

# Impact of remote education in gynecological surgery curriculum during the COVID-19 pandemic in Uganda

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## Background

- Many women in Uganda with gynecologic conditions are limited in access to surgical treatments, in particular, due to resource constraints and physical maldistribution. [1]
- The WHO reports there are only 1.68 doctors per 10,000 people in Uganda. [2] The shortage of trained health care professionals is a major challenge affecting women's health.
- Medicine for Humanity, a non-profit organization, has provided gynecological surgical education to medical learners in Uganda to address the gap between the number of those seeking care and those who can provide this care.
- Unfortunately, during the COVID-19 pandemic, United States-based physicians have not been able to travel so the teaching was transformed to an online Zoom-based format.

## Objectives

To identify how feasible and effective a remote lecture series (E-learning) for OB/GYN residents was in helping to meet knowledge gaps in gynecological surgical care.

*“With the everyday pandemic challenges, E-learning gives us the opportunity to continue with cross-cultural learning.”*

## Methods

- The COVID-19 pandemic required a new paradigm for medical education.
- A needs assessment was performed examining the gynecological surgical curriculum for the OB/GYN residency at the Mbarara University of Science and Technology (MUST) in Uganda.
- This resulted in the development of an 8-week lecture series covering topics in gynecological care conducted via the Zoom platform.
- Before initiation, a Pre-Test survey was created focusing on key themes. These themes included comfort and understanding of major gynecological concepts, perspectives on the value of information exchange, and feedback about the feasibility of E-learning.
- Lecture evaluations were developed to assess learners' feedback about the lectures and to evaluate if lectures met the intended objectives. After each lecture, the corresponding evaluation was distributed to learners.
- A Post-Test survey was developed focusing on the same themes as the pre-test to compare responses between the Pre and Post-Test survey.
- Surveys were distributed to all 30 of the OB/GYN residents at MUST who served as our study cohort.
- Data analysis utilized paired t-test for responses using the STATA statistical program, and qualitative responses were recorded and cataloged.

## Results

- Out of the study cohort, there were 24 that had paired responses. These included 9 first-year residents, 5 second-year residents, and 10 third-year residents.
- Comfortability with gynecological surgical topics:
  - **Comfort increased** from 12/21 (57.14%) to 16/21 (76.19%) in the pre-test and post-test respectively with learners choosing “Extremely comfortable” and “Somewhat comfortable”.
- Understanding and knowledge acquired:
  - **Knowledge significantly increased** on 4 out of 7 topics from baseline (see Figure 1).

