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Title:
PROPOSING AN AUGMENTED REALITY FRAMEWORK FOR INTUITIVE TRANSLATION OF PREOPERATIVE IMAGING TO INTRAOPERATIVE VISUALIZATION WITH ACCURATE DEPTH PERCEPTION ON TABLET DEVICE.

Introduction
Augmented reality (AR) involves a technology Abe to overlay digital models onto a view of the real world, however limitations with depth perception and intra-operative usability prevent widespread use. This research demonstrates AR's potential to bridge pre-operative imaging with intra-operative findings, prospectively reshaping surgical practices and advancing patient care.

Methods
3D models were created from medical datasets using slicer, Autodesk 3DS Max, and Adobe Substance Painter. Scripts were refined for anatomical model customisation and enhanced depth perception. An AR tracking decal was affixed to the anatomical abdomen model.
21 medical professionals tested the application run on an Android tablet. The testing included: initial information sheets, competency assessments and usability scoring questionnaires.

Results

System Usability Scale (SUS) was ranked highly (Mean 84.17, exceeding benchmark median of 68). User experience yielded a mean score of 8.14 (out of 10), indicating good user satisfaction.

Qualitative feedback included interest in use in patient education, and praise for toggle features to increase transparency of various anatomical structures. Highlighted areas for improvement included enhanced anatomical detail and improved tracking.

Conclusion

This AR model demonstrated good depth perception with excellent usability scores and an effective way to translate pre-operative imaging onto intra-operative scenarios.