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Patients preferences for communication during video consultations

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ABSTRACT

Objective The aim of our simulation-based study was to explore patient preferences for physician behaviours in video consultations

Methods: We conducted an exploratory study in outpatient setting in Geneva, Switzerland.Patients were invited to watch two variations videos of six simulated physician communication behaviours (camera framing, gaze orientation, initial talk at the opening phase, privacy reminder, pauses, empathy)and to indicate which one they preferred

Results: 417 patients watched three different video-recorded encounters. Most patients preferred framing with both face and bust (50.7 %) versus face alone (21.8 %). They valued eye gazing towards the camera (42.9 %) versus eye gazing shifting between screen and camera (13 %). The social talk related to the connection quality was appreciated (43.1 % vs 17.1 %) as well as the privacy reminder (80.8 % vs 6.5 %). Patients preferred short rather than long pauses after physician's statements (63.9 vs 14.9 %) as well as expressive rather than neutral nonverbal behaviour (46.7 % vs 17.6 %).

Conclusion: Our results confirm that patients prefer the use of video specific communication behaviours recommended by experts except for shifting eye gaze and long pauses after physician's statements.

Practice implications: Given the increasing use of video consultations, video communication "best practices"-should be systematically addressed in physician training

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1. Introduction

Telemedicine (TLM) includes remote diagnosis, treatment, care, and patient education with the use of several telecommunications tools [1,2]. Remote consultations can be synchronous (using tools such as video, telephone) or asynchronous (use of text-message, email). Telemedicine can facilitate communication among health professionals as well as between professionals and their patients by improving access to care and specialized advice [3,4]. Technological evolution has enabled a rapid expansion of telemedicine, providing healthcare professionals with new ways to communicate with their patients beyond the traditional model of in-person visits [5], by transforming personal face-to face communication [6] and creating a new health management approach and communication context [7,8], particularly for chronic diseases where videoconferencing has been found to be feasible and effective [9]. Videoconferencing has also offered opportunities for remote physical examination of patients with chronic conditions such as heart failure, [10] and with similar outcomes when used to replace or augment traditional care [11]. Experiences during the covid pandemic, during which remote consultations were more frequent, suggest that teleconsultations by phone or video may also be an effective alternative to face-to-face consultations for many patients attending primary care and mental health services [12–20].

The quality of verbal and nonverbal physician-patient communication is a critical predictor of treatment outcomes including physician-patient agreement, understanding of health problems, satisfaction with care, and patient adherence [21,22]. Many studies have analysed the quality of physician-patient communication in face-to-face consultation [23–25] but less is known on the quality of verbal and nonverbal communication in synchronous telemedicine (via videoconferencing or phone calls). It is known that compared to face-to face consultations, TLM can influence health outcomes through changes in the form and content of physician-patient communication. Indeed, the characteristics of the patient, the physician and the context of the medical consultation can influence the nature and content of the physician-patient communication which, in return, will influence health behaviours [26]. This process depends on the mode used for the consultation: in person, by telephone, by video, etc.

Studies in out-patient psychiatry suggest that there is only a slight decrease in patient satisfaction with video consultations compared to a face-to-face consultations [27], no differences in verbal content between the four modes of consultation (face-to-face, telephone, hands-free telephone and video conferencing system) and positive reactions from both patients and psychiatrists towards the use of video conferencing for the consultations [28]. Studies in internal medicine also found that content and patient satisfaction were similar for in-person and remote consultations [29–31].

Nonetheless, there is evidence that video consultations differ on a number of important dimensions than can affect the quality and outcomes of the interaction, including patient participation, decision sharing, expression of empathy, and attention to verbal cues [32]. Other studies showed that physicians and patients use more verbal cues to establish or improve interpersonal relationship in order to compensate the reduction in nonverbal cues in video consultations [33–35]. In an effort to optimize communication during video consultations, best practice recommendations have been issued by a number of experts and national medical associations (Table 1) [33,36–42]. However, there is a lack of information on patient perspectives regarding these communication strategies, and it is possible that patients may be sensitive to additional elements of the context and interactions during a video consultation.

In an effort to fill this gap, we aimed to describe patient preferences regarding physicians' communication behaviours in simulated video consultations, identify patient socio-demographic factors associated with their preferences, and explore the reasons for their preferences.

2. Methods

2.1. Design and setting

We conducted an online survey between October and December 2021 in Geneva, Switzerland.

