



When medical consultations are not face-to-face: a pilot study of patient-centred care communication during coronavirus disease 2019

Biyun Li^{1^}, Bernadette Watson^{1^}, Amos Yung^{2^}

¹Department of English and Communication, The Hong Kong Polytechnic University, Hong Kong, China; ²School of Professional and Continuing Education, The University of Hong Kong, Hong Kong, China

Contributions: (I) Conception and design: B Li, B Watson; (II) Administrative support: All authors; (III) Provision of study materials or patients: B Li, B Watson; (IV) Collection and assembly of data: B Li; (V) Data analysis and interpretation: All authors; (VI) Manuscript writing: All authors; (VII) Final approval of manuscript: All authors.

Correspondence to: Biyun Li, MA. Department of English and Communication, The Hong Kong Polytechnic University, 11 Yuk Choi Rd, Hung Hom, Kowloon, Hong Kong, China. Email: biyun-nova.li@connect.polyu.hk.

Background: Patient-centred care (PCC) is essential to quality medical consultation. PCC communication refers to how PCC principles are reflected in doctor-patient interactions. Research has shown that a doctor's ability to communicate in a patient-centred manner is positively linked to patient satisfaction and improved health outcomes. However, previous studies have focused mainly on face-to-face communication and less is known about patient perceptions of PCC when medical interactions are not face-to-face such as online medical consultations (OMCs). This pilot study aims to explore patients' perceptions and experiences of OMCs.

Methods: Participants were recent university graduates from mainland China. Sixty-three participants completed an online questionnaire designed to gauge PCC communication, which included four validated communication measures: (I) patient health willingness to communicate (HWTC); (II) doctors' consultation and relational empathy (CARE); (III) patient perceptions of participation in health consultation (PPP); and (IV) doctors' communication assessment tool (CAST). Participants provided their modality preference when using OMCs. To gain a deeper understanding of quantitative data, two supplementary open-ended questions were included where participants provided feedback on their preferences for using OMCs and discussed the advantages and disadvantages of OMCs.

Results: Correlational analysis indicated that participants' perceptions of doctors' interpersonal and communication skills significantly correlated with perceived CARE ($r=0.813$, $P<0.01$) and with patient participation in health consultations ($r=0.632$, $P<0.01$). Supporting the quantitative results, the qualitative findings revealed that while participants appreciated the convenience of OMCs, they also felt that emotional care from doctors was lacking in the online format. Specifically, participants noted that nonverbal cues, rapport building, and other relational aspects were missing, which aligns with the quantitative data linking perceived doctor communication and empathy to patient satisfaction.

Conclusions: The findings suggest that more emphasis should be placed on training doctors to practice PCC communication in OMCs especially when the interactions are text-based. The results highlight that consideration must also be given to the interpersonal and emotional aspects of care that contribute to patient satisfaction with OMCs. Overall, this pilot study reinforces that PCC communication remains integral to quality medical interactions, regardless of whether they occur face-to-face or through an online format.

Keywords: Online medical consultation (OMC); patient-centred care (PCC); doctor-patient communication

[^] ORCID: Biyun Li, 0000-0001-8653-7797; Bernadette Watson, 0000-0003-2419-7752; Amos Yung, 0000-0003-2746-4692.

Received: 08 September 2024; Accepted: 23 December 2024; Published online: 04 March 2025.

doi: 10.21037/mhealth-24-59

View this article at: <https://dx.doi.org/10.21037/mhealth-24-59>

Introduction

Patient-centred care (PCC) is a critical element of high-quality care (1). The Institute of Medicine identified PCC as a medical consultation that respects patients' preferences and values, ensuring these values drive medical decisions (2). Research has shown that PCC is positively associated with patient satisfaction and improved health outcomes (3). However, despite being a key component of quality medical care, PCC lacks conceptual, operational and theoretical clarity (4). Also, terms like PCC, patient-centredness and patient-centred communication are often used interchangeably (5,6). This study focused on the communication aspect of PCC, as it is applied and reflected through communication. PCC communication requires clinicians to deliver patient-oriented interactions during consultations (7). When patients perceive clinician communication as effective and caring, they are more likely

to be satisfied and adhere to treatment (8).

