Video-based Informed Consent in Radiology – Acceptance, Satisfaction, and Effectiveness

Video-basierte Aufklärung in der Radiologie – Akzeptanz, Zufriedenheit und Erfolg

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ABSTRACT

Purpose Before any medical procedure, including computed tomography (CT), it is crucial to ensure patients are fully informed about the risks and alternative options. Video-based informed consent offers an increased transfer of information in less time.

Materials and Methods In a monocentric, prospective, questionnaire-based study, video-based informed consent, which included a digital medical history form, was compared to the traditional paper-based consent form. Two groups (doctors and patients) were divided into a control group (traditional informed consent) and one study group (video-based informed consent). Participants rated their satisfaction and acceptance on a scale of 1 to 6 (1: very good). Additionally, patients' understanding of the information provided was evaluated, and the duration of informed consents process was measured.

Results A total of 205 patients in the control group and 150 in the study group were surveyed. Satisfaction ratings of "very good" or "good" were similar for both methods (91 % control group, 94 % study group). The patients' study group showed a higher recall of the information provided in all six areas, e. g. radiation exposure (73 % control group; 86 % study group). Among the doctors, 20 from the control group and 11 from the study group were interviewed. Satisfaction was significantly higher in the study group (30 % control group, 72 % study group).

The duration of the traditional informed consent process averaged 270.2 seconds, compared to 228.7 seconds for the video-based informed consent.

Conclusion Satisfaction with video-based information is high among both patients and doctors. Patients retain the content more effectively with video-based informed consent, which also saves time.

Key Points

- Video-based informed consent shows high levels of satisfaction and acceptance among patients and doctors.
- After a video-based informed consent consultation, patients were better able to remember the information provided.
- Compared to conventional informed consent consultations, video-based consultations save time.

Citation Format

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ZUSAMMENFASSUNG

Ziel Vor jeder medizinischen Behandlung – auch der Computertomografie (CT) – muss der Patient über Risiken und Alternativen aufgeklärt werden. Die Video-basierte Aufklärung bietet einen gesteigerten Informationstransfer bei geringerem Zeitaufwand.

Material und Methoden In einer monozentrischen, prospektiven, Fragebogen-basierten Studie wurde die Video-basierte Aufklärung inklusive digitalem Anamnesebogen mit der Aufklärung mit einem Aufklärungsbogen verglichen. Für zwei Kollektive (Ärzte und Patienten) wurde je eine Kontrollgruppe (konventionelle Aufklärung) und eine Studiengruppe (Video-basierte Aufklärung) zur Zufriedenheit und Akzeptanz auf einer Skala von 1–6 (1: sehr gut) befragt. Zusätzlich wurde das Verständnis der Aufklärungsinhalte bei Patienten evaluiert. Die Dauer des ärztlichen Aufklärungsgesprächs wurde gemessen.

Ergebnisse 205 Patienten der Kontrollgruppe und 150 der Studiengruppe wurden befragt. Die Zufriedenheit war bei beiden Aufklärungsmethoden „sehr gut“ bzw. „gut“ (91 % Kontrollgruppe, 94 % Studiengruppe). Die Aufklärungsinhalte erinnerten in allen sechs Teilbereichen mehrheitlich die Patienten der Studiengruppe, z. B. die Strahlenbelastung (73 % Kontrollgruppe; 86 % Studiengruppe).

20 Ärzte der Kontrollgruppe und 11 der Studiengruppe wurden befragt. Die Zufriedenheit war in der Studiengruppe deutlich höher (30 % Kontrollgruppe, 72 % Studiengruppe).

Die Dauer der konventionellen Aufklärung betrug 270,2 Sekunden, bei der Video-basierten Aufklärung 228,7 Sekunden.

Schlussfolgerung Die Zufriedenheit mit der Video-basierten Aufklärung ist hoch. Bei der Video-basierten Aufklärung erinnern die Patienten häufiger die vermittelten Inhalte. Zudem zeigt sich eine Zeitersparnis der Video-basierten Aufklärung.

Kernaussagen

- Die Video-basierte Aufklärung zeigt eine hohe Zufriedenheit und Akzeptanz bei Patienten und Ärzten.
- Nach einer Video-basierten Aufklärung erinnern sich die Patienten besser an die vermittelten Inhalte.
- Im Vergleich zur konventionellen Aufklärung bietet die Video-basierte Aufklärung einen Zeitvorteil.

Introduction

Before any medical procedure, patients have to be informed about the risks and alternative options as part of an informed consent consultation. This applies to both treatment and diagnostic activities, and it includes providing patients with information about radiology procedures such as contrast-enhanced computed tomography (CT). The aim is to ensure that patients understand the planned treatment or examination, and can decide or consent independently regarding whether or not they want to accept the inherent risks in return for the potential benefits of the treatment.