We recruited patients from three outpatient settings that provide consultations for patients presenting with medical and trauma-related problems that do not require hospitalization: a walk-in clinic at Geneva University Hospitals (providing approximately 35,000 consultation per year), and two walk-in clinics situated in the suburbs of Geneva (each providing 26,000–35,000 consultations per year).

2.2. Participants and procedure

Patients waiting for a medical consultation who were French-speaking and over 18 years of age were invited to take part in an online survey on a tablet provided by one of 8 research assistants. Research assistants explained the study objectives and procedures, including the anonymous analysis and reporting of study findings, and obtained written consent to participate. Patients who could not read and understand French were excluded.

The study was granted a waiver of ethical exemption by the Ethical Committee of the Canton of Geneva since it did not involve collecting any personal health information (article 2 of the Swiss Federal Act on Research involving Human Beings) [43].

2.3. Development of videos displaying telemedicine-related behaviours

We reviewed the current guidelines on how to communicate during video-based consultations [33,36,37,39,40] and identified a list of six behaviours that were specific to video-based consultations or for which there was a lack of consensus among experts. Nonverbal communication behaviours included: framing of the doctor, level and orientation of eye gazing, duration of pauses, nonverbal expression of empathy. Verbal communication behaviours included confidentiality issues (privacy reminder) and initial social talk (questions about the patient's comfort and environment) (Table 2).

Five physicians (3 women, 5 men; aged 35–50 years) involved in primary care teaching were selected to act in the videos. They were of different ages (35–50 years) and gender (three women and three men). They were expected to demonstrate good communication skills independently of the use of EHR. Physicians were paired with simulated patients of varying ages and gender who work at the Geneva Faculty of Medicine, with the aim of limiting gender or age biases. Video scripts focused on 6 common complaints in primary care. The distribution of complaints, physicians and patients are shown in Table 2.

We wrote a script for each video-specific behaviour. For each behaviour, two sequences were recorded, each showing variations on the behaviour. Physician-actors were asked to closely follow the script and replicate exactly the same verbal and nonverbal communication for each of the two sequences, with the exception of the video-related behaviour variations (i.e duration of the pauses…). The simulated encounters were video-recorded from a patient perspective by a professional videographer in the presence of two investigators in order to ensure that the acting physicians respected the instructions. The sequences were repeated until the verbal and nonverbal communication displayed matched the research goals (same verbal and nonverbal communication unrelated to video-related behaviours and variations in video-related behaviours). We performed a manipulation check asking three experienced primary care physicians, blinded to the study objectives, to identify and validate the video-recorded variations of the different video-related behaviours. We also asked them to check whether the physician-actors displayed similar verbal and nonverbal communication unrelated to the video in the different sequences for each scenario.

Table 1
Expert-based, best practice recommendations regarding video consultations.

Expert-based recommendations	References
Recommendations with consensus	
Ensure professional backdrop, appropriate environment	[33,37,39,41,42]
Describe the setting and members present, ensure who is present/hearing the discussion Presentations and confirmation of patient identity (if not known)	[36,37,39,41,42]
Inquire about the patient's environment (interference, etc.)	[33,36–38,42]
Small talk (initial small talk to put the patient at ease)	[33,36,42]
Announce transitions, use active listening skills	[38,39,41]
Address confidentiality issues and privacy concerns Inform about the tool platform (recording or not, etc.)	[38,39,41]
Express nonverbal empathy (facial expression, etc.)	[33,36,37,39,41,42]
Discuss modalities for next consultation, when to consult in presence	[33,36,38,39,41,42]
Send summaries and documents by email or other electronic mean	[37,39]
Recommendations lacking consensus	
Framing	Head and bust [33,39] Face[36]
Eye gazing orientation	Camera[33,37,39,41] Screen[38,42]
Take pauses	brief pauses[33] Longer pauses [37,39]

Table 3
Patients' sociodemographic data.

	N (%)
Age (yrs)	98 (23.5)
<25	176 (42.2)
25–44	122 (29.3)
45–64	21 (5.0)
>65	
Gender	227 (54.4)
Female	
Civil status	210 (50.4)
Single	145 (34.8)
Married	57 (13.7)
Divorced-separated	5 (1.2)
Widowed	
Nationality	233 (55.9)
Swiss	116 (27.8)
Europe	27 (6.5)
South America	23 (5.5)
Africa	12 (2.9)
Asia	3 (0.7)
North America	
Occupation	16 (3.8)
Without profession	99 (23.7)
Student	217 (52.0)
Employed	30 (7.2)
Independent	22 (5.3)
Retired	15 (3.6)
Unemployed	18 (4.3)
Other	

Table 2
Physician, patient and consultation characteristics for all six-communication related behaviours.