Another important aspect of patient satisfaction is the competence of clinicians. While numerous studies have demonstrated the importance of PCC communication in healthcare (6,7), it does not always predict patient satisfaction as well as the quality of care. Previous research indicated that a doctor's clinical competence is equally significant in ensuring high-quality healthcare and patient satisfaction (8). Both doctors and patients agree that communication skills are crucial for being a good doctor and can be assessed by patients (9). However, patients are generally unable to assess a doctor's clinical competence due to the significant knowledge gap in medical matters between patients and their healthcare providers (9). Being an effective communicator and rapport builder is vital for doctors and it is equally crucial for them to be competent health providers (8). Much of the research on PCC communication has focused primarily on face-to-face medical interactions, but the rise of modern communication technologies has created new channels for doctor-patient interactions that warrant examination. With technological advancement that makes online medical consultations (OMCs) increasingly common (10), it is essential to examine patients' needs in virtual medical interactions.

This trend was accelerated by coronavirus disease 2019 (COVID-19). During the pandemic, the Chinese government implemented stringent control measures to combat the spread of the virus, including isolating patients, limiting gatherings, restricting traffic, and locking down cities (11). As a result, access to face-to-face care for patients with non-COVID-19 conditions became increasingly difficult and often avoided. Thus, OMCs have emerged as a sustainable and increasingly popular alternative to face-to-face medical consultations (10).

As a subset of telemedicine, OMCs address several drawbacks associated with face-to-face consultations, offering patients a cost-effective and convenient way to access medical services (11). These drawbacks include difficulties in making appointments, long waiting times, and the heightened risk of virus transmission, particularly during the pandemic (12). Online medical care plays an important role in reducing the spread of infections by minimising the need for hospital visits (13). In China, medical

Highlight box

Key findings

- Patients value convenience in online medical consultations but lack emotional connection and nonverbal communication elements.
- Strong correlations exist between patient satisfaction and doctors' perceived empathy ($r=0.813$) and communication skills ($r=0.632$) in online settings.
- Patients identified deficiencies in rapport-building and interpersonal aspects of care during online consultations.

What is known and what is new?

- Patient-centered care communication principles positively impact patient satisfaction and health outcomes in face-to-face consultations.
- This study reveals these same principles remain critical in online medical consultations, with empathy and communication skills strongly correlating with patient satisfaction even in virtual environments.

What is the implication, and what should change now?

- Medical education should incorporate specialised training for physicians on delivering patient-centered care in virtual settings, particularly for text-based interactions.
- Healthcare systems implementing telehealth should develop strategies to enhance emotional connection and interpersonal aspects of care in online formats.

consultation platforms such as Haodaifu (Good Doctor) and Chunyu Yisheng offer multiple access points through mobile applications, WeChat mini-programs, and websites. These platforms support various communication modes, including text, image, video, and audio, making healthcare more accessible to both patients and health providers (14). Online consultations offer distinct advantages over face-to-face visits, such as overcoming geographical barriers, maintaining medical records, and enabling convenient follow-up care (10). Notably, the younger generation dominates the user base of these platforms as they are the most active population of online users (15), yet research on their specific needs and preferences in OMCs remains limited.

Although the potential of OMCs has been widely acknowledged, building rapport and engaging in PCC communication can be challenging for doctors due to the absence of face-to-face contact (10), particularly when limited to text-based messages. Also, the performance of OMCs from the patients' perspectives remains under-researched. To address this gap, our study investigates what aspects patients consider important in OMCs, their perceptions of PCC communication, and the associated advantages and disadvantages. Our goal is to provide insights into developing patient-satisfying online medical platforms, focusing on the quality of doctor-patient interaction and rapport, especially in virtual consultations.