It is recommended (but not mandatory) to use tools and educational materials for the informed consent consultation [1]. Consent forms are widely used that, in addition to the conveying information, provide a record of the informed consent consultation for documentation purposes. Classically, the patient receives a two-stage informed consent based on Weissauer's template [2]. First, a consent form with information in text form is used to ensure the patient understands the basics, in order to individually address topics in the consent form and answer questions in a subsequent personal consultation with the doctor.

Whether all patients read or understand the consent form fully is questionable. There are many reasons for this, such as nervousness before treatment or the complexity of medical subject matter. The high level of legal requirements for informed consent is also a challenge for the doctors providing informed consent consultations. If patients do not sufficiently understand the treatment sought, it can have a negative impact on the legal validity of the consent and, based on potential lack of informed consent, can have negative legal consequences for doctors [3].

It can be a challenge to provide informed consent processes that meet legal requirements and patient needs without creating additional work for medical staff [4]. One solution is to provide digital informed consent via video instead of using paper-based consent forms [5]. The effect of informed consent videos has been explored by various studies, but the video was treated as a supplement to the consent form, not as its replacement, which implies additional effort [6, 7, 8, 9, 10]. The results vary with regard to patient satisfaction and improved understanding, but patient perception was positive. There has been little research into its effectiveness in radiology.

Our study investigated the use of digital, video-based informed consent as an alternative to conventional, paper-based informed consent. We compared digital informed consent via video with conventional informed consent using paper forms. The study took place in a clinical-radiological everyday setting.

We formulated the following hypotheses:

- Video-based informed consent has a positive effect on patients' understanding of the information provided.
- Video-based informed consent shortens the personal informed consent consultation with the doctor.
- Video-based informed consent also results in high levels of satisfaction and acceptance among both patients and doctors.

Materials & Methods

This study was approved by the local ethics committee. The study was planned and conducted in accordance with the principles of the Declaration of Helsinki and the medical professional code of conduct, as well as the Federal Data Protection Act. To ensure data protection and data security in the context of providing video-based informed consent, we consulted the institution's data protection officer, who approved the study to be conducted in compliance with predefined conditions within the study setting.

The present study is designed as a prospective, controlled, unicentric study. Data was collected over four months from December 1, 2018 to March 31, 2019 in the radiology department of a tertiary hospital. Conventional informed consent using paper-based consent forms was compared to video-based informed consent using a tablet. Using a questionnaire, patients and doctors

rated the different methods of providing informed consent. The group receiving conventional informed consent was referred to as the control group, and the group receiving video-based informed consent was referred to as the study group. The control and study groups were recruited sequentially over two months each.

Recruiting of participants

Patients were recruited who had received informed consent consultations for a contrast-enhanced CT and agreed to participate. Emergency informed consent consultations were not included. Radiologists were identified as doctors who, during the survey period, conducted informed consent consultations about contrast-enhanced CT. Individual doctors worked for both the control and study groups.

Workflow

The study took place in a clinical-radiological everyday setting. The model of two-stage informed consent was applied [2]. In the first stage, consent forms or tablets with the informed consent video were used. The medical history form with questions about the patient's medical history was filled out on paper in the control group and digitally on a tablet in the study group.

The duration of the subsequent informed consent consultation with a radiologist was measured. After the consultation, the patients were given a questionnaire. The radiologists who provided the informed consent consultations were interviewed at the end of the survey periods. ▶ **Fig. 1** illustrates the process.

Informed consent materials:

To provide informed consent for the control group, we used the hospital's 3-page consent form (Thieme Compliance GmbH, Erlangen, Germany). A Samsung tablet was used for the study group. The patients could play the informed consent film and fill out the medical history form on the touchscreen. The informed consent film was created specifically for this study (▶ **Video 1**). To cover all of the essential content, the video was created in accordance with three CT consent forms from different manufacturers. The video consists of a screencast and acted scenes recorded in the radiology department. It also includes a film showing the workflow for a CT scan. To produce the high-quality video, we used Adobe Premiere Pro video editing software (version Pro CC 2018 (12.0), Adobe, San Jose, USA). The informed consent film was approximately 10 minutes long. This corresponds to the approximate reading time for the consent form. Patients were able to listen to the informed consent video using disposable headphones. If desired, the text could also be taken home in printed form.

The medical history form was created using Adobe Acrobat DC (Version 17.011.30099, Adobe, San Jose, USA). The questions could be answered by tapping on the tablet screen. Additional text fields were also provided. The last page of the medical history form contained the consent or refusal declaration and space for medical documentation as well as the signatures of the doctor and patient.

Questionnaire:

For the questionnaires, closed answer formats were chosen. Handwritten notes were possible. The patient questionnaire included 12 questions, and the doctor questionnaire included 8 questions. Both groups were asked to rate their satisfaction and acceptance on a scale of 1 to 6 (1: very good). The patients were also asked about their subjective understanding in six subsections: contrast agent allergy, motion artifact, alternatives, metabolic disorder kidney/thyroid, radiation exposure, extravasation. The patients were asked to indicate on a scale of 1 to 6 whether they understood the informed consent topics.