	Dimension	Physician	Simulated patient	Topic
1	Framing	Female 50 yrs old	Male 63 yrs old	Transmission of high cholesterol blood values
2	Eye gazing	Male 47 yrs old	Male 35 yrs old	History taking of abdominal bloating and stress and work
3	Initial **social** talk (related or not to quality of **connection sound and image)**	Male 38 yrs old	Female 60 yrs old	Beginning of an encounter after 6 months without consultation
4	Confidentiality	Female 35 yrs old	Female 22 yrs old	Beginning of an encounter (afraid to be pregnant)
5	Pauses	Male 35 yrs old	Female 50 yrs old	Transmission of a positive faecal blood test
6	Nonverbal empathy	Female 42 yrs old	Female 77 yrs old	Patient distressed by her husband's hospitalization

Table 4
Percentage of patients' reasons congruent with the intention regarding video consultation behaviour.

	Behaviour	Total comments N	Congruent reasons N (%)	Examples
Nonverbal	Framing	113	26 (23)	More proximity, framing, framing more human, posture
	Eye gazing	82	4 (5)	Eye gazing
	Pauses	138	70 (51)	Less pauses/ interruptions, less hesitant, quicker, more direct
	Empathy	122	98 (80)	Empathetic, implicated, more understanding, listening more
Verbal	Confidentiality	156	87 (56)	Physician check whether patient feels free to speak, make the patient feel comfortable, check whether patient is alone
	Environment	113	38 (34)	Checks whether the patient is comfortable, check the video sound, the environment

2.4. Procedure

Participants were invited to watch three different pairs of videos presented randomly and integrated in an online survey on a tablet in the waiting room. They were asked to watch the videos as if they were the patient in the consultation. It took them approximatively 15 min to complete the survey: 10 min to watch videos, indicate their preferences, and write down the reasons for their preferences, and 5 min to answer socio-demographic information. Each set of videos included two different sequences displaying variations of the tested video-related behaviour. Both the videos and sequences were presented randomly. After watching the video set, patients selected their preference directly on the tablet (option 1 or 2 or no preference). In case of a preference, they were asked to write down the reasons.

2.5. Outcomes, and other measures

The main outcome was patients' preference among two variations regarding the six video-related behaviours. However, if they could not reach a decision, they could indicate "no preference." At the end of the survey, patients were also asked to provide socio-demographic information such as age, gender, civil status, nationality, and employment. We also recorded study location (hospital versus community emergency service) in order to account for potential location-related biases.

We also noted any reasons spontaneously offered by patients for their preferences.