Measuring the qualities of PCC communication

While there is no standardised measurement of PCC communication, various tools may provide insights into its components (16). We based our study on previous research using validated measures that capture patient perceptions of doctor-patient interaction. PCC communication emphasises three key aspects: (I) doctors' communication skills in eliciting and understanding patients' perspectives (16); (II) doctors' attentiveness to patients' emotional needs (17); and (III) the overall patient-centeredness of the consultation (18). To evaluate these dimensions, we utilised the following instruments: (I) the communication assessment tool (CAST) to measure patients' perceptions of doctors' interpersonal and communication skills (19); (II) the consultation and relational empathy (CARE) scale to assess patients' perceptions of doctors' emotional engagement (20); and (III) the patient perception of participation in the health consultation (PPP) scale to gauge the patients' involvement in the health consultation (8).

Willingness to communicate

Effective communication in healthcare cannot be achieved without an active patient (8). Relatedly, this study employed the robust willingness to communicate model (21). The willingness to communicate model suggests that some individuals are less inclined to communicate because they perceive themselves as belonging to a different social group from their health providers (22). In healthcare contexts, communication often occurs between social groups with distinct roles, such as "patient" and "health provider" (23). The focus on group identity means that an individual's likes and dislikes are less salient in a medical interaction than their role as a patient seeing a health provider (23). The focus on roles highlights the intergroup nature of the interaction. For this reason, it is necessary to consider the interpersonal and intergroup dynamics within health consultations (8). Given the intergroup nature of medical consultations, patients may experience anxiety and struggle to convey their messages to the doctor, leading to a reduced willingness to communicate (8). Our study investigated whether patients' willingness to communicate affects their perceptions of PCC communication. We assessed patients' communicative behaviours using the health willingness to communicate (HWTC) scale (22). Patients' reported levels of HWTC significantly affected their communication activity (22). Patients with lower HWTC tend to avoid participating in consultations, while those with high HWTC feel more at ease communicating with doctors. Building on Baker and Watson's research (22), we examined the relationship among patients' HWTC in consultations, their perceptions of healthcare provider empathy, their perceptions of participation in consultations, and doctors' interpersonal and communication skills.

In addition to the four quantitative measures (CAST, CARE, PPP and HWTC), we incorporated a qualitative component with open-ended questions to explore participants' preferences for using OMCs, and what they perceived as advantages and disadvantages. We examined how participants' qualitative responses aligned with their ratings on quantitative scales.

The present study

By adopting a mixed methods approach, we examined patients' perceptions of PCC communication in OMCs. We used the HWTC scale to assess their reported willingness to communicate, and also used three validated

measures (CARE, PPP and CAST) to measure participants' perceptions of doctors' empathy, their own participation, and doctors' communication skills in OMCs. Correlational analyses were conducted to explore the relationship among these four measures. Through both quantitative and qualitative analyses, we sought to answer the following research questions.

Quantitative analysis

- ❖ RQ1: are there differences between participants who report high versus low HWTC with doctors during online consultations in their ratings on CARE, PPP, and CAST?
- ❖ RQ2: what are the associations between HWTC, CARE, PPP and CAST in OMCs?

To gain a deeper understanding of what the quantitative data revealed, we supplemented RQ1 and RQ2 with additional qualitative questions for analysis, as follows:

Qualitative analysis

- ❖ RQ3: when do participants prefer to use OMCs and what are the advantages and disadvantages?

We present this article in accordance with the SURGE reporting checklist (available at <https://mhealth.amegroups.com/article/view/10.21037/mhealth-24-59/rc>).

Methods

Participants

This pilot study employed convenience sampling to recruit recent university graduates as participants. This sampling approach was appropriate as young graduates represent a significant demographic of digital healthcare consumers in China. Specifically, adults around 30 years of age constitute the largest group of internet users in China and are particularly active in online transactions, including healthcare services (15). Moreover, this age group's high digital literacy and frequent engagement with online platforms make them key users of OMC services (15). A total of 250 invitations were sent by the first author via email and WeChat to recent university graduates from a university in Nanjing province, Mainland China, who were native Mandarin speakers. Sixty-three graduates responded and volunteered to participate, with ages ranging from 18 to 30 years old. All participants held a bachelor of education degree. To ensure that participants were capable of completing an English-language questionnaire, we required

that their English proficiency be at least the level of the College English Test Band 4 (<https://cet.neea.edu.cn/>), which demands a vocabulary of approximately 5,500 words and is roughly equivalent to an IELTS score of 5.5.

