

Editors' Introduction: High-Value Endoscopic Techniques: Integrating Surgeon Skill and Experience in Spine Surgery With Rasch Analysis

Kai-Uwe Lewandrowski and Morgan P. Lorio

Int J Spine Surg published online 4 November 2024
<https://www.ijssurgery.com/content/early/2024/10/28/8670>


This information is current as of December 4, 2024.

Email Alerts Receive free email-alerts when new articles cite this article. Sign up at:
<http://ijssurgery.com/alerts>

Editors' Introduction: High-Value Endoscopic Techniques: Integrating Surgeon Skill and Experience in Spine Surgery With Rasch Analysis

KAI-UWE LEWANDROWSKI, MD^{1,2,3,4} AND MORGAN P. LORIO, MD^{5,6}

¹Division of Personalized Pain Research and Education, Center for Advanced Spine Care of Southern Arizona, Tucson, AZ, USA; ²Department of Orthopedics, Fundación Universitaria Sanitas, Bogotá, Colombia; ³Dr. Honoris Causa Department of Orthopedics at Hospital Universitário Gaffree Guinle Universidade Federal do Estado do Rio de Janeiro, Rio de Janeiro, Brazil; ⁴Department of Orthopaedic Surgery, Tucson, Arizona, University of Arizona, Banner Medical Center, Tucson, AZ, USA; ⁵President ISASS, Orlando, FL, USA; ⁶Orlando College of Osteopathic Medicine, Orlando, FL, USA

 K-UL, 0000-0001-7842-2914

This special issue of the *International Journal of Spine Surgery* focuses on identifying high-value endoscopic spine surgery techniques. Along with our colleagues, we undertook an extensive review, drawing insights gathered from 4 webinars, which were hosted by the International Society for the Advancement of Spine Surgery (ISASS), that engaged 3,639 spine surgeons. These efforts culminated in recommendations for best clinical practices in endoscopic spine surgery.

By analyzing data from 781 completed survey responses worldwide using the polytomous Rasch model, this research offers a robust statistical evaluation of surgical techniques, underscoring the critical role of surgeon experience and expertise in achieving optimal clinical outcomes. This analysis provides health care systems with the tools to establish benchmarks for surgical proficiency, customize training programs to address skill gaps, allocate resources efficiently, and enhance spine care delivery. The societal impact is substantial, offering a foundation for informed policy development and the promotion of efficient health care solutions.

Rasch analysis captures surgeon experience and expertise in a manner that randomized controlled trials (RCTs) cannot by recognizing the depth of practice that extends beyond mere data points and controlled environments. While RCTs are designed to quantify outcomes through rigid protocols, Rasch analysis allows for the integration of surgeon intuition, pattern recognition, and the nuanced decision-making that develops over years of hands-on experience. This approach acknowledges that expertise is not defined solely by standardized metrics but also by the subtle judgments that experienced surgeons instinctively apply. Whereas RCTs may oversimplify the complexities inherent in surgical practice, Rasch analysis accommodates

the broad spectrum of expertise, providing a more comprehensive representation of the real-world application of skill and knowledge.

A key finding of particular relevance to both surgeons and device manufacturers is the increasing interest among spine surgeons in applying endoscopic techniques to more complex clinical cases. This is especially evident in the strong support for endoscopic fusion procedures, signaling a potential shift toward the broader adoption of endoscopic lumbar spinal surgery. The possibility of endoscopic fusion implants replacing those used in traditional open procedures is emerging as a notable trend. However, the successful implementation of this transition will depend on the development of sustainable economic models that support the integration and long-term viability of endoscopic spine surgery. While this type of experiential research has inherent limitations and does not substitute for clinical trials, it offers valuable insights by quickly identifying evolving trends in patient care.

The 26 key opinion leader spine surgeons who served as authors on 1 or more of the studies included in this *IJSS* special issue extend their gratitude to ISASS for their logistical support of this international webinar series and to Dr Charles Branch, *IJSS* Editor-in-Chief, for facilitating the publication of this timely information.

Funding: ISASS received funding from Lange Med-Tech for the webinars and the publication of this special issue. Funding was paid directly to the organization. No formal funding by private, government, or commercial funders was received by the author. The authors volunteered their time and internal resources to support the design and conduction of this study.

Declaration of Conflicting Interests: The author reports no conflicts of interest in this work.

Corresponding Author: Kai-Uwe Lewandrowski, Division Personalized Pain Research and Education, Center for Advanced Spine Care of Southern Arizona, 4787 E Camp Lowell Dr, Tucson, AZ 85712, USA; business@tucsonspine.com

This manuscript is generously published free of charge by ISASS, the International Society for the Advancement of Spine Surgery. Copyright © 2024 ISASS. To see more or order reprints or permissions, see <http://ijssurgery.com>.