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Invited Commentary: Rasch Analysis and High-Value Spinal Endoscopy

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In the current issue of the *International Journal of Spine Surgery*, we have a series of articles promoting the use of Rasch analysis[1] as a new evidence mechanism that would support the advancement of endoscopic spinal surgery as a high-value technology. Most spine surgeons, including myself, are not familiar with this type of analysis. Let's examine briefly what the Rasch analytic approach was designed to do. It was first described 60 to 70 years ago by Georg Rasch as an analytic approach that factors the technical difficulty of a procedure or question with the experience and/or skill level of an individual. In theory, this type of analysis can help us in spinal surgery by factoring in the technical skill of a surgeon when examining the outcomes of procedures. One of the limitations of most surgical clinical trials is that the outcomes that result from surgery do not account for the skills of the people doing the procedure. The Rasch analysis sounds appealing because it has the potential to fill a gap in the way that we generate surgical evidence.

In this series of articles, Rasch analysis was used in a different way. It was used to analyze the results of a survey of surgeon learners before and after watching educational industry-sponsored webinars on the value of endoscopic spinal surgery procedures. The conclusion reached by the authors in all 4 articles was that when surgeons watch an educational webinar on spinal endoscopy, they reported greater professional appreciation for the given spinal endoscopic procedure, such as endoscopic spinal fusion and endoscopic decompression. The articles also highlight the perspective that surgeon learners felt that cadaver courses were helpful to learn new techniques and that advanced endoscopic procedures might be able to augment spinal practice. I reviewed all of these articles, and in them, the Rasch analytic is simply being used as a statistical tool to state the obvious. If you show a group of surgeon learners a webinar on a topic they are interested in, they are more likely to be interested in the topic after the webinar. I am not sure that fancy statistics are needed for this type of descriptive analysis.

There are more concerning aspects to the analysis in these articles. In the first article, "Insights From the ISASS Webinar Series on Current and Emerging Techniques in Endoscopic Spine Surgery, Part 1: A Polytomous Rasch Analysis of Surgeon Endorsement of Endoscopic Discectomy/Foraminotomy, Interbody Fusion, and Importance of Patient Feedback During Surgery," the authors claim that their survey had a completion rate of 77.8%. In actuality, there were 1311 potential respondents, and only 42 completed surveys. That is a 3% response rate, which would be considered invalid by many researchers. The other articles also claim high completion rates, but the actual numbers suggest a response rate in the single digits or low to middle teens in all cases.

Assessing outcomes from spinal surgery is complicated. Both patients and surgeons "know" that experience with procedures is associated with better outcomes, and in fact, many studies demonstrate the positive effect of surgical volume on patient outcomes. We should be willing to embrace new approaches when assessing evidence in spinal surgery. This does not mean using a statistical tool to claim that surgeons who watch a webinar on a newer surgical technique are more likely to have improved outcomes because 3% to 16% of people surveyed feel more comfortable with the technique being presented.

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