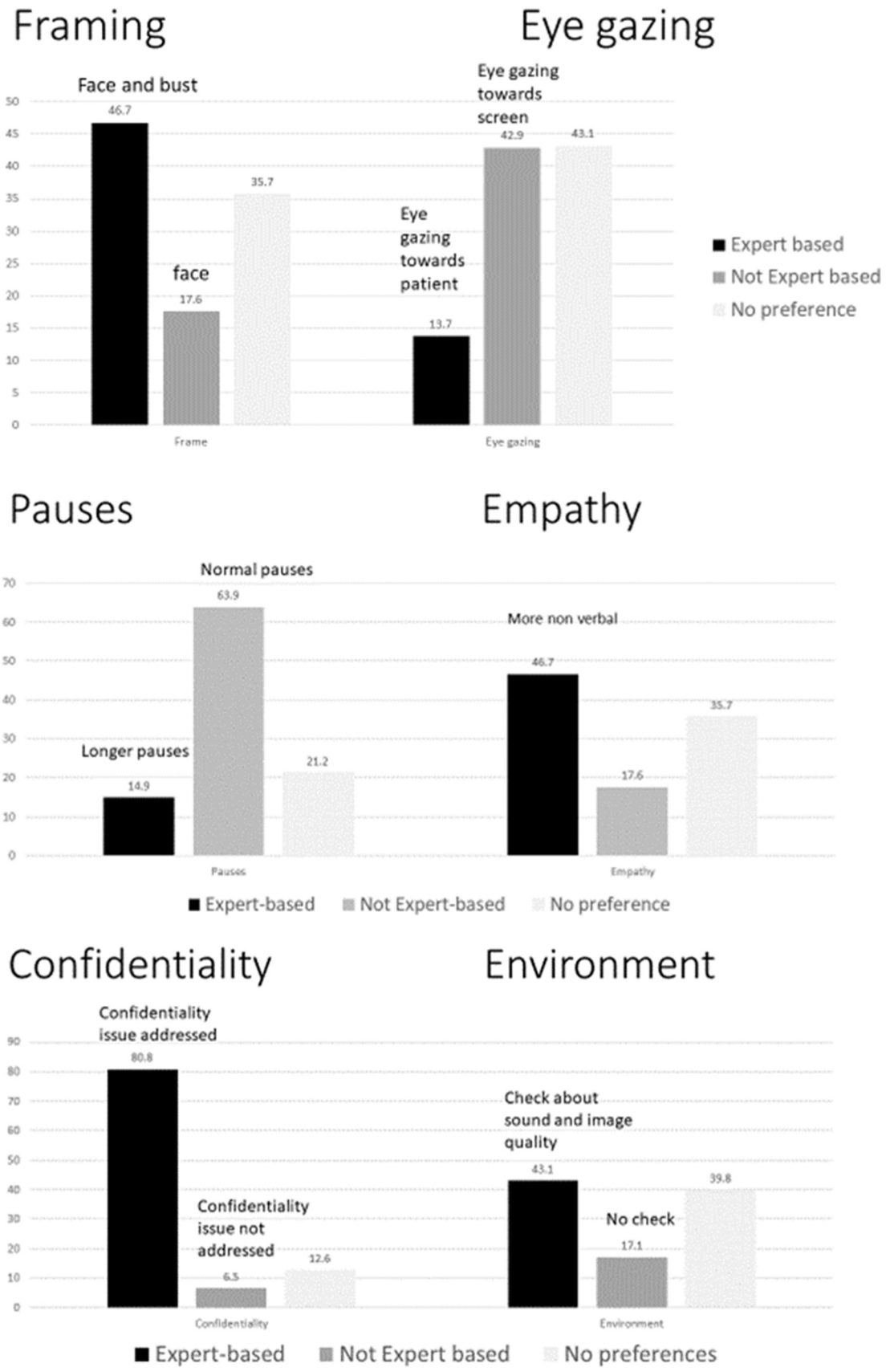

Fig. 1. Patients' preferences regarding physicians' video-specific communication behaviours (%).

2.6. Sample size estimate

We aimed for a sample size that would have a 90 % power of detecting a 20 % difference in the proportion of patients choosing a specific sequence compared to the null hypothesis (50 % of participants choose the sequence). This led to a sample size of 200 patients. Given that each patient had to assess only three of the six video sets, we doubled this number to include 400 patients.

2.7. Statistical analysis

We used Stata software version xx.0 for the analysis. We used proportions to summarize patient preferences for a sequence in each video set [44]. Difference of preferences were calculated using Chi square test with $p < 0.05$. We conducted a multivariate analysis to investigate the association between patients' preferences and their sociodemographic data.

Reasons given for preferences were analysed as "congruent" or "non-congruent" with respect to the focal behaviour in the video-recorded sequence: e.g. if a patient reported that he/she preferred the face framing because the doctor looked closer, we coded this reason as congruent since the patient's preference was related to the focal behaviour in the video; it was coded as non-congruent if the patient reported that they preferred the fame framing video because they liked the doctor's tone of voice [44]. Four investigators (SMK, MDD, PH, NJP) double coded patients' reasons for their preference (2 investigators per theme) and differences were resolved by discussion among the four investigators. Results were expressed in percentages.

3. Results

417 patients watched videos of three different standardized encounters illustrating specific behaviours (two variations of each behaviour). The majority of patients were below 45 years old, employed and of Swiss or European nationality (Table 3).

Patient preferences are indicated in Fig. 1. Patients preferred the following communication behaviours recommended by experts: framing that includes the bust and face, addressing confidentiality issues at the beginning of the encounter, making the patient feel comfortable by asking questions about the quality of the connection (sound and image) and increased expression of nonverbal empathy in response to the patient's distress. Patients did not show a preference for eye gazing towards the patient and longer pauses between sentences, which are also recommended by experts.

