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# Letter to the Editor: Articles and Accompanying Editorials on Rasch Analysis of High-Value Endoscopic Surgeries—A Message From the ISASS Co-President

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**To the Editor:** I am writing to express my support for the editorial "Embracing Rasch Analysis for Enhanced Spine Surgery Outcomes—The Outsider's Viewpoint" by Dr Igor Elman that accompanies the 5 Rasch analysis articles in this special issue of the *International Journal of Spine Surgery*. As a spine surgeon deeply invested in advancing our understanding and improving clinical outcomes, I find the insights provided by the editorial and accompanying studies both timely and crucial.

The editorial eloquently addresses the inherent limitations of traditional clinical trials in spine surgery, particularly the challenges of randomization, crossover issues, and the difficulty of blinding in surgical trials. These obstacles often lead to the dismissal of innovative therapies that could otherwise significantly benefit our patients. The discussion of the "glass ceiling" effect in outcome research highlights a critical issue: the inability of current trial methodologies to fully account for the impact of surgeon skill and experience on clinical outcomes.

The introduction of Rasch analysis into the evaluation of surgical procedures presents a promising solution to these challenges. By providing a more nuanced and detailed assessment of the relationship between surgeon experience and clinical outcomes, Rasch analysis allows for a deeper understanding of how surgical skills influence patient results. This approach not only offers a pathway to generating high-grade clinical evidence from observational studies but also ensures that innovations in surgical techniques are validated and adopted based on robust, real-world data.

The editorial's emphasis on the importance of integrating surgeon experience and patient values into evidence-based medicine resonates deeply with my own clinical practice. The traditional reliance on randomized controlled trials (RCTs) as the gold standard for evidence has often overlooked the critical insights gained from hands-on surgical experience and patient feedback. The letter to the editor "Positioning Rasch Analysis in Modern Clinical Evidence Grading," written by Dr David A. Baron, further highlights the problems with traditional clinical evidence grading. The Rasch methodology, by incorporating these elements, provides a more holistic and practical approach to advancing spine surgery.

The findings from the ISASS webinars, as discussed in the editorial, underscore the value of surgeon-led assessments in identifying high-value procedures. Notably, the endorsement of endoscopic fusion exceeded all other queries performed within this psychometric webinar series. Techniques such as endoscopic decompression and full-endoscopic interbody fusion are prime examples of how surgeon experience can drive the evolution of effective surgical practices. The global analysis of 3639 surgeons using the polytomous Rasch model demonstrates the power of this approach in refining our understanding of what constitutes successful and valuable surgical interventions. The endorsement of transforaminal full-endoscopic interbody fusion for hard disc herniation was an unanticipated outcome, yet it offers significant opportunities for patients, surgeons, and industry.

Moreover, this approach can address the rationing of care, equity, and diversity both in the United States and globally. By leveraging real-world data and surgeon experience, we can ensure that high-quality care is accessible to a broader population, promoting equitable treatment opportunities. The ability to rapidly validate and implement effective surgical techniques can help bridge gaps in health care delivery, especially in underserved regions, thereby supporting a more diverse and inclusive approach to spine care.

The Rasch analysis could be considered the equivalent to a retrospective multisite observational cohort study, especially when combined with pooling case numbers from each participating surgeon. However, a

more practical approach is to integrate Rasch analysis into the traditional pyramid of clinical evidence to achieve a more holistic understanding of clinical outcomes. This method acknowledges that outcomes are not solely dependent on the procedure but are significantly influenced by the skill and experience of the surgeon performing it. This integration helps bridge the gap between evidence-based medicine and real-world clinical practice, ultimately leading to more personalized and effective patient care. When applied to surgeon experience, skill, and clinical outcomes, Rasch analysis provides a quantitative approach to evaluating these factors, fitting into the traditional pyramid of clinical evidence in several complementary ways:

1. Enhancing RCTs and observational studies: Rasch analysis can enhance RCTs and observational studies by providing a rigorous method to quantify and compare surgeon experience and skill levels. This adds a layer of depth to the evidence, helping to explain variations in clinical outcomes that traditional methods might overlook.
2. Complementing systematic reviews and meta-analyses: By incorporating Rasch analysis data, systematic reviews and meta-analyses can account for the impact of surgeon skill and experience. This ensures that conclusions drawn from these reviews consider the variability in surgeon performance, leading to more comprehensive and accurate recommendations.
3. Improving cohort and case-control studies: In cohort and case-control studies, Rasch analysis can be used to stratify surgeons based on their experience and skill levels. This allows for more precise comparisons and helps identify which factors most significantly impact clinical outcomes.
4. Providing a quantitative basis for expert opinion: Rasch analysis offers a quantitative framework that can underpin expert opinions and editorials. This strengthens the credibility of expert insights by grounding them in statistically validated measures of surgeon performance and how it relates to patients' outcomes.

Therefore, Rasch analysis fits into the traditional pyramid of clinical evidence by adding a sophisticated, quantitative psychometric dimension to the assessment of surgeon experience and skill, thereby enriching the overall quality and applicability of clinical evidence.

The editorial and the accompanying Rasch analysis articles of this *International Journal of Spine Surgery* special issue, "Perspectives on High-Value Endoscopic Spine Surgeries," represent a significant step forward in our efforts to enhance the quality of spine surgery. By acknowledging and addressing the limitations of traditional clinical trials and by embracing innovative methodologies like Rasch analysis, we can better align our surgical practices with the realities of clinical experience and patient needs. I commend the authors for their insightful contributions and look forward to seeing the continued impact of this work on our field of spinal surgery.

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