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Development and Assessment of a Video-Based Intervention to Improve Rhinoplasty Informed Consent

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Abstract

There has been a growing interest in improving the informed consent process to ensure patients truly understand the benefits, risks, and alternatives of their procedures. Herein, we sought to describe the production of an educational video to supplement the traditional rhinoplasty informed consent process. Additionally, we evaluate satisfaction and risk recall among prospective rhinoplasty patients who participated in the video-assisted informed consent process. One author attended 30 rhinoplasty consultations where informed consent was performed and generated 65 questions related to the benefits, risks, alternatives, and general knowledge of rhinoplasty operations. A video of the senior author answering these questions was filmed and edited to 25 minutes. Prospective rhinoplasty patients watched the video before their initial consultation and were asked to complete two surveys assessing their satisfaction with the video-assisted process as well as their ability to recall risks discussed in the video. Understandability and actionability of the video was assessed by three independent reviewers using the Patient Education Materials Assessment Tool. Postvideo surveys were completed by 40 patients. Patients strongly agreed that the video informed them about rhinoplasty risks and benefits (4.90/5.00), effectively answered their questions and/or concerns (4.78/5.00), and provided adequate information before surgery (4.85/5.00). Participants strongly recommended that all prospective patients watch the video prior to surgery (4.97/5.00). Participants on average correctly answered 4.00 ± 0.877 out of five risk recall questions. There was no statistically significant difference in risk recall performance between college graduates (4.19 ± 0.602) and those who did not graduate college (3.79 ± 1.08), $p = 0.076$. No significant correlation was found between patient age and recall performance ($r = -0.011$), $p = 0.943$. The overall mean understandability and actionability scores for the video were 100%. Video-assisted informed consent for rhinoplasty may enhance and overcome limitations to the traditional verbal consent process by ensuring comprehensive, standardized, and readily understandable information.

Keywords
- rhinoplasty
- informed consent
- quality improvement
- patient education
- video

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Informed consent is an ethically essential component of health care intended to educate patients on four key elements: risks, benefits, alternatives, and general knowledge about a proposed intervention.[1] Although a patient's signature on the consent form serves to both legally and symbolically document an agreement to participate, it does not imply patient understanding. In fact, several studies have demonstrated that standard informed consent practices consisting of a patient–clinician discussion followed by signing of a document commonly results in inadequate patient comprehension.[2,3] This has been largely attributed to lengthy consent forms, particularly seen in rhinoplasty, that are written at a level much higher than participants' reading skill levels, patient anxiety during the consultation visit, and poor communication technique among clinicians.[4–6] Subsequently, there has been a growing interest in improving the consent process.

Various adjuncts have been previously proposed to enhance the informed consent practice including written interventions (i.e., handouts, pamphlets) and audiovisual interventions (i.e., video or recordings, PowerPoint presentations, anatomical models).[7] However, many written aids have also been found to be of a poor level of readability.[8,9] Studies have shown that video-based interventions may subjectively enhance patient satisfaction and understanding compared with written supplements.[10–12] This has led to the increased incorporation of educational videos to complement the conventional informed consent process.

Nevertheless, there has been a paucity of studies investigating the feasibility of video-assisted informed consent within facial plastic and reconstructive surgery. Rhinoplasty is a target operation for such enhanced informed consent processes as it has a historically high revision rate, and litigation is common.[13–16] Unsurprisingly, rhinoplasty operations make up nearly 25% of aesthetic surgery litigation cases owing to insufficient informed consent.[17] In this study, we aim to discuss the development and incorporation of an educational video to supplement the traditional rhinoplasty informed consent process. Additionally, we evaluate satisfaction and risk recall among prospective rhinoplasty patients who participated in the video-assisted informed consent process.

Materials and Methods

This study was approved by the University of California, Irvine Institutional Review Board (IRB#205–2490).

Content Development

One author (LS) attended 30 rhinoplasty consultations where informed consent was performed. LS is an undergraduate student and selected specifically due to limited medical knowledge and presumed better perception of consent issues from a patient standpoint. From these interactions, 65 commonly asked questions were generated, and focused on the risks, benefits, alternatives, and general knowledge of both functional and cosmetic rhinoplasty operations. Certain risks and complications were emphasized based on the senior author's experience as well as their prevalence documented in the scientific literature.[13] Special attention was drawn to surgical benefits (i.e., cosmetic/functional improvements), uncommon complications that are frequently discussed on social networking platforms (i.e., empty nose syndrome, skull base fractures), common postoperative sequelae (i.e., numbness, stiffness), common complications (i.e., dissatisfaction, persistent nasal airway obstruction), and setting expectations (i.e., need for revision, persistent postoperative asymmetries).