In multivariate analyses, non-European nationality was associated with a preference for longer pauses (OR 3.1 (1.14–8.40) $p = 0.03$) and having no preference regarding asking about the quality of the connection (OR 0.23 (0.06–0.20, $p = 0.02$).

Reasons given for preferences (Table 4) were largely concordant for the video sequences regarding nonverbal empathy behaviours, moderately concordant for confidentiality issues, and pauses. There were more discordant reasons given for eye gazing, framing and to a lesser extent for confidentiality issues.

4. Discussion and conclusion

4.1. Discussion

The aim of our simulation-based study was to explore patient preferences for physician behaviours in video consultations with respect to verbal and nonverbal communication. We found that a majority of patients showed a preference for expert-recommended communication behaviours, including framing of the bust and face, addressing confidentiality issues at the beginning of the encounter, making the patient comfortable by asking questions about the quality of the sound and image, and increased expression of nonverbal empathy in response to the patient's distress. Themes that were not chosen by patients although recommended by experts were: eye gazing towards the camera and longer pauses between physicians' sentences. The only sociodemographic factor associated with patient preferences was having a non-European nationality.

4.2. Nonverbal communication

Nonverbal behaviour, a key component of communication, includes several elements such as interpersonal distance, body position, gestures, facial expression and eye contact.[45]. Such elements have been shown to be important to understanding clinical interactions [31–33], In our study, patients' preferences for a framing of the face and the chest may be due to the fact that it closely resembles the way patients see their physician in the consultation room and allows patients to situate the physician's environment. It may also facilitate perception of nonverbal communication such as interpersonal distance, gestures, and body position that indicate to which extent physicians engage and direct their attention to patients [41].

Visual contact is another important nonverbal behaviour [46]. Several authors recommended simulating eye contact during video consultations by gazing at the camera rather than at the screen as a potential way to reinforce patient centred communication [38,41,46]. Indeed, the position of the webcam can sometimes make a mutual gaze particularly difficult. We found that a similar number of patients preferred eye gazing towards the screen or were indifferent to the type of eye gazing. Our findings differ from another study reporting that patients from both Lebanon and Japan largely favoured eye gazing at the camera and linked it to higher communication and interpersonal skills ratings [47]. Our findings may be due to the fact that the difference between screen and camera gazing in our videos was very subtle. Indeed, only a minority of patients identified that eye gazing was different between the two video-recorded consultation sequences.

Use of pauses or silence has been encouraged to facilitate patient contribution both in the gathering information and explanation phases of the consultation [48]. In video-mediated interaction, there are short periods of latency (milliseconds-long delays in image or sound) that can interfere with conversation turn-taking, [49] and therefore some experts have recommended longer pauses during physician speech to avoid misunderstanding and speech overlaps [39]. However, we found that patients did not favour longer pauses during a video-consultation about a positive occult faecal blood (colorectal cancer screening). It may be that when discussing a worrisome result, longer pauses have the potential to increase the patient's anxiety. Delays or longer pauses may also be interpreted as a problem with the video system as in face-to-face conversations, participants interact with no delay, each person speaking when the other has finished. Interestingly, Shaw et al. found that short periods of latency in video consultations were tolerated or ignored by participants whereas there was actually more overlapping talk or interruption with longer periods of latency [49]. Finally, the association between non-European origin and a preference for longer pauses between sentences may be related to the fact that non-European patients may have less command of the French language and prefer a slower information rate. Longer pauses may allow them time for translation and integration of information and facilitate trust-building between non-French speaking patients and their physicians [50].

Finally, patients in our study preferred increased expression of nonverbal empathy in response to the patient's distress displayed in the video-consultation. This is not surprising since poor body language and nonverbal communication are often mentioned as barriers to telehealth adoption [51–54]. Indeed, new technologies tend to negatively influence patient-physician communication through limitation of both patient participation and of sensory and nonverbal expressions [55]. Our findings support expert recommendations to use more paraverbal cues, gestures and active listening during video consultations to compensate the sensory and nonverbal limitations inherent to video consultations and to reinforce verbal communication.[42].

4.3. Verbal communication

The opening phase of a consultation in which the physicians put the patient at ease and identifies the topics the patient wishes to discuss, is of crucial importance. It can impact the accuracy and efficiency of the consultation as well as on the nature of the physician-patient relationships [48]. The opening phase of video consultations requires additional verbal talk in the absence of mutual gaze, handshaking and walking with the patient to the consultation room [56]. In our study, most patients preferred the video sequence where confidentiality issues were addressed and more than half gave a congruent reason for their choice. Other studies have also found that patients are concerned about security and privacy [57]. In order to respond to these concerns, experts recommend addressing confidentiality at the very beginning of the video consultation [38] by taking verbal consent for the video, proceeding to mutual identification (including naming the people present in the room) and reassuring the patient that the video call is confidential and secure [38,42].

