



Measurement of appraisal is a valuable adjunct to the current spine outcome tools: a clinician's perspective on the Rapkin and Schwartz commentary

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I have read with interest the commentary by Bruce Rapkin and Carolyn Schwartz, “Advancing quality-of-life research by deepening our understanding of response shift: A unifying theory of appraisal” [1]. These authors have identified the teleological assumption that there can be no quality-of-life (QOL) measurement and no patient-reported outcomes without some sort of cognitive appraisal going on. The QOL Appraisal Model by Rapkin and Schwartz [2] has built on the original foundational model of Sprangers and Schwartz [3] and enables the researcher to account for a mechanism of response shift at the individual level. The hard work now begins and putting a box around this abstraction with scientific rigor is the achievement I feel this commentary has outlined. I will speak to this from my area of clinical practice as a spine surgeon.

Patient-reported outcome measures (PROMS) used in the realm of spinal surgery are necessary for clinicians and policymakers to compare the effectiveness of different treatments. PROMs are also critical for patients and clinicians to assess a patient's response to treatment. Patient expectations can affect the perceived outcome to treatment. Patient-surgeon dialogue prior to surgery is critical to ensure there is a clear understanding of the expectations from surgery and that the expectations match between the patient and surgeon.

In spinal surgery, the clinical interaction can detail an outcome that is contradictory to the specific review of the PROMs. In face to face dialogue and clinical evaluation of the objective findings, it is not uncommon for the patient to

provide a positive response to surgery. Overall, the interaction is based on non-specific generalized comments on how the patient is doing. It is common for some aspects of recovery to be better than others. The surgeon will put this into context of the objective evaluation. This mix in the milieu of outcome perceptions is abstract in the clinical interview but is forced to be concretized when the patient is faced with putting pen to pencil and answering specific questions that are contained in the PROMs. It is this distinction in my mind where changes in appraisal are critical to understanding when the PROM may not reflect the personal interaction. If a patient is asked to rate a scale or prioritize what is important at different times in the recovery, the basis of their ratings will change. Unless these changes are captured by a measure of their appraisal processes, the use of PROMs in themselves will display a potential bias and measurement error. It is this experience where I have found in about 25% of spinal surgery patients [4], there is a contradiction between the clinical interview and how the patient has scored their PROMs.

The legacy measures used for spinal surgery outcomes are dependent on invariance on the way a patient uses a PROM. Response shifts create variance in the way a patient uses a PROM. The QOL Appraisal Model by Rapkin and Schwartz has created a theoretical framework to account for this measurement error or bias [2]. A combination of PROMs is often used in spinal surgery to capture the different domains that impact QOL. To account for the measurement error that may occur from a response shift, a measure of changes in one's appraisal would be useful as part of the assessment measures used. When observed and expected outcomes do not match, it is then that a deeper look into a patient's method of appraisal may be useful to help understand this.

The difficulty measuring response shift itself is the lack of a reliable and valid patient specific method. The then-test method was a simple method using simple statistics, but

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this technique accounted for a small percentage of the variance in recalibration response shift [5]. It was cumbersome and patient compliance was low. Group effects for response shift can be measured using large samples and advanced statistical methods. These may capture more of the variance in the types of response shift, but are not a useful tool in the clinic setting for an individual patient. A clinically practical approach that a spinal surgeon can utilize for the understanding of an individual patient will be the holy grail in the measurement of response shift. Techniques that are brief, valid and can provide a measure of one's change in appraisal will be of significant benefit. A surgeon will be able to take a second look at a patient and be able to observe the relative changes longitudinally in how he/she applied or changed their cognitive appraisal. Mixed-methods tools such as the QOL Appraisal Profile (QOLAP), with both qualitative and quantitative assessment, or the close-ended but longer QOLAPv2, can be used for understanding the one particular patient. The Brief Appraisal Inventory may be a better solution as it is short and has no qualitative component and may have better surgeon acceptance. For research purposes, group effects can also be studied, providing insight into factors that create different trajectories of outcome.

A further consideration into why incorporating appraisal in PROMs for spinal surgery is important is the concept of a minimal important difference (MID). This is the basis of what constitutes a clinically meaningful change in spinal surgery. If a patient's appraisal of QOL changes, then MID will likewise change. Surgeons need to have a true reflection of the effect of surgery. MID is a measure of the success of surgery from the patient's perspective. MID can be different between patients and also within patients at different times over the course of a longitudinal study [6].

It is my opinion that assessing cognitive processes of appraisal will help clarify why some patients consider their outcomes less positively than their surgeons. Measurement of appraisal is a valuable adjunct to the current spine outcome tools.

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Compliance with ethical standards

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Research involving human participants and/or animals Not applicable to the present commentary, although all of the author's studies have been reviewed and approved by the institution's ethics board and were done in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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