For closed questions, a six-level scale was chosen based on the school grading system, which is suitable for satisfaction surveys [11]. In addition, the even number of scale levels does not provide a neutral middle category, which can be problematic and can serve as a "substitute answer" [12]. The structure of the questionnaires is shown in ▶ **Table 1** and ▶ **Table 2**. In addition, the duration of the personal informed consent consultation was measured.

Statistics

The results were collected using the Excel statistics program (Excel 2019 version 16.0), and were presented in diagrams and tables for better visualization. Where possible, the data were evaluated statistically. The significance level was defined as $p \leq 0.05$. For time measurements, the two-sample T-test for independent samples was used. The results of the patient survey were analyzed with the Mann-Whitney U-test and the chi-square test of independence, whereas the doctor survey was analyzed descriptively and statistically due to the small group size and partial overlap between the control and study groups.

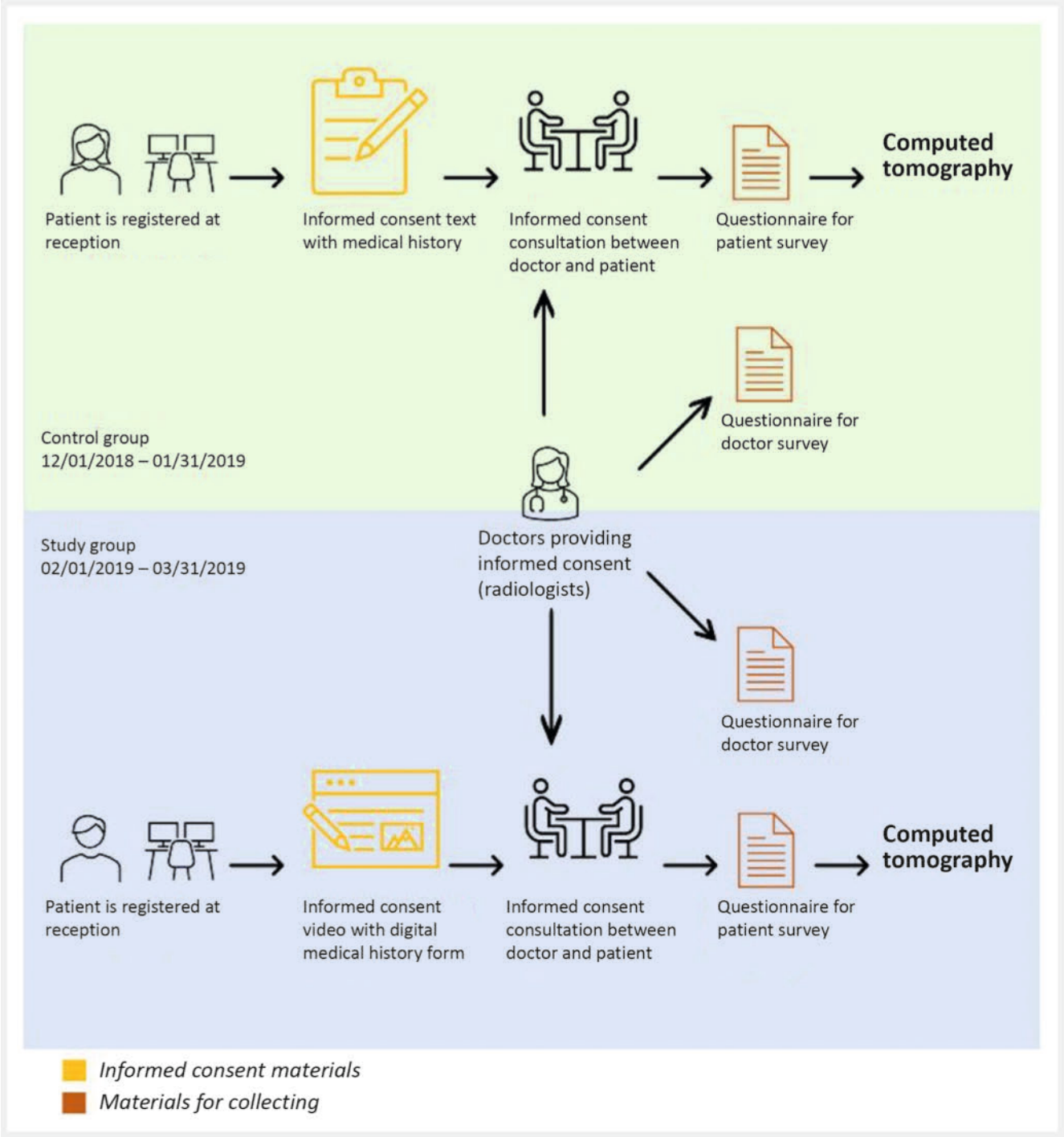
Results

Patient survey

The response rates were high (control group 89 %, study group 93 %). Questionnaires from 205 patients in the control group and 150 patients in the study group could be evaluated. The results were provided in percentages for better comparability. The gender distribution was comparable in both groups (60 % versus 61 % male). There were no significant differences in the age distribution (▶ **Fig. 2**) ($p = 0.996$). In both groups, the informed consent consultation provided at the time of the survey was not the first CT scan for the majority of patients (82 % control group, 88 % study group).