Finally, while experts recommend checking the quality of the connection at the beginning of the consultation [41,49,58], only some patients in our study appreciated physicians' verbal attempts at small talk and questions about the quality of the video connection; a large percent of patients indicated no preference. Our findings somewhat support expert recommendations regarding checking the quality of the connection at the beginning of the consultation [41,49,58]. Indeed, some patients and physicians can experience stress at the beginning of the video encounter because of the different many steps needed to establish a connection [49,58]. Paying attention to this issue specific to video consultations is another way of demonstrating interest and respect regarding patient's comfort. The fact that non-European patients were less sensitive to this issue may be explained by the fact that they may be used to experience video calls of poor quality since internet speed may be lower in other parts of the world [59]. However, the design of the study did not allow us to test this hypothesis.

4.4. Limitations

Our study has several limitations. As this was a simulation-based study, participants were the raters of observed differences in communication styles. As un-trained raters, their impressions may have been influenced by multiple factors limiting the generalizability of our results to the real-world setting [60].

Participants were patients in out-patient waiting rooms in a French-speaking city of Switzerland who were able to understand and read French. Their preferences may not be representative of patients elsewhere. Patients were mostly younger than 45 years old and educated. We collected little information about patients' social and economic status apart from nationality, level of education, and no information about health status. Therefore, we are not able to assess the impact of social, linguistic and economic status, health conditions or health and digital literacy on patients' preferences regarding physicians' behaviour in video consultations. Patients were asked to watch the videos as if they were the patient in the video consultation, but their own health problems could have influenced their preferences. We also did not examine the influence of gender and age match between participating patients and simulated patients in the videos. However, the use of real patients as raters increased the fidelity of our simulation study.

Patients' preferences were explored through video-recorded simulated consultations addressing specific health issues (e.g., patients' preferences regarding nonverbal empathy were explored in an encounter where the patient expressed high distress, the confidentiality issue was addressed for a sensitive topic (condom break). It is possible that the topic of the consultation may have influenced patients' preferences since communication is both context dependent and goal oriented [61,62]. Nonetheless, we chose these topics because we considered that some video-related behaviours recommended by experts were specifically relevant to these clinical situations.

We only considered the socio-demographic factors of patients, but probably those of physicians also have an influence on patients' preferences. Also, our analysis did not take into account the multilevel structure of our data set. Future analyses could cluster participants based on sociodemographic characteristics and the survey location to give more insight into patient preferences.

Finally, our study design only allowed for patients' preferences as outside observers, our findings cannot be generalized to the real world where elements influencing communication are multiple and complex, including the duration and the quality of the patient-physician relationship. Future studies should be conducted during live video consultations with real patients using the different communication behaviours that were simulated in this study.

5. Conclusion

Our study suggests that patients are attentive to and have preferences for a number of physician communication behaviours that are recommended by experts for use during video consultations. Although our findings should be repeated in different contexts of care and among more groups of patients with diverse ages, cultural, socio-economic backgrounds and levels of digital literacy and cross-checked with results of studies exploring patients' preferences as actors in real consultations.

5.1. Practice implications

Given the increasing use and importance of remote consultations, video communication "best practices" should be systematically addressed in physician training.

CRediT authorship contribution statement

Sanae Mazouri -Karker : Writing - original draft, Conceptualization, Methodology, Formal analysis, Review and editing. **Noelle Junod Perron** : Writing - original draft, Conceptualization, Methodology, Formal analysis, Review and editing. And all the other authors: **Robin Luchinger**, **Olivia Braillard**, **Nadia Bajwa**, **Sophia Achab**, **Patricia Hudelson**, **Mélissa Dao-Dominice**: Conceptualization, Methodology, Formal analysis, Review and editing.

Declaration of Competing Interest

This manuscript has not been previously published and is not under consideration in the same or substantially similar form in any other peer-reviewed media. All authors listed have contributed sufficiently to the project, and all those who are qualified to be authors are listed in the author by-line. No conflicts of interest, financial or other, exist.

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Appendices

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