The use of shoulder scoring systems and outcome measures in the UK

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ABSTRACT

INTRODUCTION In future, outcomes following shoulder surgery may be subject to public survey. Many outcome measures exist but we do not know whether there is a consensus between shoulder surgeons in the UK. The aim of this study was to survey the preferred outcome measures used by National Health Service (NHS) shoulder surgeons operating in the UK.

METHODS A total of 350 shoulder surgeons working in NHS hospitals were asked to complete a short written questionnaire regarding their use of scoring systems and outcome measures. Questionnaires were sent and responses were received by post.

RESULTS Overall, 217 responses were received (62%). Of the respondents, 171 (79%) use an outcome measure in their shoulder practice while 46 (21%) do not. There were 118 surgeons (69%) who use more than one outcome measure. The Oxford shoulder score was most commonly used by 150 surgeons (69%), followed by the Constant score with 106 (49%), the Oxford shoulder instability score with 82 (38%), and the Disabilities of the Arm, Shoulder and Hand score with 54 (25%). The less commonly used outcome measures were the SF-36[®] and SF-12[®] health questionnaires with 19 (9%), the University of California at Los Angeles activity score with 8 (4%), the American Shoulder and Elbow Surgeons shoulder assessment form with 8 (4%) and the EQ-5D[™] with 10 (3%).

CONCLUSIONS Validated outcome measures should be adopted by all practising surgeons in all specialties. This will allow better assessment of treatments in addition to assessment of surgical performance in a transparent way.

KEYWORDS

Shoulder surgery – Scoring systems – Patient reported outcome measures

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Surgeons from all specialties are under increasing pressure from the public, politicians and themselves to assess their performance transparently. Many outcome measures exist to evaluate shoulder function and performance following treatments but we do not know whether there is a consensus between shoulder surgeons in the UK. To date, there is no literature regarding the use of outcome measures by UK shoulder surgeons. The aim of this study was to quantify the use of outcome measures and to identify preferred outcome measures by National Health Service (NHS) shoulder surgeons.

Methods

A systematic search was performed of all acute health trusts in the UK with an elective orthopaedics service. Surgeons specialising in shoulder surgery were identified from advertised hospital services on public websites rather than through membership of the British Elbow and Shoulder Society (BESS) to ensure all shoulder surgeons were surveyed and not just BESS members. Postal questionnaires

(Fig 1) were sent to 350 shoulder surgeons who were currently practising in NHS hospitals. Responses were received via post and all data were analysed using Excel[®] (Microsoft, Redmond, WA, US).

Results

From a total of 350 questionnaires, 217 responses were received (62%). Of the surgeons who responded, 171 (79%) use outcome measures in their shoulder practice and 46 (21%) do not. Of the 171 surgeons who do use outcome measures, 118 (69%) use more than one. The Oxford shoulder score (OSS) was most commonly used by 150 surgeons (69%), followed by the Constant score with 106 (49%), the Oxford shoulder instability score (OSIS) with 82 (38%), and the Disabilities of the Arm, Shoulder and Hand (DASH) score with 54 (25%). The less commonly used outcome measures were the SF-36[®] and SF-12[®] health questionnaires with 19 (9%), the University of California at Los Angeles (UCLA) activity score with 8 (4%), the American Shoulder and Elbow Surgeons (ASES) shoulder assessment

We are looking into the use of scoring systems and outcome measures in patients undergoing shoulder surgery nationally.

Please complete the quick questionnaire below and return in the addressed envelope provided.

Do you use a scoring system/outcome scores in your shoulder practice?

YES / NO

In your shoulder practice do you use any of the following?

• Oxford shoulder score	YES / NO
• Oxford shoulder instability score	YES / NO
• Disabilities of the Arm, Shoulder and Hand score	YES / NO
• University of California at Los Angeles activity score	YES / NO
• Constant score	YES / NO
• American Shoulder and Elbow Surgeons shoulder assessment form	YES / NO
• EQ-5D™	YES / NO
• SF-36® or SF-12®	YES / NO

If you use another scoring system/outcome score please state below:

Thank you for taking part.

Figure 1 Scoring systems and outcome measures following shoulder surgery

Figure 2 Scoring systems used by the 171 respondents who use a scoring system

form with 8 (4%) and the EQ-5D™ with 10 (5%). This breakdown is illustrated in Figure 2.

