



From paper to pixel: AI's role in modernizing patient communication

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INTRODUCTION

Placing the patient at the center of the therapeutic process requires going beyond technical competence by prioritizing communication and the human relationship. It is crucial to acknowledge the fears, doubts, and needs of patients, who often face complex medical procedures without a full understanding of what awaits them. In this context, informed consent should not be reduced to a simple bureaucratic act or a legal obligation, but should become a genuine moment of dialogue, active listening, and reassurance. The evolution of Artificial Intelligence (AI) makes it possible to enrich this moment with innovative tools, such as personalized and realistic videos that clearly demonstrate procedures, thereby fostering understanding, transparency, and mutual trust.

The objective of this study is to evaluate the impact of AI-based tools on patient understanding, anxiety levels, and the quality of physician-patient communication.

METHODS

To investigate the impact of AI on physician-patient communication and informed consent process, a protocol was developed for patients scheduled for surgical procedures. This method involves the use of AI to generate personalized videos and 3D animations that provide a detailed illustration of the anatomy involved, the pathology, and the specific steps of the surgery. The protocol includes the following phases:

- Submission of informed consent: verbal explanation by the physician and signed paper document
- Viewing of the personalized AI video
- Evaluation questionnaire: measurement of the level of comprehension and reduction in anxiety



Photo 1: Sequence of images extracted from an AI-generated video illustrating the procedural steps of a diode laser surgical intervention.

RESULTS

Patients who viewed the personalized videos reported a higher level of understanding of the procedure (+80% compared to traditional informed consent).

A significant reduction in pre-procedural anxiety was observed, with 55% of patients reporting a decrease in their VAS score.

The use of AI allowed for the standardization and clarification of medical language, translating complex concepts into intuitive representations.

CONCLUSION

The integration of AI into patient communication represents a new paradigm in the humanization of healthcare. Informed consent thus evolves into a moment of authentic dialogue, encouraging more relevant and targeted questions. Emerging technologies enable the reduction of linguistic and cultural barriers, thereby fostering greater patient awareness, a sense of reassurance, and strengthened physician–patient trust.

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Evaluation Questionnaire

Measurement of the level of comprehension and reduction in anxiety

Section A – Understanding

1. After watching the video, how clear was the explanation of your medical condition?

- ☐ Very unclear
- ☐ Unclear
- ☐ Neutral
- ☐ Clear
- ☐ Very clear

2. How well do you feel you understood the steps of the proposed procedure?

- ☐ Not at all
- ☐ A little
- ☐ Moderately
- ☐ Well
- ☐ Very well

3. Do you feel the video helped you understand aspects that were not clear from the verbal explanation?

- ☐ No, not at all
- ☐ Slightly
- ☐ Moderately
- ☐ Considerably
- ☐ Completely

4. How confident do you feel now in explaining the procedure to someone else?

- ☐ Not confident
- ☐ Slightly confident
- ☐ Moderately confident
- ☐ Confident
- ☐ Very confident

Section B – Anxiety and Emotional Response

5. Please rate your level of anxiety BEFORE watching the video (VAS 0–10, where 0 = no anxiety, 10 = maximum anxiety):

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10

6. Please rate your level of anxiety AFTER watching the video (VAS 0–10):

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10

7. Did the video make you feel more reassured about the upcoming procedure?

- ☐ Not at all
- ☐ Slightly
- ☐ Moderately
- ☐ Considerably
- ☐ Completely

8. Do you feel more comfortable now in asking your doctor further questions?

- ☐ No
- ☐ Partially
- ☐ Yes, completely

Section C – Overall Evaluation

9. Overall, how useful did you find the video in preparing you for the procedure?

- ☐ Not useful
- ☐ Slightly useful
- ☐ Moderately useful
- ☐ Useful
- ☐ Very useful

10. Would you recommend this type of video to other patients undergoing the same procedure?

- ☐ No
- ☐ Maybe
- ☐ Yes

Photo 2: Evaluation questionnaire designed to assess patient comprehension of the procedure and the reduction of pre-procedural anxiety after viewing AI-based personalized videos.