Satisfaction and acceptance

The results for satisfaction with the informed consent consultation are shown in ▶ **Fig. 3**. The modal value for both groups was category 2 (2 = "good"). Categories 5 and 6 (6 = "unsatisfactory") were not selected by any patient. The Mann-Whitney U test showed no significant difference in overall satisfaction with $p = 0.984$.



▶ **Fig. 1** Workflows for conventional and video-based informed consent consultations.

Regarding satisfaction with regard to the subtopic "risk/complications," category 1 was selected by 40 % of the control group and 26 % of the study group. The Mann-Whitney U test was statistically significant ($p = 0.029$). There were no significant differences between the control and study groups in terms of satisfaction with the other aspects surveyed (functionality/implementation $p = 0.231$; alternatives $p = 0.757$).

When asked about the acceptance of video-based informed consent in the future, the modal value of both groups was 2. The results are shown in ▶ **Fig. 4**. Category 6 is striking, with 2 % of the study group compared to 12 % of the control group. The Mann-Whitney U test showed a significant difference ($p = 0.017$).

Information retained after informed consent

When identifying the topics covered by the informed consent consultation (Question 2.2 ▶ **Table 1**), more patients in the study group remembered the six individual subsections than in the con-

trol group. Specifically, 92 % of patients in the control group and 93 % in the study group recalled the subsection "contrast agent allergy"; 75 % in the control group and 93 % in the study group recalled "motion artifacts"; 61 % in the control group and 74 % in the study group recalled "alternatives"; 78 % in the control group and 84 % in the study group recalled "metabolic disorders of the kidney/thyroid gland"; 73 % in the control group and 86 % in the study group recalled "radiation"; and 66 % in the control group and 71 % in the study group recalled "extravasation". The differences were statistically significant for the subsections "motion artifacts" ($p < 0.001$), "alternatives" ($p = 0.010$), and "radiation exposure" ($p = 0.005$).

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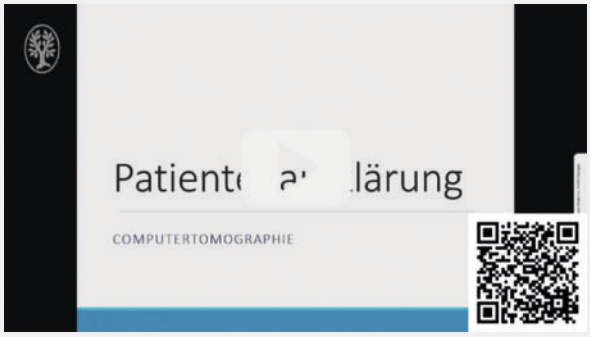


▶ **Video 1** Informed consent video created especially for this study.

▶ **Fig. 5** shows how many of the six informed consent subsections were remembered by patients in both groups.

The difference was most evident in patients who were able to remember all six aspects (control group 25 %; study group 50 %). 74 % of the study group remembered five or more items, compared to only 49 % of the control group. Four or more items were selected by 86 % of the study group and 73 % of the control group.

1 % of the study group and 5 % of the control group stated that they could not remember any of the topics covered. The Mann-Whitney U test with $p < 0.001$ ($U = 9947.5$, z-value = −4.967) showed a significant group difference regarding the number of details remembered from the informed consent.

Doctor survey

Twenty doctors were interviewed in the control group and 11 in the study group. Seven doctors were interviewed for both the control and study groups, because they worked regularly for both groups.

When asked about satisfaction with the respective informed consent method, the study group performed significantly better. The results are shown in ▶ **Fig. 6**.

Regarding the question of how much workload was perceived as a result of the informed consent consultations, the study group reported a significantly lower workload thanks to video-based informed consent. The results are shown in ▶ **Fig. 7**.

When asked about the acceptance of (future) video-based informed consent, the study group showed a significantly higher level of acceptance. The results are shown in ▶ **Fig. 8**.

