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Original Article

Improving the Patient Decision-Making Experience for Cataract Surgery During the COVID-19 Era

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Objective: To explore whether video-based patient decision aids (VBPDAs) for cataract surgery consultation can enhance a patient's decision-making process while upholding safety regulations during the coronavirus disease 2019 (COVID-19) pandemic.

Design: Single-centre consecutive case study.

Participants: 147 patients, with an average age of 70 years, who came in for a cataract surgery consult were enrolled in this study.

Methods: All patients watched part 1 of the VBPDA outlining the process of cataract surgery and the decisions involved. Patients then underwent cataract surgery consultation with an ophthalmologist. Afterward, if the patient was indicated for surgery, part 2 of the VBPDA was played. At the end of the visit, all patients completed a survey assessing the effects of COVID-19 safety precautions on their appointment. In addition, patients who had gone forward with surgery complete the Decisional Conflict Scale (DCS).

Results: For patients proceeding with cataract surgery, the median DCS score was 9.38 (range, 0–54.69, min–max) on a scale from 0 to 100 (low–high decisional conflict). A DCS score <25 indicates low decisional conflict (n = 76, 68.47%) and a score >25 indicates feeling unsure (n = 35, 31.53%). The DCS also can be separated into various subscales: the informed subscale (median = 8.33; min–max = 0–66.67), values subscale (16.67, 0–58.33), support subscale (8.33, 0–50.00), uncertainty subscale (8.33, 0–83.33), and effective decision subscale (0, 0–37.50).

Conclusion: Our study found VBPDAs to be an effective tool to enhance the patient decision-making process for cataract surgery during the COVID-19 era.

Cataract surgery is a common surgery and is one of the most cost-effective health care interventions, impacting quality of life and psychological well-being.[1,2] Given the many treatment options available, cataract patients are uniquely faced with the task of making numerous choices that will have permanent impacts on their vision (i.e., biometry, intraocular lenses, focus). Coronavirus disease 2019 (COVID-19) adds another layer of challenge because the introduction of public health measures presents obstacles to the surgical consent process, including regulations limiting family member accompaniment into health care facilities and masks muffling communication (especially for those who lip-read).[3]

A potential solution to circumvent many of these challenges is the implementation of patient decision aids (PDAs). PDAs present facts about a patient's condition, render the decision-making process more explicit, and list the features of available options (i.e., benefits, harms, specific indications).[4] Spanning a multitude of medical specialties, PDAs increase patients' knowledge, clarity of values, role in decision making, and accuracy of risk perceptions with no adverse effects on health outcomes or patient satisfaction.[5] Studies have shown that using videos in adjunct to counselling can help increase patient satisfaction and comprehension while decreasing anxiety.[6-9] These aids prepare patients to better understand their options and values in conjunction with (not instead of) health practitioner counselling.[4]

To date, there has not been a quality improvement study on the potential of video-based PDAs (VBPDAs) to enhance patient experience in cataract surgery consultations. Our study aims to investigate whether a VBPDA can effectively aid the decision-making process while optimizing patient safety in the context of public health guidelines for COVID-19.

Methods

Participants

Patients referred to a single-centre clinical practice for a cataract consult were enrolled. Exclusion criteria included patients who required a substitute decision maker, patients

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with difficulty understanding English, and patients with significant hearing and visual impairments.

Ethics

Informed consent was obtained from study participants orally. The Hamilton Integrated Research Ethics Board determined that approval was not required for this study.

Intervention

PDA development

Evidence shows that VBPDA formats are more effective than printed materials.[10,11] Thus, VBPDAs depicting whiteboard animations with narrations and closed captions were developed with consultation from patients and health care professionals via a continuous improvement (plan-do-study-act) process (Fig. 1). The VBPDA (Table 1) was developed along International Patient Decision Aid Standards (IPDAS), which include 44 evidence-based criteria for the development of PDAs.[12]

Implementation

On arrival, patients were given dilating drops in preparation for ophthalmologist examination. While waiting for full dilation, patients were shown part 1 of the VBPDA. During the encounter with the ophthalmologist, patients were put into 2 groups: those proceeding with cataract surgery (Indicated group) and those not currently proceeding (Observed group). Only patients in the Indicated group proceeded to watch part 2 of the VBPDA and engaged in shared decision making with the ophthalmologist (Fig. 2). The VBPDAs also were uploaded onto the clinic's web site for easy access. After the clinical encounter, all patients completed a survey.

