by an individual), needs (outcomes perceived as necessary, irrespective of likelihood), or desires (outcomes or situations wanted by the respondent irrespective of perceived likelihood of attainment) were not included.

Review articles, letters to the editor, published abstracts, and case studies or reports concerning less than 10 patients were excluded. Additionally, only reports with full-text versions published in English were eligible for this review.

Because patient expectations are complex and multidimensional, any studies that assessed only a single patient expectation predetermined by the study authors (for example, expected time off work after surgery) or that limited their query to a single global assessment of whether expectations were met after surgery (for example, did surgery meet your expectations?) were excluded. Furthermore, to limit the review to measures of patient expectations, any studies that queried patients about their expectations through an exclusively qualitative approach, for example open-ended questioning without any subsequent structured categorization of responses, were also excluded.

Data Collection

Data extraction included the following elements: (1) study features, including year of publication and study design; (2) study population features, including number of patients, orthopaedic diagnosis(es), and surgical intervention(s); and (3) details of expectations assessment, including scoring methodology used, assessment time period(s), and information concerning score development and validation either directly from the study text or, if appropriate, from referenced studies describing these details.

Study Designs and Populations

In general, there was an increasing frequency of studies assessing patient expectations over time (Fig. 2). Although the earliest study identified was from 1979, almost two-thirds of identified studies (41 of 66) were published within the last 5 years. A number of different study designs were identified. Forty studies (61%) had a prospective cohort design, assessing patients both pre- and postoperatively at multiple time points. Twenty-two studies had a cross-sectional design, of which 13 (20%) assessed patient expectations preoperatively and seven (11%) assessed patient expectations subsequent to surgical treatment. Finally, six studies (9%) had a retrospective cohort design, assessing patients at multiple time points through retrospective review of prospectively collected data.

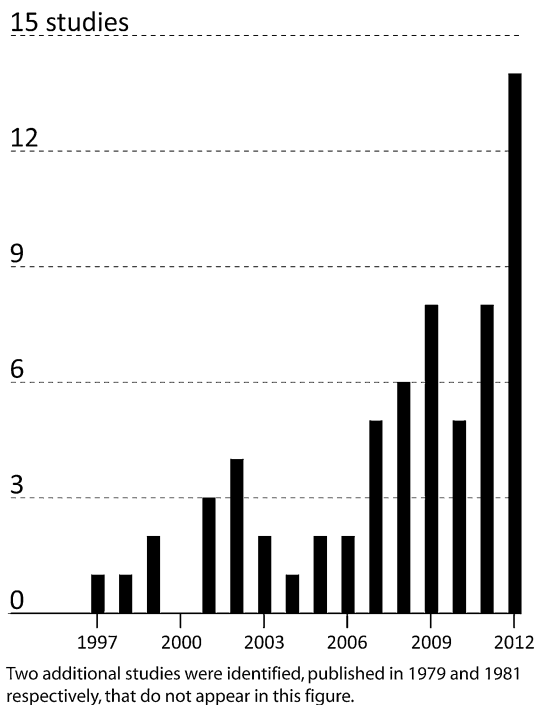


Fig. 2 The number of studies assessing patient expectations in orthopaedic surgery has increased steadily over the past 15 years.

Patient expectations concerning a range of different orthopaedic procedures were identified (Table 1). However, the majority of reports (36 of 66 [55%]) concerned either THA or TKA. An additional 18% of reports (12 of 66) investigated patients who underwent spine surgery, and 12% (eight of 66) reported on patients who underwent shoulder surgery. The remaining 10 studies (15%) reported on a variety of other surgical procedures. Although the large majority of studies were focused on specific procedures or pathologies, seven (11%) combined potentially disparate procedures into a single group (for example, orthopaedic day surgery or foot surgery).