Video Recording

A 4K camcorder (SONY FDR-AX53, Sony, Tokyo, Japan) was used to film the educational video. The camera was secured to a tripod at eye level and the senior author sat in front of a professional background to mimic a consultation office. A smartphone with the Easy Voice Recorder application was placed on a table in close proximity to the surgeon—but outside of the camcorder's sightlines—to record sound that would otherwise be of poor quality with the distant camcorder microphone. The senior author (BJFW) donned appropriate attire for a rhinoplasty consultation and spoke in active voice as if he were talking to the patient.

The 65 questions were asked repeatedly to the senior author to generate clear, concise, and easily understood responses with adequate audio. This led to approximately 3 hours of video footage which was then edited using iMovie (Apple Inc., Cupertino, CA) and shortened to 25 minutes. The video was distributed on tablet computers to prospective patients in the waiting room prior to their consultation. Patients were encouraged to write down questions while watching the video.

Content Evaluation

The 25-minute informed consent video was assessed by a panel of three independent reviewers using the Patient Education Materials Assessment Tool (PEMAT-A/V). The PEMAT is a well-established metric that assesses understandability (defined as the ability for consumers of diverse backgrounds to "process and explain key messages") and actionability (defined as the ability for consumers to "identify what they can do with the information presented") of both printed and audiovisual materials.[18,19] Specifically, understandability is evaluated using a 13-item questionnaire divided into five topics: content (one item), word choice and style (three items), organization (four items), layout and design (three items), and use of visual aids (two items). Actionability is assessed using a four-item survey. Both understandability and actionability scores were reported as a percentage of agreed response out of the total number of questions in each section.

Patient Evaluation

As part of a quality improvement exercise, the video was administered to 40 consecutive prospective rhinoplasty patients. At the end of the video, patients completed a paper-based survey which asked them to rate their satisfaction with various aspects of the educational video on a Likert

Table 1 Patient satisfaction survey and response

Satisfaction questions	Average rating
The video effectively informed me about the risks and benefits of a rhinoplasty	4.90
The video effectively answered my questions and/or concerns	4.78
The video provided me with adequate information prior to my procedure	4.85
I would recommend all patients view this video before surgery	4.97

Table 2 Risk recall questionnaire

Risk recall questions
Empty nose syndrome is a common rhinoplasty complication
It is normal for the tip of my nose to be stiff after my rhinoplasty
It is normal for my sense of taste to be different after my rhinoplasty
Rhinoplasty revision rates are historically low
Numbness around the nose and upper lip after surgery is a serious rhinoplasty complication

scale of 1 (strongly disagree) to 5 (strongly agree) (►**Table 1**). The questions in this survey were modified from previously published studies that had similar assessments in this setting.[20–22] Additionally, patients were given a five-question questionnaire that tested their ability to recall complications discussed in the video by answering "True," "False," or "Unsure" (►**Table 2**). This served as a more objective means of assessing how well patients truly understood and retained video content. The specific risks in the recall questionnaire were selected to better gauge patients' understanding of common and uncommon rhinoplasty complications and to reiterate expectations. An independent *t*-test and Spearman's rank correlation were performed to determine the influence of education level and age, respectively, on the number of correct responses. A *p*-value of less than 0.05 was considered statistically significant. After completing the survey, patients underwent a traditional rhinoplasty consultation with the senior author where the informed consent was reiterated.

Results

The overall mean understandability score for the informed consent video was 100%, and the overall mean actionability score was 100%. The postvideo surveys were completed by 40 English-speaking patients, including 26 (65%) women and 14 (35%) men. The average patient age was 40.8 years. Twenty-one (53%) of the patients were college graduates, 17 (43%) were high school graduates, and 2 (5%) had completed some high school. On average, patients strongly agreed that the supplemental video informed them about the risks and benefits of rhinoplasty (4.90/5.00), the video effectively answered their questions and/or concerns (4.78/5.00), and the video provided adequate information prior to the operation (4.85/5.00). Additionally, participants strongly recommended that all prospective patients watch the video prior to surgery (4.97/5.00).

Patients on average correctly answered 4.00 ± 0.877 out of the five risk recall questions. There was no statistically significant difference between the average number of questions answered correctly by college graduates (4.19 ± 0.602) compared with those who did not graduate college (3.79 ± 1.08), $p = 0.076$. No significant correlation was found between patient age and recall performance ($r = -0.011$), $p = 0.943$.