Materials

The online questionnaire included four validated scales, a question for modality usage and two open-ended questions.

HWTC scale

The HWTC scale adopted from Baker and Watson's research (22) consisted of six items. Participants rated their willingness to communicate across five healthcare-related scenarios using a six-point scale (Cronbach's $\alpha = 0.92$) ranging from 1 (not at all willing) to 5 (very willing), with total scores ranging from 6 to 30. A sample item was, "*Speak to the doctor about my concerns about the medical treatment*". Higher scores indicate a greater willingness to communicate with doctors.

PPP scale

The PPP scale adapted by Baker *et al.* (24) (Cronbach $\alpha = 0.90$) comprised five items measured on a four-point Likert scale from 1 (never) to 4 (always). A sample item was, "*Involved me as much as I wanted in decisions about my health care*". Higher scores indicate that patients feel more involved in OMCs.

CARE scale

The CARE scale developed by Mercer (20) and this 10-item scale (Cronbach's $\alpha = 0.97$) required participants to rate the doctor's rapport on a five-point Likert scale, ranging from 1 (poor) to 5 (excellent). A sample item was, "*The doctor made you feel at ease (being friendly and warm towards you, not cold or abrupt)*". Higher scores reflect a perception of greater care and attention from the doctor.

CAST scale

The CAST scale developed by Makoul *et al.* (19) included 14 items, assessing patients' perceptions of doctors' interpersonal and communication skills during OMCs on a five-point Likert scale (Cronbach's $\alpha = 0.96$) from 1 (poor) to 5 (excellent). A sample item was, "*Greeted me in a way that made me feel comfortable*". Higher scores indicate that doctors are perceived as having stronger interpersonal and communication skills.

Table 1 Pearson correlations

	Patient HWTC	CARE	PPP	CAST
Patient HWTC	1	0.059	0.111	0.100
CARE	0.059	1	0.489**	0.813**
PPP	0.111	0.489**	1	0.632**
CAST	0.100	0.813**	0.632**	1

**, correlation is significant at the $P < 0.01$ level (2-tailed). HWTC, health willingness to communicate; PPP, patient perceptions of participation in the health consultation; CARE, consultation and relational empathy; CAST, communication assessment tool.

Modality usage

To determine the modalities used during online consultations, we asked participants to list the methods they employed in their most recent online consultation. Options included text, video, audio, and image, with participants checking all that applied.

Open-ended questions

Finally, participants responded to two open-ended questions to provide additional insights to inform the quantitative analysis.

- (I) When do you prefer to use online consultations over face-to-face ones?
- (II) What do you think the advantages/disadvantages of online consultation are?

Procedure

We utilised the online survey tool *mySurvey* (<https://www.polyu.edu.hk/mysurvey/>) to administer the questionnaire. Informed consent was given by all the participants at the beginning of the questionnaire. It took approximately 15 minutes to complete. No incentives were provided to participants. The study received ethical clearance from the ethical review board of The Hong Kong Polytechnic University (No. HSEARS20210218002) and was conducted in accordance with the Declaration of Helsinki (as revised in 2013).

Statistical analysis

For the quantitative data analysis of the scale-rating responses, we conducted Pearson correlation analyses using IBM SPSS version 27.0 to examine the relationships among HWTC, CARE, PPP and CAST. Non-responses were excluded from

the data analysis. All responses collected were complete.

Qualitative data analysis

Thematic analysis was applied to the open-ended questions, following the approach outlined by Braun and Clarke (25). Initially, the first author (B.L.) read through all the responses and organised them into a spreadsheet. Both the first (B.L.) and second authors (B.W.) then reviewed the entire dataset multiple times using inductive analysis to form initial impressions. Through discussion, they identified redundancies and agreed on the initial themes. The final themes were generated by refining and grouping the initial themes.