## Tables and Figures

Table 1: Perspectives on international information exchange

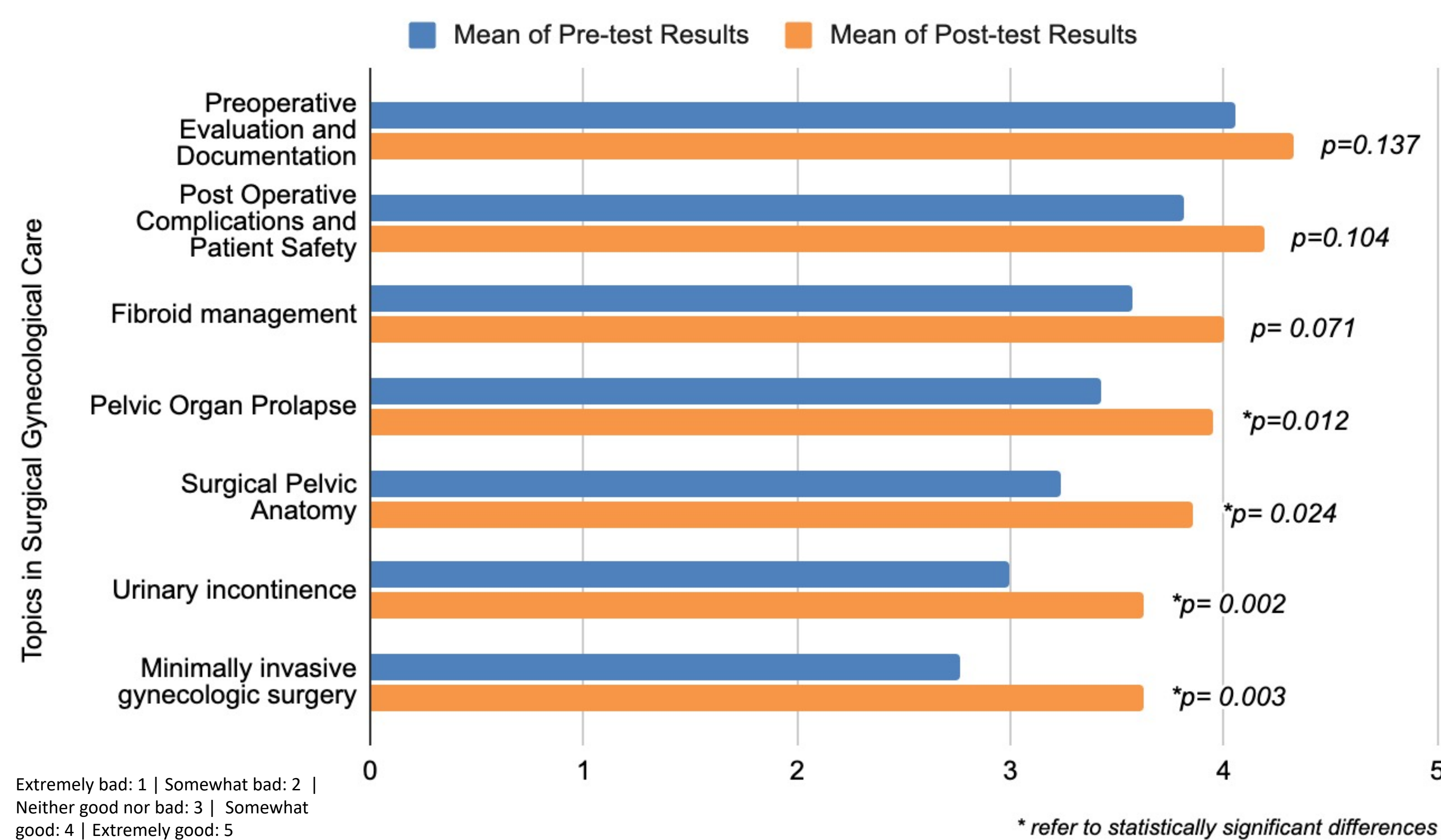


“Some procedures and techniques are things that we have never been exposed to and we didn't know about some of them. But after this information exchange, we have knowledge and now, I am encouraged to start some of these techniques.”

“There is information on techniques which we do not apply here probably due to limited resources. We managed to learn about these techniques from this information exchange.”

“I think education is a dynamic field where each passing day, advances are made and would take a while to be incorporated in books and information exchange may bridge that gap in a short time.”

Figure 1: Mean Values of Pre-test and Post-test Results



- International information exchange:
  - **All respondents** felt that there was value in an international exchange of information and that it had a positive impact on their education.
- Value of additional teaching resources:
  - **Virtually all participants**, 18/19 (94.75%)- **thought it was helpful** to have additional teaching resources above and beyond their MUST residency educational curriculum.
- E-learning as an education platform:
  - **Acceptability of E-learning as a training platform slightly decreased** from 17/18 (94.44%) to 15/18 (83.33%) with less learners choosing “Definitely yes” and “Probably yes”.
- Effectiveness of E-learning as a training platform:
  - **Approximately half of respondents felt that E-learning was effective** as a tool to receive and learn information with 9/18 (50%) and 10/18 (55.56%) choosing “Extremely effective” and “Very effective”.

## Discussion

- The surveyed group of learners responded positively about having additional teaching resources to supplement their residency educational curriculum.
- This finding is reflected in the fact that over half of the respondents commented in the surveys about the value of information exchange in helping them to learn about gynecological practices outside of Uganda.
- While the lecture series improved learners' comfortability with gynecological surgical topics, it is essential to note that a slight decrease in the acceptability of E-learning as a learning platform. This was likely due to internet problems and a heavy clinical workload.
- A significant increase in knowledge acquired was seen in over half of the topics covered during the lecture series. A few factors could have contributed to this increase, such as the quality of the presentation, the dynamism of the instructor, and engagement of the remote learners.

### Limitations:

- There was a limited variation to some responses on questions which limited our abilities to detect differences.
- Learners had heavy workloads that sometimes conflicted with the schedule of the lectures and prevented them from attending.
- The presence of the COVID-19 pandemic also limited the team's ability to have more personal interaction with the learners.

*“The series should continue in future and be an accepted way of information exchange”*

## Recommendations

- With the COVID-19 pandemic affecting how we communicate and interact for the foreseeable future, medical education has been forced to change and look at technology more as a lifeline for educating learners. Thus, the following recommendations can be made:
  - Expand and prioritize high-quality broadband internet quality for learners
  - Encourage interactive lectures that incorporate stimulating media balanced with meaningful text-based content
  - Be mindful during the creation of lecture schedule of region-specific national and cultural holidays as well as resident schedules and workload to facilitate attendance
  - Ensure the utilization of the preferred method of communication(e.g., WhatsApp instead of e-mail) to increase engagement

## References

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