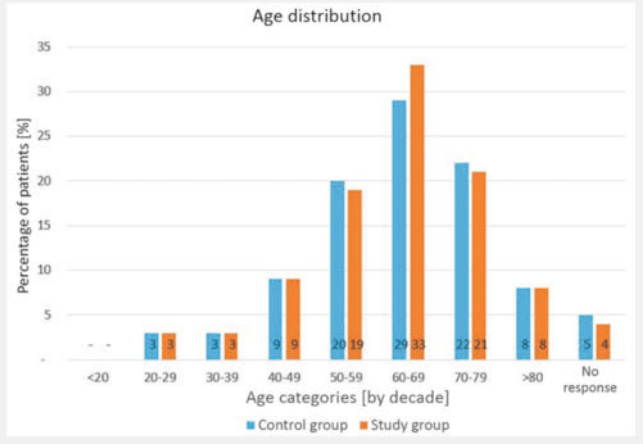
▶ **Table 1** Structure of questionnaire for patient survey.

Question sets	Items		Response mode
Personal data	Gender		binary (yes/no)
	Initial CT examination		binary (yes/no)
	Age		one answer, 8 options
Satisfaction survey	1.1)	How satisfied are you with the following subsections of the informed consent process? Functionality/implementation	one answer, 6 options
	1.2)	How satisfied are you with the following subsections of the informed consent process? Alternatives	one answer, 6 options
	1.3)	How satisfied are you with the following subsections of the informed consent process? Risks/complications	one answer, 6 options
	1.4)	How satisfied are you with the following subsections of the informed consent process? Informed consent in general	one answer, 6 options
Understanding survey	2.1)	Do you feel that you understood the content of the informed consent?	one answer, 6 options
	2.2)	What information was provided to you by the informed consent?	multiple choice, 6 options
Acceptance survey	3.1)	Could you imagine doctors providing information in the future with the help of video presentations instead of the paper forms currently used?	one answer, 6 options
	3.2)	How do you feel about the digital trend in the medical field?	one answer, 6 options
Patient feedback	Notes/comments		free format with space for notes

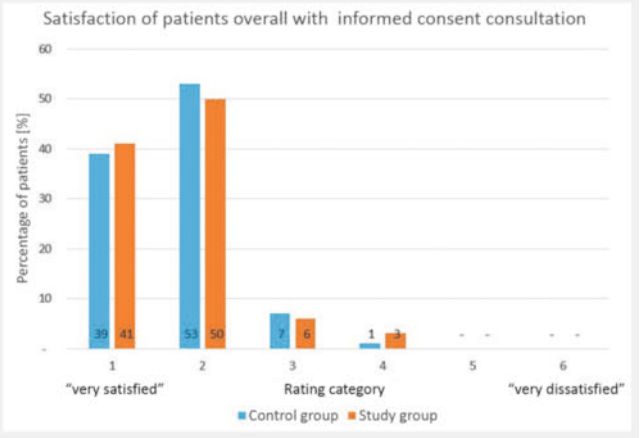
▶ **Table 2** Structure of questionnaire for doctor survey.

Question sets	Items		Response mode
Informed consent data	1.1)	How many informed consent consultations for CT examinations do you conduct during an average day *(standard paper-based and video-based informed consent consultations)***?	free format
	1.2)	How much time do you need on average to conduct a *video-based*** CT informed consent consultation?	free format
Satisfaction survey	2)	How satisfied are you with the *current*/video-based*** informed consent methods for CT imaging (*doctor obtains patient consent using paper forms*/doctor obtains consent after patient watches video***)?	one answer, 6 options
Workload	3.1)	How do you feel about the workload for *video-based*** informed consent consultation? Please check one box.	one answer, 6 options
	3.2)	How do you feel about your general workload?	one answer, 6 options
Acceptance survey	4.1)	Could you imagine providing patients with information using video presentations (instead of paper forms)?	one answer, 6 options
	4.2)	How do you feel about the digital trend in the medical field?	one answer, 6 options
Doctor feedback	Notes/comments		free format with space for notes

* Control group. **Study group.



▶ **Fig. 2** Patient age distribution in percentages for the control and study groups. Control group: n = 205; study group: n = 150.



▶ **Fig. 3** Patients' satisfaction with informed consent consultations. Rating categories from 1 [very satisfied] to 6 [very dissatisfied]. Control group: n = 203; study group: n = 147.