Results

Expectation Measures for Which Development and Validity Data Are Available

Seven measures assessing patient expectations of orthopaedic surgery were identified for which the process of

Table 1. Distribution of studies using expectation instruments by surgical procedure

Orthopaedic diagnosis or procedure	Number of studies	Percent of total
THA	8	12%
Revision THA	2	3%
TKA	11	17%
Revision TKA	1	2%
THA or TKA	14	21%
Anterior cruciate ligament reconstruction or knee arthroscopy	1	2%
Knee arthroscopy	1	2%
Knee surgery	1	2%
Lumbar spine surgery	8	12%
Lumbar discectomy	2	3%
Spine surgery	2	3%
Total shoulder arthroplasty	1	2%
Rotator cuff repair	4	6%
Rotator cuff decompression/repair	2	3%
Shoulder surgery	1	2%
Hallux valgus correction	1	2%
Foot surgery	1	2%
Carpal tunnel release	2	3%
Metacarpophalangeal joint arthroplasty	1	2%
Hand surgery	1	2%
Orthopaedic day surgery	1	2%
Total	66	100%

development was described and validity work undertaken (Table 2). These include the Hospital for Special Surgery (HSS) Expectations Surveys for the following procedures: knee arthroplasty, hip arthroplasty, nonarthroplasty knee surgery, and shoulder surgery [34, 36, 37]; the Expectations Domain of the New Knee Society Scoring System [48, 59]; the Expectations Domain of the Musculoskeletal Outcomes Data Evaluation and Management System (MODEMS) Instruments [62]; and the Sunnybrook Surgery Expectations Survey [50]. Each of the scores is specific to a particular surgical procedure or anatomic location except for the MODEMS scale and Sunnybrook score, which have been reported to not be joint- or procedure-specific [50, 62]. In all cases the tools are administered as a patient-completed questionnaire with between three and 20 items each graded with response items ranging between 3 and 5 points. All of these instruments assess patient expectations for the domains of pain and physical function with the HSS, MODEMS, and Sunnybrook scores additionally querying social factors and the HSS scores further probing psychological elements. Although the HSS scores assess value-based expectations (ie, the importance of various items after surgery and recovery), the remaining scores are probability-based (asking the perceived most likely status in terms of queried domains after surgery and recovery).

How Were the Expectation Measures Developed and Validated?

The four HSS Expectation Surveys were all developed and validated by the same principal investigator using similar methodology and thus will be described in aggregate (Table 2) [34, 36, 37]. These questionnaires were developed using patient interviews and expert review with only items with moderate reliability or greater (Cohen's kappa ≥ 0.40) in the draft survey retained for the final instrument. Content validity was established through the use of patient interviews and expert review to inform item selection, and concurrent criterion validity was confirmed by comparison to a number of previously validated patient-reported measures.

The Sunnybrook Surgery Expectations Score was developed based on a literature review and expert opinions with the intention of not being joint-specific [50]. No further information was identified concerning rationale for the selection of the specific items included in this tool. Test-retest reliability was ascertained on a sample of 25 patients awaiting shoulder surgery with at least moderate correlation for all survey items [50]. The investigator who developed this tool reported construct and concurrent criterion validity for the expectation score when compared with demographic factors and physical and mental component SF-36 scores [50]. The investigator has also

reported use of this tool in patients undergoing rotator cuff repair [51].

The MODEMS expectations scale is a six-item instrument included as a domain in a number of different musculoskeletal assessment instruments and was developed as part of the now defunct MODEMS project spearheaded by the American Academy of Orthopaedic Surgeons [55, 62]. Good internal consistency (Cronbach's alpha = 0.71) and test-retest reliability (Cohen's kappa = 0.91) were demonstrated for an earlier version of this expectations scale included as part of the North American Spine Society Lumbar Spine Outcome Assessment Instrument [9], although the response options were subsequently changed from value to probability-based selections. All MODEMS questionnaires have been reported to be tested and validated [55], although we were not able to identify specific published information on the results of this process for the final version of the expectations scale.

The New Knee Society Scoring System was recently developed in an attempt to provide an updated outcome instrument for patients undergoing knee arthroplasty, encompassing both objective and subjective measures [59]. Separate but related versions of this instrument were developed for use before and after knee arthroplasty with the former including a patient expectations domain. A task force of members of the Knee Society created a draft instrument with the expectations domain modified from a questionnaire previously reported by Mahomed et al. [33]. The survey was refined through two phases of assessment (101 and 497 patients in each phase, respectively) on patients who either underwent primary unilateral TKA or were scheduled to do so. Construct and criterion validity were assessed as part of the development process, and the final version of the expectations domain was found to have good internal validity (Cronbach's alpha = 0.79) [48].

Expectation Measures for Which Development and Validity Data Are Not Available

Several other methods of assessment of patient expectations were reported. These included: existing clinical assessment tools modified to assess expectations, custom tools developed specifically to assess patient expectations, and open-ended verbal or written assessments.

