

# The Development of a Novel Grading Scale to Evaluate the Quality of Operative Videos

Mustafa Motiwala, MD, David Laird, BS, John Dugan, BS, Delaney Graham, BS, Prateek Konakalla, BS, Aruha Khan, BS, Jason Sims, BS, Ahmed Motiwala, MPH, Eva Wu, MD, Ali Alawieh, MD, PhD, Kaan Yagmurlu, MD, Emal Lesha, MD, Nickalus Khan, MD

Department of Neurosurgery, University of Tennessee Health Science Center, Memphis, TN

## Background and Objectives

Variability in the quality of operative videos presents a challenge. Several surgical subspecialties have developed scoring systems to address this issue and measure the quality of operative videos in their respective disciplines. The purpose of this project was to evaluate the quality of skull base operative videos in the neurosurgical literature and introduce a novel, neurosurgery-specific grading system—the Neurosurgery-Video Quality Scale (N-VQS)—that better discriminates educational value.

## Methods

A cross-sectional analysis of 394 skull base operative videos published across four neurosurgical journals was performed. Videos were scored using established instruments (LAP-VEGAS, modified DISCERN, GQS, JAMA Benchmark Criteria) and the newly developed 14-item, 28-point N-VQS.

## Results

394 results were included for analysis. Most videos demonstrated high baseline quality across existing grading systems, but these tools showed limited discriminatory power. The N-VQS demonstrated significant correlation with citation frequency ( $p = 0.049$ ), unlike other scales. Operative Neurosurgery had the highest mean N-VQS scores, while World Neurosurgery publications accrued the highest citation counts.

Table 1. Neurosurgical-Video Quality Scale

Number of Points*	Criteria
0-2	Pathology and procedure in title?
0-2	Included patient presentation/history, exam, imaging, surgery indication, comorbidities, maintained anonymity?
0-2	Indications/alternatives for surgery discussed?
0-2	Risks/complications of surgery included?
0-2	Surgery set up including position and side of surgery?
0-2	Surgery steps listed?
0-2	Intraoperative findings demonstrated?
0-2	Diagrams and other visual aids included?
0-2	Clinical outcomes discussed?
0-2	Radiographic outcome/pathology (when appropriate) discussed?
0-2	English commentary/writing is clear?
0-2	Appropriate image quality and speed?
0-2	Relevant literature review of topic?
0-2	References cited appropriately?

Total Score (0-28)