Table 1—Content of video-based patient decision aids

Section	Summary of Content
VBPDA Part 1	
Introduction (4:17 min)	Overview of cataracts, the process of cataract surgery, and the 3 decisions patients will need to consider before surgery (biometry, intraocular lens, and focus)
Biometry (3:57 min)	Compares the advantages, disadvantages, and prices of the 2 choices available: ultrasound and optical biometry
Intraocular Lenses (5:57 min)	Compares different types of intraocular lenses and their indications: standard, toric, wavefront, and multifocal lenses
Focus (3:14 min)	Outlines the same focus in both eyes (near, intermediate, or distance vision) or 2 different foci between eyes (i.e., monovision)
VBPDA Part 2	
Summary (2:55 min)	Summarizes the decisions to be made by the patient and the options available; prompts patients for their choices and opens the floor for discussion or counselling with the surgeon

VBPDA, video-based patient decision aid.

Outcome Measures

Primary measure: decisional conflict in the Indicated patient group

Decisional conflict is also associated with inadequate knowledge, unclear values, lack of support, and the perception that an ineffective decision was made.[13] The Decisional Conflict Scale (DCS) is a validated 16-item scale that measures a person's perceptions of the quality of the decision made, scored from 0 to 100 (low to high decisional conflict). It includes subscales measuring 5 dimensions of

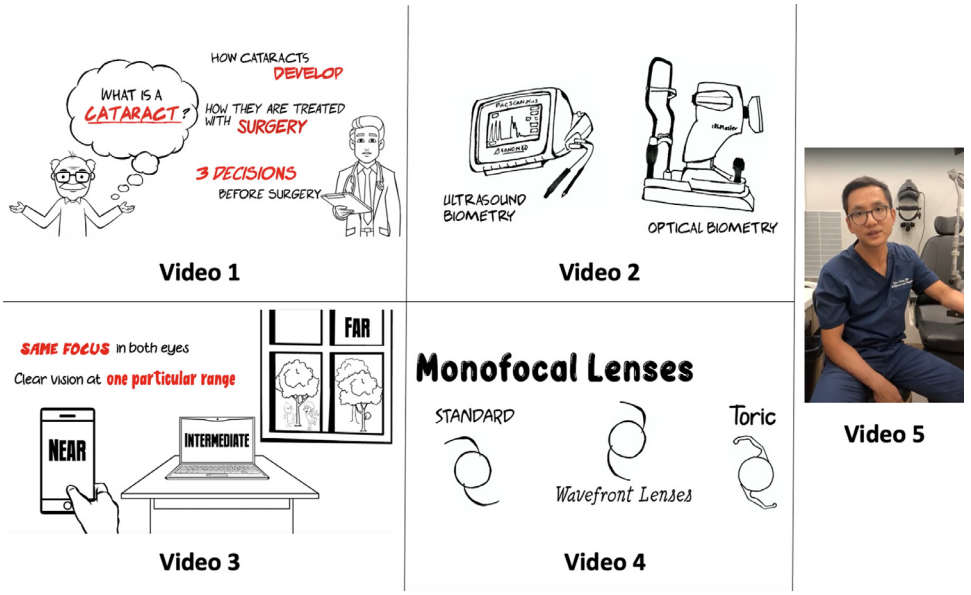

Fig. 1—Screenshots from video-based patient decision aid.

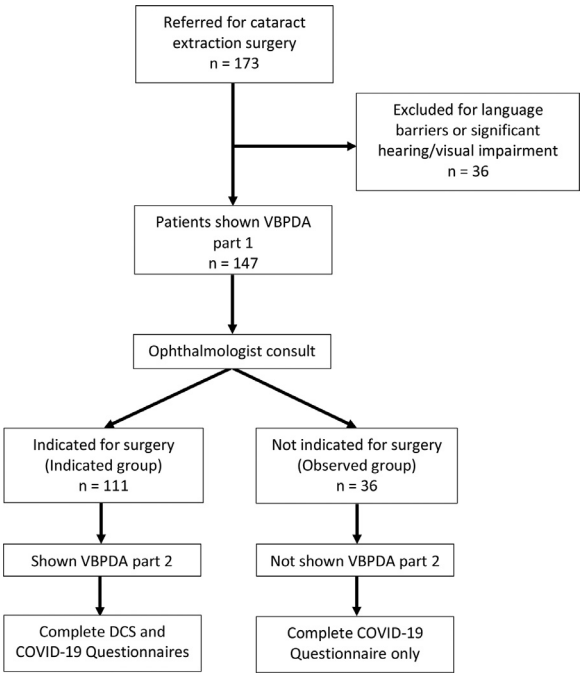

Fig. 2—The clinic workflow displaying implementation of the whiteboard video-based patient decision aid.