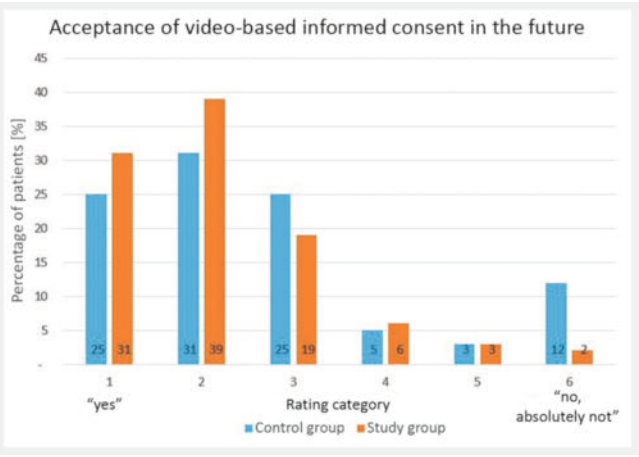
Time measurements

The duration of the personal informed consent consultation after receiving the consent form and the informed consent video was measured and compared. Time was measured for 330 conventional, paper-based informed consent consultations and 153 informed consent consultations after patients watched the informed consent video. The duration of the informed consent consultation varied from approximately 1 to 12 minutes for the conventional format and approximately 1 to 10 minutes for the video format. The mean values of the groups differed by 41.5 seconds, and the informed consent consultation after the video was significantly shorter ($p \leq 0.05$). The results are shown in ▶ **Table 3**, as well as ▶ **Fig. 9** and ▶ **Fig. 10**. The histograms show a left-skewed distribution.

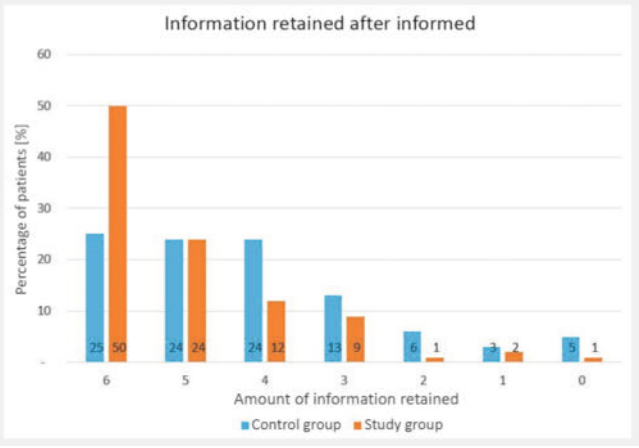
Discussion

Understanding the informed consent topics

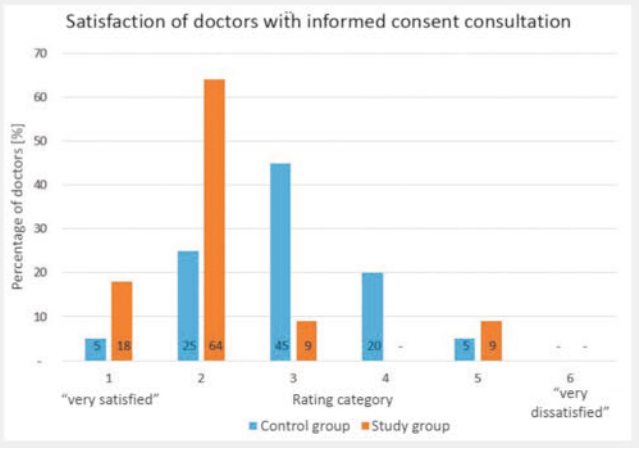
The question about the topics remembered from the informed consent consultation shows a significant advantage for video-based informed consent. For all six of the informed consent topics specified, the study group achieved better results in percentage terms than the control group. The difference becomes particularly



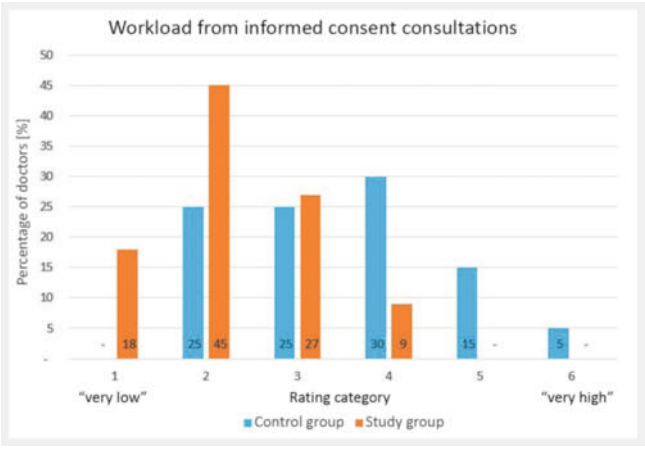
▶ **Fig. 4** Patients' acceptance of video-based informed consent in the future. Rating categories from 1 [yes, very good] to 6 [no, not at all]. Control group: n = 197; study group: n = 144.



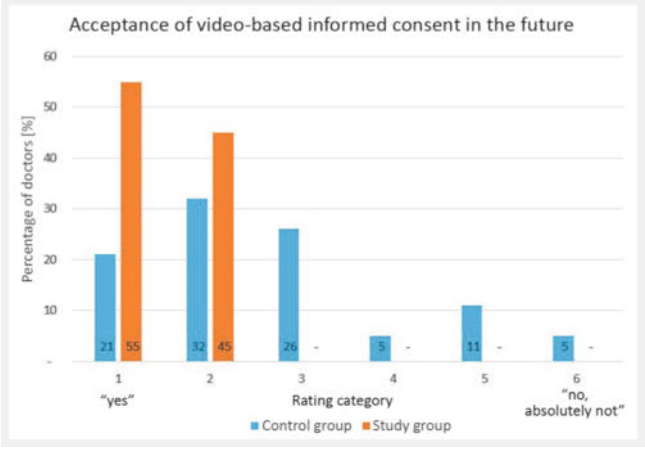
▶ **Fig. 5** Total number of topics remembered or ticked from a total of six informed consent topics. Control group: n = 197; study group: n = 147.



