

Comparing Virtual Reality and Traditional Teaching Methods for SMNB Training in Medical Students: A Randomized Controlled Study

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INTRODUCTION

VR in Medical Education:

- By providing immersive, interactive simulations. VR improves knowledge retention and procedural accuracy (1,2).
- VR is underutilized for precise anatomical knowledge training (3,4).

The **suprazygomatic maxillary nerve block (SMNB)** is a new regional anesthesia technique that reduces post-op pain and opioid use in pediatric adenotonsillectomy (5).

Compares VR-based and station-based training for SMNB

- **Hypothesis:** VR enhances knowledge retention, procedural understanding, and learner confidence.

METHODS



1 A: Traditional Method
Anatomical model and reference text

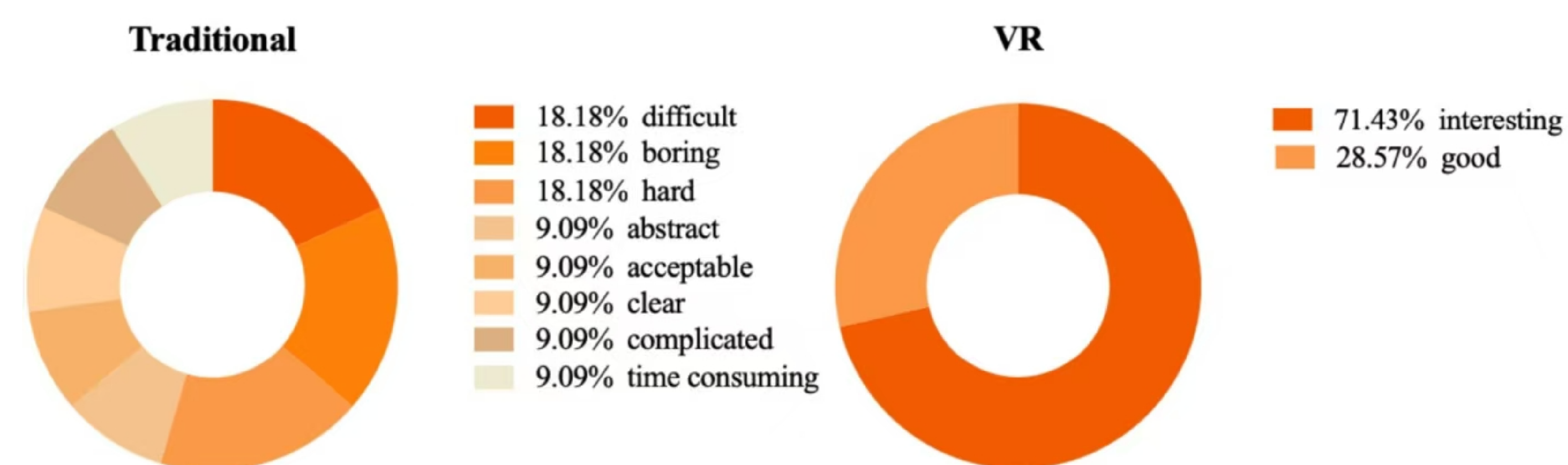
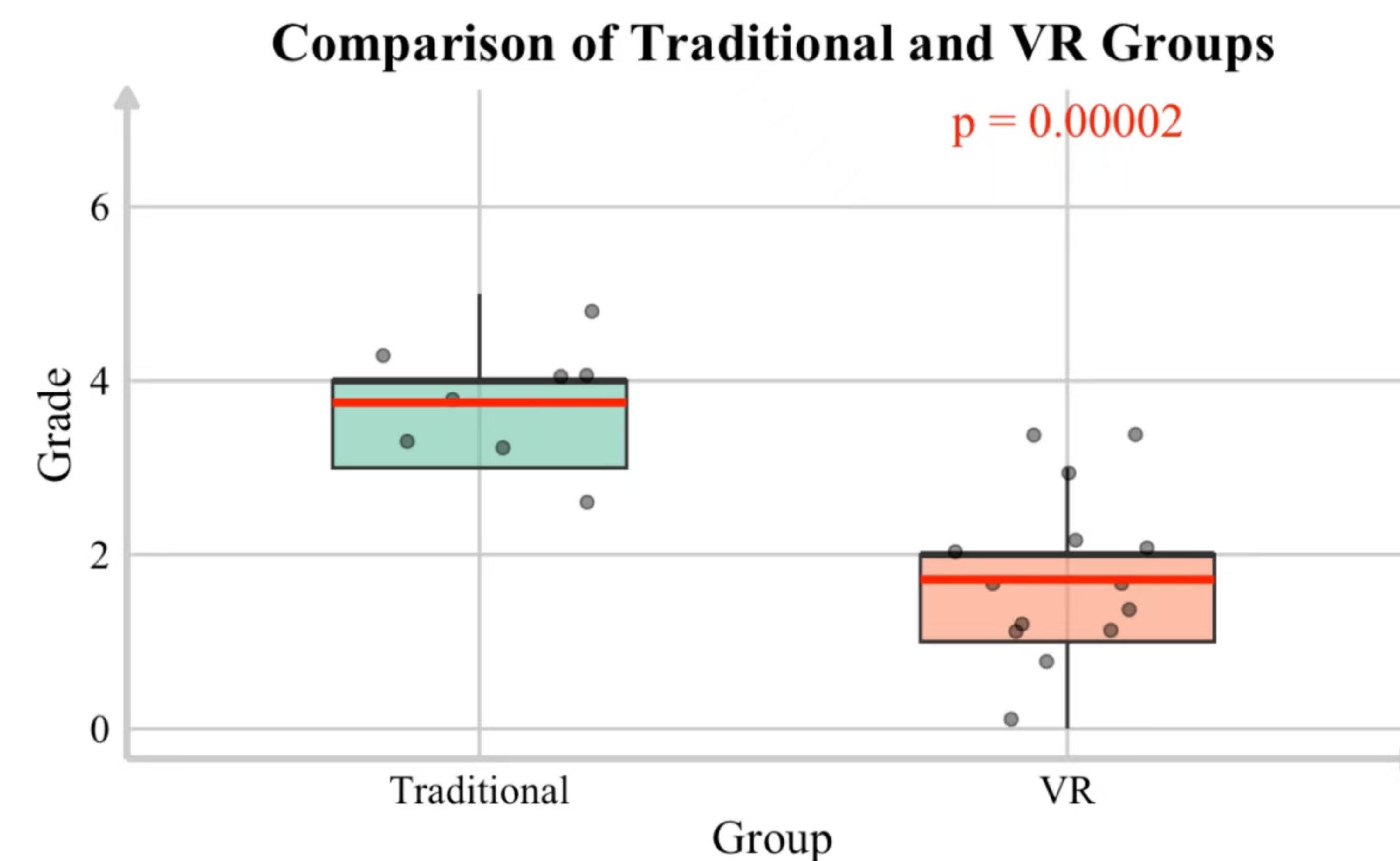


