

Letter to the Editor

Should Expert Surgeon Guidance Be Given Remotely? Comment on “User Experience in Remote Surgical Consultation: Survey Study of User Acceptance and Satisfaction in Real-Time Use of a Telemedicine Service”

Daniella Soussi*, BSc; Chiara Jade Vedi*, BSc

School of Medicine, Imperial College London, London, United Kingdom

* all authors contributed equally

Corresponding Author:

Daniella Soussi, BSc
School of Medicine
Imperial College London
Exhibition Rd
South Kensington
London, SW7 2BX
United Kingdom
Phone: 44 02075895111
Email: d.soussis@yahoo.gr

Related Article:

Comment on: <https://humanfactors.jmir.org/2021/4/e30867>

(*JMIR Hum Factors* 2022;9(2):e36681) doi: [10.2196/36681](https://doi.org/10.2196/36681)

KEYWORDS

telemedicine; user experience; satisfaction; technology acceptance; usability; perioperative; surgery; consultation; surgeons; performance; evaluation; tele-guidance; telehealth; telemedicine implementation; telementoring; surgical consultation; usefulness

We recently read with great interest the article “User Experience in Remote Surgical Consultation: Survey Study of User Acceptance and Satisfaction in Real-Time Use of a Telemedicine Service” by Aminoff et al [1], where a real-time telemedicine service was used for intraoperative surgical consultation assistance during endoscopic retrograde cholangiopancreatography procedures. The authors investigated the surgeons’ preprocedure expectations of how the service would aid operative performance and patient outcomes, and their satisfaction after use of the service. We commend the authors for their work; however, we would like to highlight some caveats in their research.

Although this study presents interim results, we are concerned that the perceived future use of the service may be overestimated. Expert surgeons had to book out their time in advance to participate, and when the sample was asked about the perceived demand for teleguidance, 80% said they believed there would be no demand for it or were unsure of the demand [1]. This coupled with the fact that sites were encouraged to use the service due to being part of a trial makes it unclear as to whether the telemedicine service would be used in practice.

Moreover, technical issues experienced in virtual services can prohibit their successful implementation [2]. Technical issues were apparent in 24% of cases, and problems in audio and video connection and fluoroscopy transfer could lead to incorrect surgical decision-making guidance from the remote expert. Even though some of these issues were resolved either through connection restarting or calling medical technicians, these unnecessary delays increase patients’ time under anesthesia, which is known to increase perioperative complications such as infection [3]. Indeed, this could explain the 4 (2.8%) cases that had postoperative complications; although, we cannot confirm this as a causal inference [1]. Furthermore, due to the limitations in the content being transferred at any one time via the service and the lack of 3D visualization, we caution against the use of remote expert guidance in particularly difficult surgical decision-making scenarios.

Although novice endoscopic retrograde cholangiopancreatographers demonstrated an increase in their level of expertise during the study period, we argue that this intervention may be time-inefficient, with 81.1% of the procedure time being spent on receiving guidance [1]. Furthermore, no follow-up data is available to predict whether

skills would be maintained or regress if tele-guidance were not implemented, which casts doubt on the service's training value.

Previous work has found that *telestration* features can reduce the time of mentoring sessions [4]. However, due to the user-unfriendly design of this particular *telestration* tool, this benefit was unlikely. Therefore, we suggest the development of a more tailored design and function to create more time for other clinical duties consulting surgeons may have.

Finally, to determine the true value of this service in clinical practice, we recommend a study investigating the acquisition of both technical and nontechnical skills for on-site expert-guided surgeries compared to remote surgical consultation.

In conclusion, we commend the authors for their innovative surgical guidance service and suggest that the aforementioned are considered when formally implementing the service in the clinical setting.

Conflicts of Interest

None declared.

Editorial Notice

The corresponding author of "User Experience in Remote Surgical Consultation: Survey Study of User Acceptance and Satisfaction in Real-Time Use of a Telemedicine Service" declined to respond to this letter.

References

1. Aminoff H, Meijer S, Groth K, Arnelo U. User experience in remote surgical consultation: survey study of user acceptance and satisfaction in real-time use of a telemedicine service. *JMIR Hum Factors* 2021 Nov 30;8(4):e30867 [FREE Full text] [doi: [10.2196/30867](https://doi.org/10.2196/30867)] [Medline: [34851302](https://pubmed.ncbi.nlm.nih.gov/34851302/)]
2. Greenhalgh T, Vijayaraghavan S, Wherton J, Shaw S, Byrne E, Campbell-Richards D, et al. Virtual online consultations: advantages and limitations (VOCAL) study. *BMJ Open* 2016 Jan 29;6(1):e009388 [FREE Full text] [doi: [10.1136/bmjopen-2015-009388](https://doi.org/10.1136/bmjopen-2015-009388)] [Medline: [26826147](https://pubmed.ncbi.nlm.nih.gov/26826147/)]
3. Ravi B, Jenkinson R, O'Heireamhoin S, Austin PC, Aktar S, Leroux TS, et al. Surgical duration is associated with an increased risk of periprosthetic infection following total knee arthroplasty: a population-based retrospective cohort study. *EClinicalMedicine* 2019 Nov;16:74-80 [FREE Full text] [doi: [10.1016/j.eclinm.2019.09.015](https://doi.org/10.1016/j.eclinm.2019.09.015)] [Medline: [31832622](https://pubmed.ncbi.nlm.nih.gov/31832622/)]
4. Budrionis A, Hasvold P, Hartvigsen G, Bellika JG. Assessing the impact of telestration on surgical telementoring: a randomized controlled trial. *J Telemed Telecare* 2016 Jan;22(1):12-17. [doi: [10.1177/1357633X15585071](https://doi.org/10.1177/1357633X15585071)] [Medline: [26026177](https://pubmed.ncbi.nlm.nih.gov/26026177/)]

Edited by T Leung; submitted 22.01.22; peer-reviewed by D Gunasekeran; accepted 09.06.22; published 29.06.22

Please cite as:

Soussi D, Vedi CJ

Should Expert Surgeon Guidance Be Given Remotely? Comment on "User Experience in Remote Surgical Consultation: Survey Study of User Acceptance and Satisfaction in Real-Time Use of a Telemedicine Service"

JMIR Hum Factors 2022;9(2):e36681

URL: <https://humanfactors.jmir.org/2022/2/e36681>

doi: [10.2196/36681](https://doi.org/10.2196/36681)

PMID:

©Daniella Soussi, Chiara Jade Vedi. Originally published in *JMIR Human Factors* (<https://humanfactors.jmir.org>), 29.06.2022. This is an open-access article distributed under the terms of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work, first published in *JMIR Human Factors*, is properly cited. The complete bibliographic information, a link to the original publication on <https://humanfactors.jmir.org>, as well as this copyright and license information must be included.