▶ **Fig. 6** Doctors' satisfaction with informed consent consultations. Rating categories from 1 [very satisfied] to 6 [very dissatisfied]. Control group: n = 20; study group: n = 11.



▶ **Fig. 7** Doctors' subjectively perceived workload from informed consent consultations. Rating categories from 1 [very low] to 6 [very high]. Control group: n = 20; study group: n = 11.



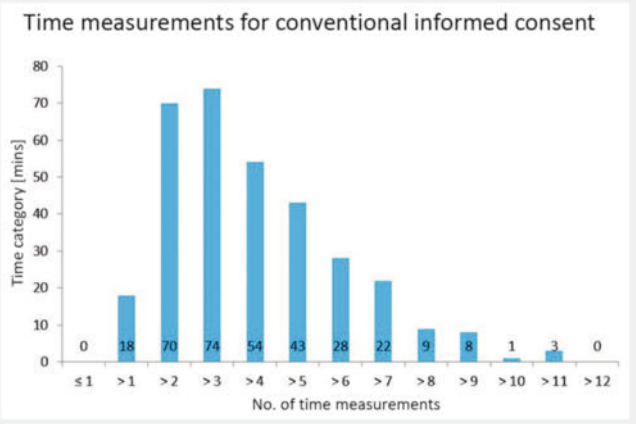
▶ **Fig. 8** Doctors' acceptance of video-based informed consent in the future. Rating categories from 1 [yes, very good] to 6 [no, not at all]. Control group: n = 19; study group: n = 11.

clear when looking at patients who remembered all of the information provided. In the control group this was 25 %, in the study group 50 %. The results from the survey regarding understanding the information provided in the informed consent consultation is of central importance for ensuring legal certainty in the informed consent process. The better a patient has understood the important topics in the informed consent consultation, the less contestable is their consent in the event of a lawsuit [13]. Furthermore, increased understanding of the upcoming treatment can, in line with the requirements of the Patient Rights Act, strengthen patient autonomy and shared decision-making. In summary, the understanding survey demonstrates that video-based informed consent promotes legal certainty and reduces medical liability due to a lack of information provided as part of the informed consent process.

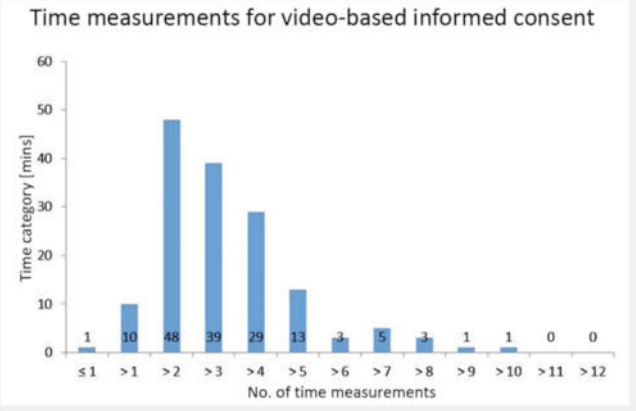
A positive impact on patient understanding was also found in other disciplines as a result of the additional auditory and visual communication of common procedures in the field of intensive

▶ **Table 3** Descriptive statistics of the time measurements for conventional informed consent consultations and video-based consultations in comparison. Control group: n = 330; study group: n = 153.

	Conventional informed consent	Video-based informed consent
No. of time measurements	330	153
Min.	63 sec (1 min 3 sec)	60 sec (1 min)
Max.	714 sec (11 min 54 sec)	611 sec (10 min 11 sec)
Average	270,209 sec (4 min 30 sec)	228,706 sec (3 min 49 sec)
Standard deviation	122,673 sec (2 min 3 sec)	98,143 sec (1 min 38 sec)



▶ **Fig. 9** Histogram of the time measurements for conventional informed consent consultations. n = 330.



▶ **Fig. 10** Histogram of the time measurements for video-based informed consent consultations. n = 153.

care medicine or in the explanation of bariatric surgical procedures [6]. In addition, Weston et al. were able to show early on in a study that patients were able to remember video-based informed consent topics better even after 2–4 weeks [14]. Video-based informed consent therefore also seems to provide a long-term advantage for patient understanding.

