Healthcare Professionals' Intentions to Adopt Holoportation Technology

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INTRODUCTION & AIM

The rapid evolution of telehealth and advanced communication technologies has introduced new models of patient-provider interaction, including holoportation—a 3D, immersive telehealth tool that uses consumer augmented and virtual reality displays and real-time volumetric capture. Although promising in medical training, its adoption in clinical practice remains limited. This study examines provider adoption of holoportation using the Theory of Acceptance and Use of Technology (UTAUT) framework and contextual factors to guide implementation and strengthen digital health integration.

Study Objective: To inform strategies that promote successful adoption of holoportation in healthcare.

METHOD

The UTAUT is a central theoretical framework for examining how users adopt new technologies. This post-test, cross-sectional survey examined participants' perceptions of Holoportation after direct exposure during an educational session at the 2024 Medical & Health Symposium. Attendees with no prior holographic experience were invited to participate voluntarily and completed informed consent.

A 25-item scale was used, and data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) to test the following hypotheses:

H1. "Perceived usefulness (PU) positively influences the behavioral intention to use holoportation"
H2. "Perceived ease of use (PEOU) positively influences the behavioral intention to use holoportation."
H3. "Perceived ease of use (PEOU) positively influences the perceived usefulness of holoportation."
H4. "Technology anxiety negatively influences the perceived ease of use of holoportation."
H5. "Technology anxiety negatively influences the perceived usefulness of holoportation."
H6. "Perceived trialability positively influences the perceived usefulness of holoportation.
H7. "Social influence positively influences the behavioral intention to use holoportation."
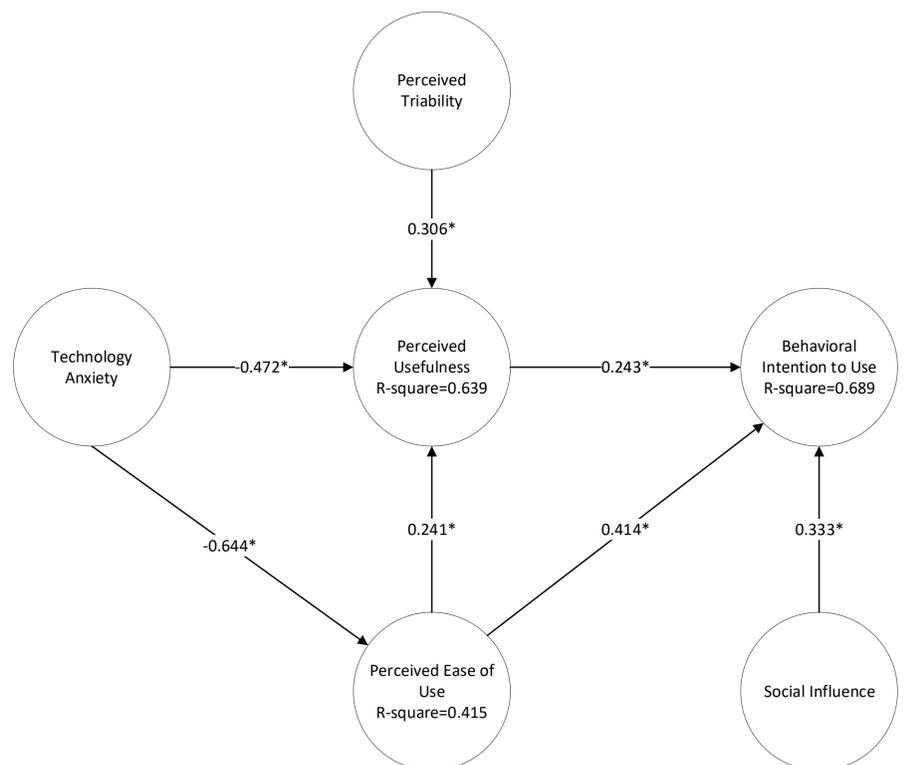
RESULTS & DISCUSSION

Fig. 1 Path coefficients in the research model with statistical significance (*p<0.05)

Key Implications for Holoportation Adoption

Theoretical Implications	Practical Implications
PEOU & PU predict adoption. Clinicians are more willing to use holoportation when it is intuitive and demonstrably useful.	Strengthen usability. Streamline setup, simplify interactions, and co-design workflows with clinicians to boost ease of use and perceived value.
PEOU enhances PU. Intuitive design increases perceived usefulness, reinforcing TAM theory.	Use trialability. Offer low-stakes pilot sessions to build clinician confidence and demonstrate real-world benefits.
Social influence matters. Peer endorsement and organizational support significantly shape willingness to adopt.	Highlight task-level value. Show improvements such as faster consults, better collaboration, or clearer provider–patient communication.
Technology anxiety reduces acceptance. Anxiety lowers both perceived ease of use and usefulness, underscoring training needs.	Reduce uncertainty. Hands-on testing and onboarding reduce anxiety and strengthen perceived advantages.

CONCLUSION

Our findings show that clinicians adopt holoportation when it is easy to use, clearly valuable, and supported by peers. Practical strategies such as improving usability and offering hands-on pilots can reduce anxiety, strengthen perceived benefits, and accelerate real-world implementation.

REFERENCES

Available upon Request