Thirteen different clinical assessment tools modified for the evaluation of expectations were identified (Table 3) [2, 13, 15, 19, 23, 25, 33, 39, 40, 43, 44, 46, 61, 65]. All of the modified instruments were designed for self-administration by patients. Excluding the modified Total Hip Arthroplasty Outcome Evaluation Questionnaire [13, 33, 40, 65], all of the instruments were only used in a single study identified in our review.

Table 2. Validated instruments for the assessment of patient expectations

Assessment tool	Applicable patients	Administration method	Features assessed	Type of expectation	Number of items	Item scoring method	
HSS Knee Surgery Expectations Survey	Nonarthroplasty knee surgery	Self-administered questionnaire	Pain, physical function, social, psychological	Value-based	20	Adjectival items (5 categories)	
HSS Knee Replacement Expectations Survey	Knee arthroplasty	Self-administered questionnaire	Pain, physical function, social, psychological	Value-based	17	Adjectival items (5 categories)	
HSS Shoulder Surgery Expectations Survey	Shoulder surgery	Self-administered questionnaire	Pain, physical function, social, psychological	Value-based	17	Adjectival items (5 categories)	
HSS Hip Replacement Expectations Survey	Hip arthroplasty	Self-administered questionnaire	Pain, physical function, social, psychological	Value-based	18	Adjectival items (5 categories)	
New Knee Society Score - Expectations Domain	Knee arthroplasty	Self-administered questionnaire	Pain, physical function	Probability-based	3	Adjectival items (5 categories)	
MODEMS Questionnaire - Expectations Domain	Range of musculoskeletal conditions	Self-administered questionnaire	Pain, physical function, social	Probability-based	6	Adjectival items (5 categories)	
Sunnybrook Surgery Expectations Score	Orthopaedic surgery	Self-administered questionnaire	Pain, physical function, social	Probability-based	6	Adjectival items (4 or 5 categories)	
Assessment tool	Source of items	Source of instrument contents	Test-retest reliability assessed?	Construct validity assessment	Content validity assessment	Criterion validity assessment	Reference
HSS Knee Surgery Expectations Survey	Patient-derived	Open-ended patient interviews	Yes ($\kappa \geq 0.40$ for all items)	Compared with age, sex, education level, functional status	Use of patient interviews, expert review	Compared with AAOS-LLC, SF-36	[37]
HSS Knee Replacement Expectations Survey	Patient-derived	Open-ended patient interviews	Yes ($\kappa \geq 0.40$ for all items)	Compared with age, sex, education level, functional status	Use of patient interviews, expert review	Compared with AAOS-LLC, SF-36	[37]
HSS Shoulder Surgery Expectations Survey	Patient-derived	Open-ended patient interviews	Yes ($\kappa \geq 0.40$ for all items)	Compared with age, sex, education level, functional status	Use of patient interviews, expert review	Compared with SRQ, SF-36	[34]
HSS Hip Replacement Expectations Survey	Patient-derived	Open-ended patient interviews	Yes ($\kappa \geq 0.40$ for all items)	Compared with age, sex education level, functional status	Use of patient interviews, expert review	Compared with AAOS-LLC, SF-36	[36]
New Knee Society Score - Expectations Domain	Unclear	Expert opinion	Unreported	Tested using exploratory factor analysis	Expert review	Compared with SF-12, KOOS	[48, 59]
MODEMS Questionnaire - Expectations Domain	Unclear	Unreported	Unreported	Details not reported	Details not reported	Details not reported	[62]
Sunnybrook Surgery Expectations Score	Unclear	Literature review + expert opinion	Unreported	Compared with age, sex	Literature review and expert opinion	Compared with SF-36	[50]

HSS = Hospital for Special Surgery; MODEMS = Musculoskeletal Outcomes Data Evaluation and Management System; SRQ = L'Insalata Shoulder Rating Questionnaire; KOOS = Knee Injury and Osteoarthritis Outcome Score.