Duration of the personal informed consent consultation

The time saving of 42 seconds during medical consultation with video-based informed consent was significant. Assuming approximately 20–39 consultations per working day, as estimated by most doctors, this results in a daily time savings of approximately 14 to 27 minutes. Extrapolated to a 5-day working week, this would result in a time saving of 70 to 135 minutes (1.17 to 2.25 hours), and extrapolated to a month with 20 working days, this would result in a time saving of 280 to 540 minutes (4.67 to 9.0 hours). Other studies also demonstrate time savings in digital informed consent processes. Miao et al. were able to demonstrate a small but significant time saving of about 12 % for minor surgical interventions; Krüger-Brand describes more specifically the reduction in documentation effort through digital informed consent processes [5, 15].

Especially for more complex procedures, for example, in interventional radiology, video informed consent could save even more time. Audiovisual support can be particularly helpful when conveying complex topics [16]. The percentage of time saved during the consultation for the video-based CT informed consent process studied here was approximately 16 %. In comparison, Kakinuma et al. were able to achieve a time savings of approximately 34 % in anesthesiology informed consent consultations for tumor surgery by adding a video (Kakinuma et al. 2011).

Satisfaction and acceptance

Overall, relatively high levels of satisfaction were recorded among patients in the control and study groups. What stands out is that no significant difference in satisfaction between conventional and video-based informed consent was found in terms of functionality/implementation, alternatives, and overall impression. By contrast, the control group was significantly more satisfied with the informed consent information provided about the subtopic “risk/complications”. This finding is in contrast to the literature, where patients tend to prefer informed consent in video format [10]. In line with the results found here, these studies show high overall satisfaction rates for both informed consent methods, as was found, for example, in consultations for dermatologic biopsies or facial surgery [8, 17]. The results of the satisfaction survey also contrast with the improved understanding of informed consent topics and the increased openness to future video-based informed consent consultations in the study group.

Patients were not directly asked to justify their satisfaction rating, so we can only speculate about their reasons. Based on comments in the free text field, there is still room for improvement in terms of user-friendliness. It is possible that dissatisfaction with the handling of the tablet had a negative impact on the satisfaction survey in the study group. Approximately two thirds of the patient clientèle were older than 60 years. Particularly for older,

less tech-savvy patients, it may have been an issue to deal with the digital informed consent format.

It remains unclear why there was a significant difference related to informed consent regarding risks. In general, there is a desire to be well informed about risks, as Ukkola et al. were able to demonstrate in a patient survey [18]. In the study group, patients recalled more risks, which may be due to a more detailed explanation in the video compared to the oral informed consent consultation. Some patients expressed concerns after the video-based informed consent, e. g. regarding anaphylaxis or hyperthyroidism.

The acceptance of video-based informed consent can be assessed as positive. The majority of the control and study groups was open to the video informed consent. So acceptance among patient clientèle is not an obstacle to the introduction of digital informed consent. Furthermore, the study group provided a significantly more positive assessment.

Since only relatively small sample sizes could be generated for the doctor survey, the significance and generalizability of the results are limited. Nevertheless, the results of the doctor survey show a higher level of satisfaction and acceptance with video-based informed consent compared to a conventional format. Doctors rated video-based informed consent as less workload compared to the conventional format.

In summary, video-based informed consent was perceived more positively by doctors than the conventional format.

In the present study, only one tablet was used, and it was used in the field of vision of the radiology staff. If multiple tablets are used in everyday clinical practice, theft protection should be considered, in addition to costs of acquisition and maintenance. Another cost to factor in is contracts for the informed consent software. On the other hand, there are positive factors such as saving on office supplies, saving time for employees who archive the paper-based information and, last but not least, saving time for the doctors providing the informed consent consultation.

Limitations

Due to the very small sample size, the results of the doctor survey are not generalizable and are not available for statistical significance tests. It should also be noted that 20 doctors were interviewed in the study group and eleven doctors in the control group, with seven doctors being represented in both groups. A further limitation is the short questionnaire. On the one hand, the small scope increases the willingness to participate and yields a high response rate, but at the same time its shortness reduces its internal validity.

Outlook

In the future, the video-based informed consent method presented in our study could also be used for other modalities. It would also be possible to provide patients with the informed consent video and the digital consent form in advance, e. g. via QR code. This seems conceivable in the future, especially in view of the high acceptance of digital formats identified in our study, as long as data protection and data security requirements are taken into account.

Conclusions

Patients and doctors have a positive view of digital informed consent. It was easy to implement video-based, tablet-supported informed consent consultations in the doctors' day-to-day routine. Video-based informed consent improves patients' understanding of the information being conveyed and reduces consultation times, leading to more efficient use of resources.

Clinical relevance of study

- Video-based informed consent results in high levels of satisfaction, particularly among doctors.
- Patients' ability to remember the information provided was better for video-based informed consent.
- Video-based informed consent saved time during personal informed consent consultations.

Conflict of Interest

The authors declare that they have no conflict of interest.

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