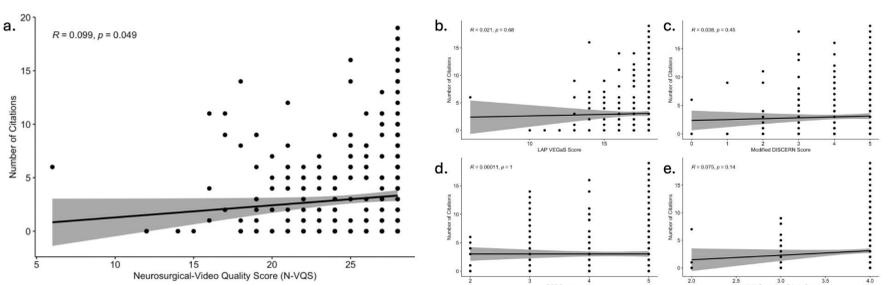
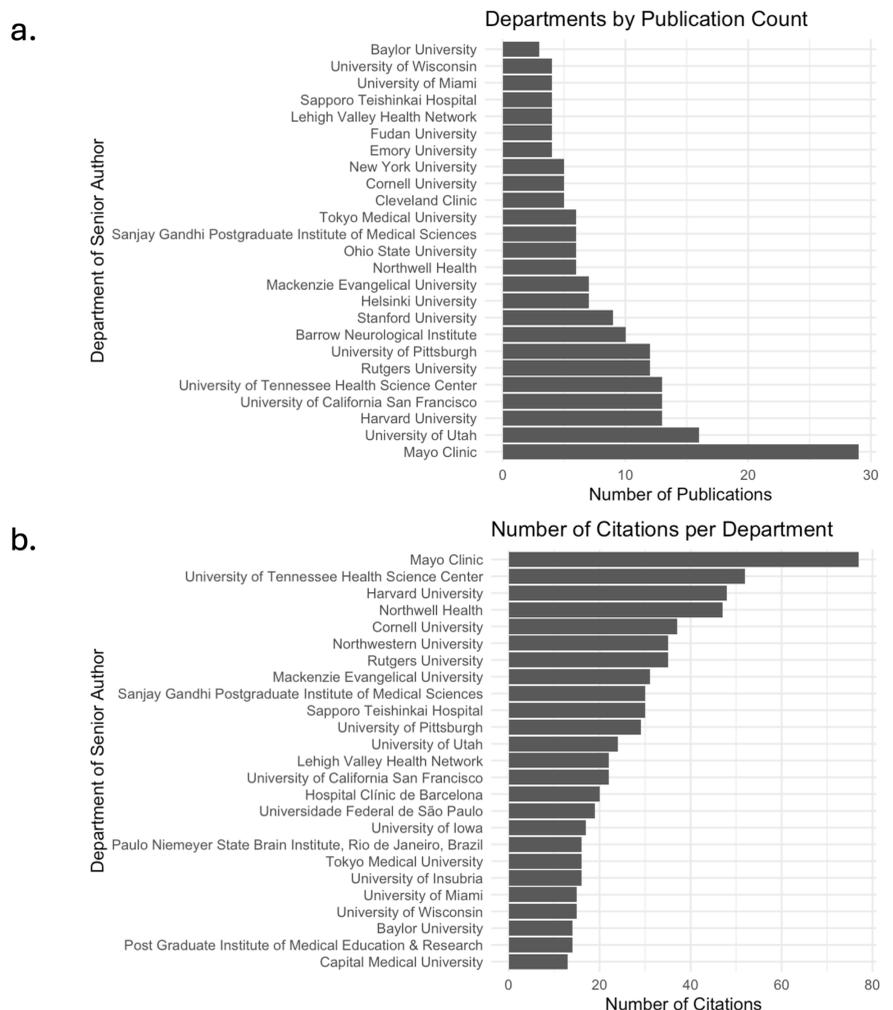
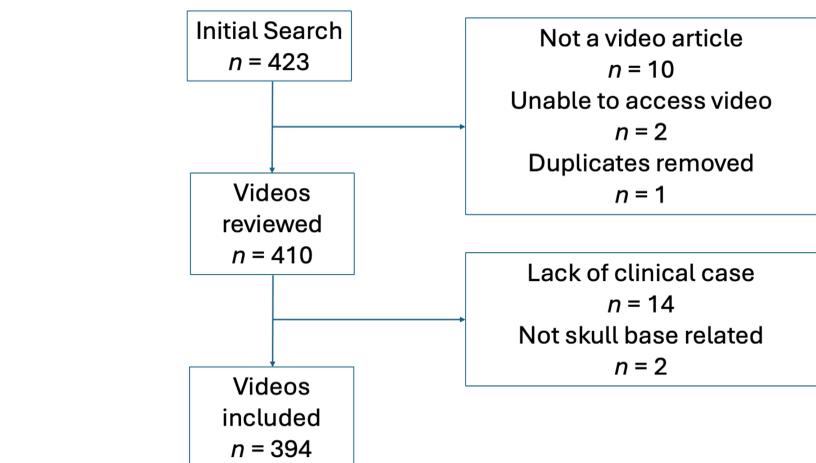
\*0=Not Presented, 1=Partially Presented, 2= Completely Presented

Table 2. Neurosurgical-Video Quality Scale (N-VQS) Category Outcomes

Average Number of Points (range)	Criteria
1.96 (0-2)	Pathology and procedure in title?
1.81 (0-2)	Included patient presentation/history, exam, imaging, surgery indication, comorbidities, maintained anonymity?
1.69 (0-2)	Indications/alternatives for surgery discussed?
1.44 (0-2)	Risks/complications of surgery included?
1.81 (0-2)	Surgery set up including position and side of surgery?
1.80 (0-2)	Surgery steps listed?
1.95 (0-2)	Intraoperative findings demonstrated?
1.88 (0-2)	Diagrams and other visual aids included?
1.85 (0-2)	Clinical outcomes discussed?
1.92 (0-2)	Radiographic outcome/pathology (when appropriate) discussed?
1.95 (0-2)	English commentary/writing is clear?
1.98 (1-2)	Appropriate image quality and speed?
1.44 (0-2)	Relevant literature review of topic?
1.65 (0-2)	References cited appropriately?

## Contact

Mustafa Motiwala, MD  
mustafamot@gmail.com



## Conclusions

Skull base operative videos are generally high quality, but meaningful variability exists in educational components—particularly discussion of complications and supporting literature. The N-VQS offers a neurosurgery-specific, integrative framework that better correlates with academic impact and may improve standardization of operative video assessment.

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