Table 3. Clinical scores modified for the assessment of patient expectations

Clinical outcome score used	Summary of modifications	Administration method	Type of expectation	Number of items	Item scoring method	Studies reporting its use	Published by investigators independent of those who originally modified the score	References
WOMAC	Question stems modified to query anticipated status 6 months after surgery	Self-administered questionnaire	probability-based	24	Adjectival items (4 categories)	Haddad et al. (2001)	N	[15]
Oxford Knee Score	Question stems modified to query anticipated status 6 months after surgery	Self-administered questionnaire	probability-based	12	Adjectival items (5 categories)	Moran et al. (2003)	N	[43]
Oxford Hip Score	Question stems modified to query anticipated status 6 months after surgery	Self-administered questionnaire	probability-based	12	Adjectival items (5 categories)	Moran et al. (2003)	N	[43]
QuickDASH	Question stems modified to query anticipated status once maximally recovered from surgery	Self-administered questionnaire	probability-based	11	Adjectival items (5 categories)	Hudak et al. (2004)	N	[19]
DASH	Question stems modified to query anticipated status after surgery (specific time period not specified)	Self-administered questionnaire	probability-based	30	Adjectival items (5 categories)	Kadzielski et al. (2008)	N	[25]
NAAS Lumbar Spine Questionnaire	Modification of questionnaire items and response options to query anticipated change in status as a result of surgery	Self-administered questionnaire	Probability-based	8	Skewed Likert items (5 categories)	Mannon et al. (2009)	N	[39]
KOOS	Patients queried concerning anticipated status for each of 5 KOOS domains as well as walking ability and leisure activities	Self-administered questionnaire	Probability-based	7	Adjectival and Likert items (5 to 7 categories)	Nilsdotter et al. (2009)	N	[46]
International Knee Documentation Committee Subjective Knee Form	Items used to inform a new questionnaire querying importance of changes in status as a result of surgery	Self-administered questionnaire	Value-based	15	Adjectival items (5 categories)	Becker et al. (2011)	N	[2]
Historical Leisure Activity Questionnaire	Question stems modified to query anticipated status 12 months after surgery	Self-administered questionnaire	Probability-based	36	Open-ended responses concerning frequency of activity participation	Jones et al. (2012)	N	[23]
Functional Questionnaire of Hannover for Osteoarthritis	Response options changed to query expectations of future status	Self-administered questionnaire	Probability-based	18	3 response options	Suda et al. (2010)	N	[61]
Knee Society Pain Score	Question stem modified to query expected status 6 months after surgery	Self-administered questionnaire	Probability-based	1	7 response options	Muniesa et al. (2010)	N	[44]

Table 3. continued

Clinical outcome score used	Summary of modifications	Administration method	Type of expectation	Number of items	Item scoring method	Studies reporting its use	Published by investigators independent of those who originally modified the score	References
Total Hip Arthroplasty Outcome Evaluation Questionnaire	Two or three questions from 26-item questionnaire extracted, with variable modifications through addition of 0 to 2 questions and change in response options	Self-administered questionnaire	Probability-based	3 or 4	Combined open-ended, adjectival, limited response option, and VAS	Mahomed et al. (2002) Venkataramanan et al. (2006) Gandhi et al. (2009) Mannion et al. (2009)	Y	[13, 33, 40, 65]
Schedule of the Individual Quality of Life-Direct Weights	Modified to query estimated satisfaction 3 months postoperatively for each of 5 domains selected by respondent as most important to their quality of life	Self-administered questionnaire	Value and probability-based	5	10 centimeter VAS	Saban and Penckofer (2007)	N	[54]

NB = no data concerning reliability or validity testing were reported for any of these scores when used in modified form for the assessment of patient expectations; DASH = Disabilities of the Arm, Shoulder and Hand; NASS = North American Spine Society; KOOS = Knee injury and Osteoarthritis Outcome Score; VAS = visual analog scale.

Twenty studies used custom questionnaires developed by the authors to assess patient expectations without any explicit description of the methodology, rationale, or source instrument behind their development [3, 5, 10, 12, 14, 16, 20, 22, 27, 28, 30–32, 45, 52, 53, 57, 64, 66, 68]. These questionnaires consisted of between two and 45 items, most frequently querying expectations regarding factors such as residual pain, degree of mobility, activities of daily living, recreational/social activities, ability to work, and complications. One study asked patients to pick from supplied lists of potential surgical complications and activities that the patient would be able to do postoperatively [28]. All of the questionnaires were self-completed by patients on paper. No two studies were found to use identical questionnaires.