Discussion

A well-recognized challenge in the traditional informed consent process is ensuring that patients are adequately informed of the risks, benefits, and alternatives to their therapy. Despite much of this information being discussed in the initial consultation and included in the informed consent document, such modalities have been associated with poor patient understanding and low retention rates. Fleischman and Garcia demonstrated that patients undergoing Mohs micrographic surgery had an overall retention rate of 26.5% twenty minutes after the informed consent discussion.[23] Among patients undergoing spinal deformity surgery, median risk recall was only 45% immediately after discussion.[24]

The low rates of understanding and retention in the traditional oral and written consent processes motivated our thorough, patient-centered content generation process. An undergraduate student (BJFW) noted 65 frequently asked questions during 30 initial rhinoplasty consultations to ensure the video addressed these common patient concerns. Additionally, a literature review and analysis of informed consent documents were performed to provide comprehensive, evidence-based information on all elements of the consent process.[14] When filming, the senior author (BJFW) was asked the same questions multiple times in a random sequence to generate clear and candid answers that would be readily understood among individuals with limited medical knowledge or expertise, mimicking the initial rhinoplasty consultation. Finally, the 3-hour raw video footage was edited to create a concise 25-minute video, so that patients would not feel overwhelmed with the presented information.

In this study, we found that prospective rhinoplasty patients exhibited a high rate of risk recall after watching the preconsultation video, which was consistent with other video-assisted informed consent studies.[25] Importantly, age and education level did not significantly impact recall performance. This is in contrast to the only previous study aimed at improving rhinoplasty informed consent through written aids which found patients with a university or higher education recalled significantly more risks than those without a university education.[26] This suggests that the information in

the video was presented in a manner that was easy to understand, overcoming educational and cognitive barriers. The understandability and actionability of our informed consent video were further confirmed by its 100% scores in the PEMAT-A/V assessment tool. Such a result is of utmost importance considering elderly patients and those with lower education levels are more likely to experience difficulties in understanding the traditional informed consent process.[6,9,27]

Additionally, we demonstrated that supplementing the traditional informed consent process with an educational video led to a high level of satisfaction among prospective rhinoplasty patients. This satisfaction even before meeting the surgeon is important as it sets the precedence for the patient–surgeon relationship. Many patients strongly agreed that the video effectively answered their questions even before seeing their surgeon. This not only enhances patient education, but may also allow consultation visits to be more efficient, focusing on specific evaluations or patient concerns. Moreover, it has been previously shown that there is a greater improvement in rhinoplasty patient satisfaction scores postoperatively among patients who were satisfied with the information given before surgery.[28] While this metric was not directly evaluated in this preliminary study, prospective investigations are underway to assess the influence of our video-based informed consent on validated patient-reported outcome measures.

The informed consent video supplement offers several noteworthy strengths over the previously described oral and written interventions. It can be sent digitally to patients at any time prior to the visit, giving the surgeon an opportunity to set expectations and educate patients before the initial consultation. Thus, patients can watch the video multiple times, potentially even with family members who are unable to attend the visit, and approach the consultation with an increased understanding of the operation. This repetition in itself may likely also lend to more effective risk recall. Additionally, the video serves as a standardized means of disseminating preoperative information. As each patient views the identical detailed content, quality and safety is enhanced by reducing potential omission errors, less effective wording, and suboptimal descriptions of key concepts which may occur during the initial consultation.[20]

The primary goal of this study was to describe the production of a rhinoplasty informed consent video and preliminarily assess patient satisfaction and risk recall. Nevertheless, our study paves the way for additional works in rhinoplasty informed consent quality improvement. A future randomized controlled trial is underway to compare satisfaction, risk recall performance, and rates of patients who proceeded to schedule their rhinoplasty operation between patients who watch the informed consent video and those who undergo traditional oral discussion. Additionally, we hope to gauge recall at more distant times to assess trends in recall decline over time. This would offer insight into recommended preoperative visits or phone calls during which education should be reinforced.

Conclusion

Video-assisted informed consent serves as a valuable supplement to the initial rhinoplasty consultation. Patients expressed strong satisfaction with the educational video and they correctly recalled most of the discussed postoperative risks and complications. Such an improvement to the informed consent process may be especially beneficial to individuals with poor health literacy who are more susceptible to poor understanding.

Conflict of Interest
None declared.

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