decision making: informed, values, support, uncertainty, and effective decision.[13] Patients in the indicated group completed the DCS to evaluate how they felt about their decisions in preparation for surgery. Scores <25 are associated with implementing decisions, and scores >37.5 are associated with decisional delay, with scores >25 reflecting clinically significant decisional conflict.[14,15]

Secondary measures: COVID questionnaire and other questions

Both patient groups completed questionnaires about the effect of COVID-19 and its associated safety restrictions on their visits, including whether they typically have help from others who weren't able to join them for this appointment, whether masks made it difficult to hear, and whether they were concerned about COVID-19 exposure. A control group was not included in the study as it was safer for patients to follow the VBPDA workflow. Instead, patients were asked in the survey if they believe the decision would have been harder to make without the video, mimicking a control response. Qualitative feedback also was elicited.

Statistical Analysis

DCS total scores and DCS subscores were calculated for each participant. The median was calculated due to the high variability in individual scores since DCS scores could range from 0 to 100. The median also was provided for questions with 5-point Likert-type scale data. Binary questions (i.e., yes/no) were evaluated as percentages. All statistical analysis was performed using the IBM SPSS version 26 software (IBM Inc, Armonk, NY).

Table 2—Decisional conflict scale scores for the n = 111 indicated group

DCS score	Median (min–max)
Total DCS	9.38 (0–54.69)
Informed subscale	8.33 (0–66.67)
Values subscale	16.67 (0–58.33)
Support subscale	8.33 (0–50.00)
Uncertainty subscale	8.33 (0–83.33)
Effective decision subscale	0 (0–37.50)

DCS, Decisional Conflict Scale.

Results

COVID-19 questionnaire: indicated and observed

See Table 2.

Decisional Conflict Scale: Indicated

Of the n = 111 participants in the Indicated group, 76 participants (68.47%) scored <25 (low decisional conflict), 30 participants (27.03%) scored between 25 and 37.5 (moderate decisional conflict), and 5 participants (4.50%) scored >37.5 (high decisional conflict). See Table 3.

Mimicked control and feedback

In mimicking a control group, 79.60% agreed or strongly agreed that the decisions would have been harder to make without the VBPDA. In general, 87.08% thought the VBPDA was a good way to learn information before giving consent. Qualitative feedback was generally in support of the VBPDA with statements suggesting that the video "was very organized and informative" with "excellent information."

Discussion

Based on projections of the SARS-CoV-2 transmission dynamics, Kissler et al.[16] predict that the virus may affect

Table 3—COVID questionnaire

COVID questions	Yes/no (%)
Do you typically have someone (like a family member) assist you in your appointments?	75/141 (53.0)
Would you consider yourself hard of hearing?	35/140 (25.0)
Was the ophthalmologist harder to hear behind his or her mask?	28/140 (20.0)
Did you find the videos clear and easy to hear?	136/140 (97.0)
Would you consider yourself high risk with regard to COVID-19?	35/140 (25.0)
Regarding fear of COVID-19 exposure, did you feel more comfortable by avoiding a lengthy conversation with the ophthalmologist to discuss the same contents as the video? (0 = strongly agree; 4 = strongly disagree)	Strongly agree: 30/137 (22.0) Agree: 41/137 (30.0) Neutral: 55 (40.0) Disagree: 10/137 (7.5) Strongly disagree: 1 (0.5)

COVID-19, coronavirus disease 2019.

our lives for the foreseeable future. Already high volumes for cataract surgery are exacerbated by backlogged elective procedures, suspended in the thick of COVID-19 surges.[3,17] The challenge is to provide health care in a setting of immensely increased workload while ensuring implementation of key safety modifications. Tognetto et al.[2] suggest that flexibility in using new strategies will most effectively optimize safety in elective cataract surgery, such as the adoption of technological alternatives.

The cataract patient demographic is often more susceptible to infection, complications, and death from COVID-19 because of underlying comorbidities.[18] Our survey shows that 25% of patients considered themselves at high risk for COVID-19. Public health measures suggest encouraging patients to come to clinics alone to limit the number of people in the waiting area for appropriate distancing.[3] Our data show that 53% of patients usually have someone assist them in appointments, making it challenging for them to come alone as they usually support in making the complex decisions involved in cataract surgery.