Seven studies used patient interviews or open-ended self-response questions as a definitive assessment tool [1, 11, 18, 35, 38, 42, 67]. In all cases, the responses were subsequently categorized and grouped for analysis.

Discussion

The topic of patient expectations in orthopaedic surgery has recently become a particular focus of interest with the majority of reports on this subject published within the past 5 years. Given these recent additions to the knowledge in the field, the present review was undertaken in an attempt to identify the expectation assessment instruments used to date.

We acknowledge several limitations of the present study. First, despite the use of an accepted inclusive search strategy and careful staged review and assessment of results, it is possible that we have nevertheless failed to identify one or more patient expectation assessment instruments. This could be because the expectations tool has not been described in a peer-reviewed article indexed by the searched databases or was otherwise not captured by our search strategy. Second, although we carefully reviewed the full-text versions of all included studies, including any relevant additional articles referenced within these reports, it is possible that one of the expectations assessment tools was erroneously identified as not being tested or validated. This could be because of a failure of our search strategy to identify published reports of the development and/or testing of one or more of the included instruments. Additionally, given the systematic review methodology used, the findings of the present study can only be based on published material. However, given the large number of citations reviewed and the substantial number of tools identified in the present study, we believe nevertheless that we have identified expectations tools that accurately reflect the breadth of different instruments used to date.

We identified several reliable and validated instruments for the assessment of patient expectations of orthopaedic surgery. Both generic tools applicable to a wide range of musculoskeletal conditions and instruments specific to a particular anatomic location or intervention were documented. One instrument (the MODEMS Expectations Scale) appears to have been largely abandoned because of a failure to attract sufficient surgeons to contribute to a centralized data tracking registry [55]. The experience with the MODEMS initiative provided important lessons in terms of developing simple and user-friendly data collection methods, minimizing participant time burden, including rigorous quality control measures, and planning for financial sustainability, which are now being applied to the American Joint Replacement Registry [56]. However, the use of the HSS Expectation Surveys has recently been reported in several clinical studies from nonoriginating investigators [17, 24, 58, 63], which may potentially allow for comparison of patient expectations and their association with other clinical variables between different populations and studies. Additionally, the recent inclusion of an expectations domain in the New Knee Society Score further promises to expand opportunities for the investigation of this variable in patients undergoing TKA [48, 59]. However, although it has been recognized that patient expectations can be assessed using dimensions of values (states considered to be more or less important) or probabilities (states considered to be more or less likely) [26, 54], all of the validated instruments reported to date are limited to a single one of these two domains.

Unfortunately, the majority of studies identified in the present review used instruments that lacked adequate description of the development methodology or any evidence of testing and validation. Although many of these instruments may actually be effective, discriminative, and user-friendly in assessing patient expectations, the orthopaedic community should strive to confirm and publish the reliability and validity of these instruments. With 47 different expectation tools identified, and only five used by more than one group of investigators, it is virtually impossible to compare data concerning expectations between different studies. Combined, these factors substantially limit surgeons' and researchers' ability to critically appraise and compare the published studies to date. With the relationship between fulfillment of patient expectations and increased satisfaction well documented [4, 8, 47, 58, 60], these factors may ultimately be restricting opportunities for maximizing patient satisfaction after orthopaedic care. For these reasons, leadership from the orthopaedic community is needed to encourage the use of a limited number of high-quality, standardized instruments for the measurement of patient expectations.

The present review revealed that although there are several validated instruments for the assessment of patient

expectations, a large number of primarily unvalidated tools continue to be used with few instruments used in more than one study. The use of valid, common, and comparable instruments is critical to the advancement of the understanding of patient expectations and their relationship to a range of demographic, clinical, and surgical factors. Of the scores reported to date, the HSS Expectations Surveys have been used in the greatest number of studies, although they are limited to the assessment of value-based expectations. Other instruments that measure probability-based expectations have been reported although with limited clinical use. Unless there is a compelling reason to do otherwise, researchers should consider the use of existing validated scores when assessing patient expectations concerning orthopaedic care. Ultimately, a limited number of carefully selected expectation assessment instruments must be defined, promoted, and adopted by orthopaedic surgeons and investigators to maximize their use. Given the known positive relationships between the fulfillment of patient expectations and satisfaction with orthopaedic surgical procedures, the use of high-quality expectation assessment instruments is critical to the optimization of patient care.

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