Discussion

Surgeons are encouraged to follow evidence-based strategies in the pursuit of 'best practice' for their patients. The increasing awareness and expectations of patients, pressure from the government and the media, and the emergence of league tables for surgeons are some of the new challenges faced by surgeons.

Patient reported outcome measures (PROMs) assess the quality of care from the patients' perspective at a single

point in time by self-completed questionnaires in paper or electronic format. PROMs calculate the health gains after surgical treatment using pre and postoperative surveys, and have been used routinely in the NHS since 2009 for four clinical procedures including hip replacements, knee replacements, groin hernia surgery and varicose vein surgery.

There are a number of outcome measurement systems designed to report on the effectiveness of treatment for shoulder pathologies, which need to be valid, reliable and responsive. There are clinician reported or patient reported outcome measures (PROMs), with the latter becoming increasingly popular.

Outcome measures generally fall into two broad categories: general health and disease or joint specific. The majority of researchers believe that studies should include a general health measure and a disease specific measure to allow broad comparison across patient populations.¹

General shoulder scoring systems include the Constant, DASH and ASES with the OSS for surgical intervention. The Constant score has been validated for use in total shoulder arthroplasty,² rotator cuff repair, adhesive capsulitis³ and treatment of proximal humerus fractures. The DASH score has been validated for use in glenohumeral arthritis and rotator cuff tendinitis,⁴ total shoulder arthroplasty,² rotator cuff repair^{5,6} and psoriatic arthritis.⁷ The OSIS is used to establish outcome following treatment for instability¹ although the Constant, DASH, ASES and UCLA scoring systems can also be used.⁸

Quality of life measurements using the SF-36® and EQ-5D™ are becoming more popular. These can be preference-based such as with the EQ-5D™ or non-preference-based scores such as with the SF-36®, which is one of the most popular general health measures in orthopaedics. Most of these measures cannot be used independently in the assessment of cost per quality adjusted life year.⁹

This is the largest survey of shoulder surgeons looking into the use of scoring systems and outcome measures performed in the UK. We found the OSS and the Constant score to be the most commonly used. They are both well established and validated outcome measures.^{2,5,10,11} The OSS is used in data collection by the National Joint Registry (England and Wales) following shoulder replacement¹² and in national trials including the UK rotator cuff trial. The Constant score is the recommended scoring system of the European Society for Surgery of the Shoulder and the Elbow.¹⁵

Of the many outcome measures available to evaluate shoulder function,¹⁴ the relative merits of each continue to be the source of much debate with no clear favourite. In order for useful information to be gained from potential national surveys of shoulder surgery, a consensus must be reached about which outcome measures are best used, potentially through guidance from the British Orthopaedic Association, BESS and the royal colleges.

In 2013 The Royal College of Surgeons of England announced that all consultant surgeons performing procedures subject to national clinical audits in England (such as National Joint Registry data) have been asked to consent

to having their data published in surgeon specific public records.¹⁵ Similarly, outcomes following knee ligament repair may be reported publically with the introduction of the National Ligament Registry.¹⁶ It is perhaps not inconceivable that similar developments may occur in shoulder surgery and indeed in many other surgical specialities in the future. It is likely that such surveys will report on general outcome measures (eg mortality, length of stay and reoperation rates). However, the true value of a surgeon beyond these basic measures is hard to define.

The questionnaire highlights that there are many who use outcome measures but with no clear favourite. However, it did not ascertain whether surgeons use outcome scores routinely for all their patients or only in specific cases (for example, using the OSS as part of National Joint Registry data in shoulder arthroplasty). This would be useful information to ascertain in future studies. The 68% questionnaire response rate and the fact that 21% did not use an outcome score identifies that there is much scope for improvement. Interestingly, many surgeons (18 respondents) who do not use outcome measures commented that there was no support from their NHS trust to incorporate the use of outcome measures for their patients.

Conclusions

We would encourage national adoption of validated outcome measures by all practising surgeons in all specialties. Support from the royal colleges and guidance by subspecialist societies would be invaluable in helping surgeons implement PROMs in their practice. This will allow better assessment of treatments in addition to assessment of surgical performance in a transparent way. The overall effects on clinical governance are likely to result in a better outcome for patients.

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