1 B: Virtual Reality Method
Video created by research team was displayed on VR headset for student population

Pre-assessments, Post-training MCQs, Feedback surveys

RESULTS

- Study participants 22 (Station 8 ; VR14)



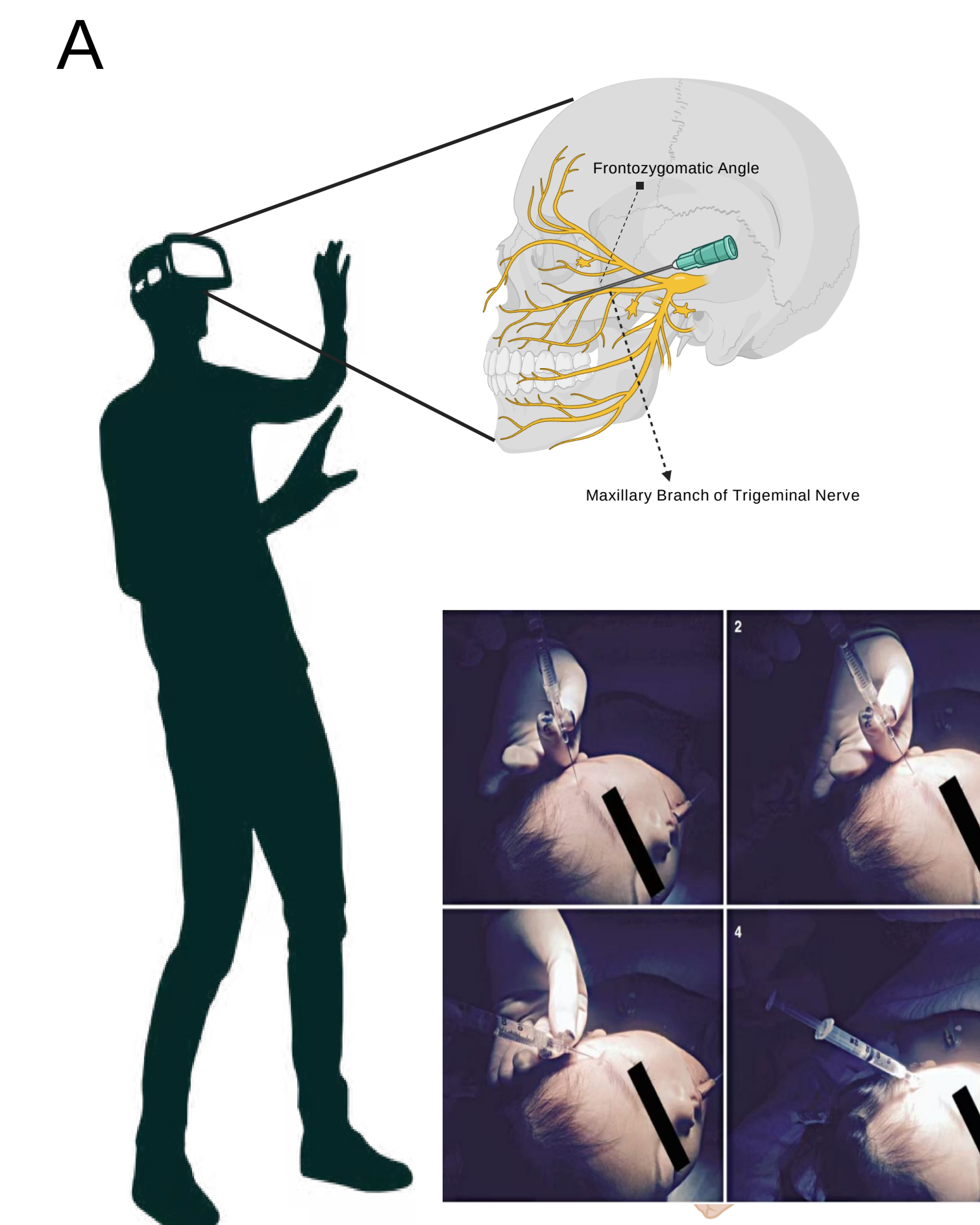
Station-Based Training vs. VR

- Station group scored higher on MCQs (3.75 vs. 1.71; $P < 0.05$).
- VR participants reported greater engagement.
- Station-based group reported “boring or difficult”

DISCUSSION & CONCLUSION

VR in Medical Education:

- Enhancing Engagement and Motivation
- Falls short in factual knowledge
- May requires textual or physical supplements.
- Future research: refine VR content, explore hybrid methods, and assess long-term clinical impacts.



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