Assessment Tools for Evaluating Competency in Video-Assisted Thoracoscopic Lobectomy: A Systematic Review

Anitha Kammili, MD MSc[1,2], Elif Bilgic, PhD[3], Andrea Quaiattini, MA MLIS[4], Meagane Maurice-Ventouris, BSc[3], Sara Najmeh, MD MSc[1], Carmen L. Mueller MD MEd[1,3]

[1]Division of Thoracic and Upper Gastrointestinal Surgery, Department of Surgery, McGill University Health Centre
[2]Department of Academic Family Medicine, Prairie North Health Region, University of Saskatchewan
[3]Division of General Surgery, Department of Surgery, McGill University Health Centre
[4]Institute of Health Sciences Education, McGill University

Background

- Advent and widespread adoption of competency-based education increased the need for objective and valid assessment tools of operative skill
- Commonly-used assessment tools in surgery are generic (e.g., OSATS), limiting their ability to assess and provide feedback for proficiency in specialized procedures
- Video-assisted thoracoscopic lobectomy (VATS-L) is a complex procedure requiring knowledge and skills not captured by generic proficiency assessment tools

Goal: To identify and evaluate assessment tools of surgical proficiency in minimally invasive pulmonary lobectomy

Methods

- Two independent reviewers
- Five databases
- Included articles with VATS-L assessment tools
- Managed with EndNote

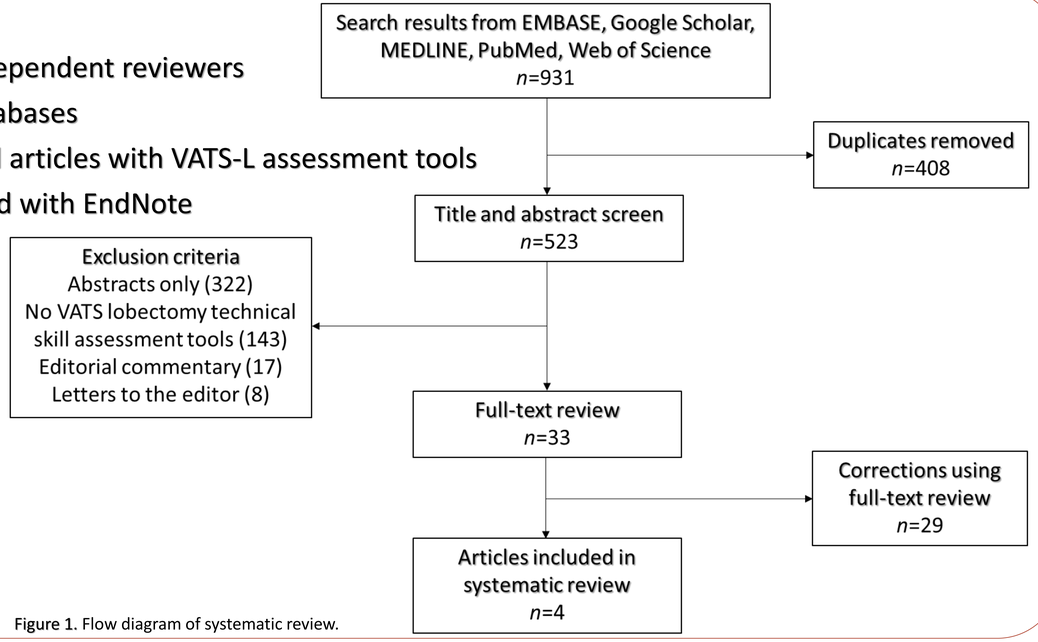
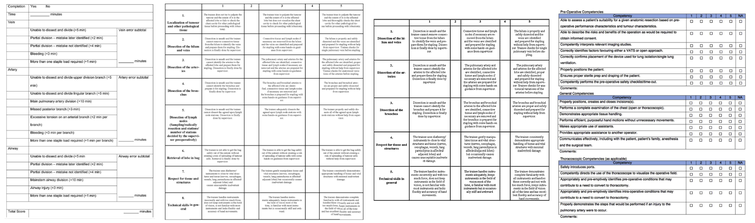


Figure 1. Flow diagram of systematic review.

Results

- 4 procedure-specific assessment tools for VATS lobectomy



	Standardized Assessment Tool (2012)	Final VATSAT (2018)	Modified VATSAT (2019)	TCAT-ARC (2020)
Content	0 0	3 2	2 2	3 2
Response process	0 0	0 0	2 2	1 1
Internal structure	0 0	0 0	3 3	3 3
Relation to other variables	1 1	0 0	2 2	1 1
Consequences	0 0	0 0	2 0	0 0
Total validity score	1 1	3 2	11 9	8 7
Percentage	7% 7%	20% 13%	73% 60%	53% 47%
Ranking	4 4	3 3	1 1	2 2

Table 1. Evaluation of assessment tools using the Unitary Framework of Validity.
VATSAT, Video-Assisted Thoracoscopic Surgery Assessment Tool; TCAT-ARC, Thoracic Competency Assessment Tool-Anatomic Resection for Lung Cancer.

Conclusion

- Four procedure-specific assessment tools identified for VATS lobectomy
- Only one has validity evidence in the clinical environment
- None report a reliable competence threshold score
- Further study needed to refine proficiency assessment tools for VATS lobectomy

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