As an age-related disease, the cataract-afflicted population coincides with those who are hard of hearing.[19] Masks are essential to prevent transmission but pose challenges to persons who are hard of hearing as they reduce acoustic transmission and prevent lip-reading.[20] In our survey, 25% of patients indicated that they consider themselves hard of hearing, and 20% found the ophthalmologist hard to hear. On this note, 97% of patients found the VBPDA clearly audible because it was played at a comfortable volume and the video is close captioned. In addition, the VBPDA shows the surgeon's face behind the mask, thus eliminating the social disconnect that can occur with masks. Our patients have commented that being able to see the surgeon's face contributed to a positive clinical encounter.

The median DCS score of 9.38 in the Indicated group demonstrates that in conjunction with succinct counsel from the ophthalmologist, the VBPDA was effective in supporting decision making. Patients consistently scored <25 in all subscales: they felt informed, believed their decision was aligned with their values, felt supported, felt sure, and felt that they made an effective decision.

The VBPDA optimizes workflow efficiency, which has been hindered by new COVID-19 measures: limits on the number of patients in the clinic, screening on arrival, reduced allowance of accompanying persons, and so on.[21-23] In our workflow (Fig. 3), patients are able to watch the VBPDA while they are dilating and have a better understanding of the topic before the consultation. Efficiency is improved for the physician, who can continue with the clinic while patients watch VBPDA part 1. As patients watch VBPDA part 2, the ophthalmologist can work on tasks such as charting, ensuring that when interacting with patients directly, the ophthalmologist is engaged and not distracted by said tasks. This approach improves workflow while providing safe and effective care.

The VBPDAs may help with implementation of new modifications beyond cataract surgery consent. For example,

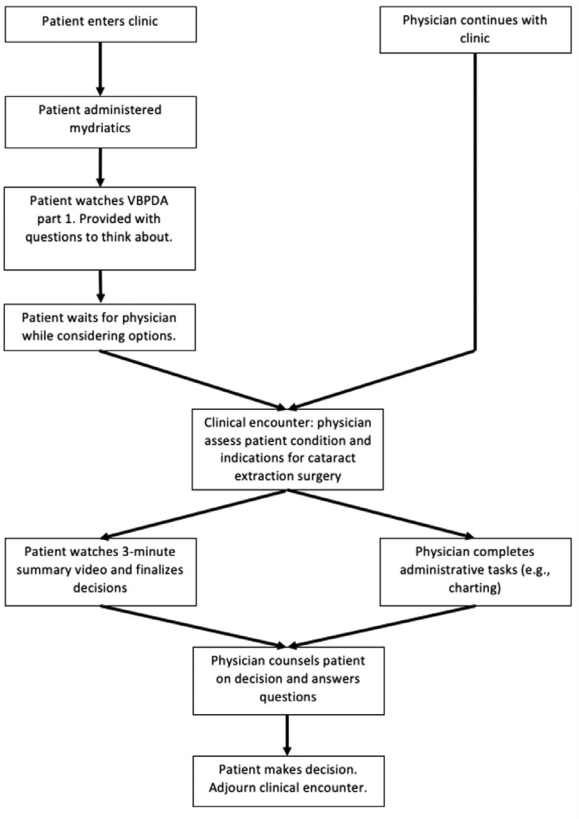

Fig. 3—Implementation of video-based patient decision aid.

the videos can provide information for other commonly performed and predictable procedures, including laser peripheral iridotomy, YAG laser capsulotomy, and selective laser trabeculoplasty, or even procedures outside of ophthalmology. Multimedia educational materials are customizable to individual practices and can be uploaded on the internet for patient access (for example, our videos: www.hamiltoneye.ca/blog).

Limitations

Maintaining patient safety as a priority during the pandemic excluded the possibility of a control group. Having patients watch the videos made the workflow more streamlined and reduced exposure time. However, there was no baseline group with which to compare the DCS results; thus, we cannot quantify exactly how effective the VBPDA was. Nonetheless, evidence from previous studies has generally shown that PDAs made with the IPDAS criteria decrease decisional conflict.[5] Future studies could evaluate longitudinal patient satisfaction with their decision and evaluate patient visit time with the use of a VBPDA.

Conclusion

Our VBPDAs were shown to be an effective intervention to enhance patient decision making for cataract surgery during the COVID-19 era.

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Footnotes and Disclosures

Brian J. Chan is a paid consultant for Allergan and has received honorariums for speaking engagements but has no financial disclosures for this study.

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