Results

Quantitative data

A total of 63 participants completed the online questionnaire and the response rate in this pilot study was 25% (63/250). All participants scored highly on the HWTC scale (mean =25.72, median =26.0) within a possible scoring range of 6 to 30. This result indicated that participants' HWTC scores were high and homogenous, which prevented testing the first research question comparing the high and low patient HWTC.

Refer to *Table 1* for the relationships across the four measures used in this study.

Table 1 shows a strong positive correlation of 0.813 between CAST and CARE, which was statistically significant at the $P < 0.01$ level. This finding indicates that patients' perceptions of doctors' CAST were significantly correlated with their perceptions of doctors' CARE. Specifically, the higher the participants rated doctors' interpersonal and communication skills, the more they reported experiencing relational compassion from doctors during OMCs.

There was a positive correlation of 0.632 ($P < 0.01$) between CAST and PPP. This indicated that CAST was significantly correlated with PPP. Participants who perceived doctors as having good interpersonal and communication skills were more likely to report that they were able to effectively engage in communication with doctors during OMCs.

The relationship between patient HWTC and CARE ($r = 0.059$), PPP ($r = 0.111$), and CAST ($r = 0.100$) was positive but weak, indicating that HWTC was not significantly

Table 2 Types of modalities

Modalities	No. of selections	Percentage of participants (%)	Percentage of total selections (%)
Text	47	74.6	47.5
Video	18	28.6	18.2
Audio	13	20.6	13.1
Image	21	33.3	21.2

Participants (n=63) can select all that apply, and the total number of selections was 99.

correlated with the other three measures. Given the uniformly high HWTC scores among participants, this result was not surprising and is further explored in the discussion section.

Participants' preferences of modalities (text, video, audio and image) are presented in *Table 2*. Participants were able to select all applicable options.

Table 2 indicates that the majority of participants used text-based communication with their doctor during OMCs, with the other three modalities (video, audio, and image) being less popular in comparison to text.

From the quantitative analysis, it was clear that patients' perceptions of doctors' interpersonal and communication skills significantly correlated with perceived doctor empathy in the consultations ($r=0.813$; $P<0.01$) and with patient participation ($r=0.632$; $P<0.01$). Also, this younger generation of participants preferred text-based interactions when using OMCs. However, these findings did not provide a very full understanding of the individual experiences of the participants when they experience an OMC. The aim of the next section is to unpack the perspectives of the participants with respect to their preference for OMC rather than face-to-face, and what they considered were important advantages and disadvantages of this medium.

Qualitative data

We analysed data for RQ 3 in two parts which were (I) preferences for OMC and (II) advantages and disadvantages of OMC.

Question 1: when do you prefer to use online consultations compared to face-to-face ones?

Three themes emerged through thematic analysis: (I) time constraints (n=20, participants); (II) minor illnesses (n=18); and (III) the impact of the pandemic (n=5). These three

themes are discussed in detail below.

Theme 1: time constraints

Participants reported time constraints as the most common reason for using OMCs. Traditional medical consultations were generally perceived as time-consuming, whereas OMCs were viewed as a more time-efficient method of accessing medical care. Participants appreciated the convenience of contacting doctors through online medical platforms via cell phones or computers during their spare time, without the need for long-distance travel, difficulties in making appointments, long waiting times, or the inconvenience of taking unpaid sick leave. Some participants used more than one modality during OMCs, which is indicated alongside their participant ID.

- ♦ *When I am working overtime and it's inconvenient to ask for leave, online is good (#2, text).*
- ♦ *When I don't have enough time to make a medical appointment or go to the hospital and wait for the consultation, I will use online consultation (#8, text, images).*
- ♦ *Go to the hospital can be a very time-consuming thing (#43, text).*

It was clear that the practicality of OMCs was a critical factor for these respondents.

Theme 2: minor illnesses

Participants highlighted the value of OMCs for managing minor illnesses, which was another key factor motivating their use. When dealing with non-severe conditions, patients preferred online consultations over in-person hospital visits. This not only reduced the number of patients visiting hospitals but also allowed those with more severe and urgent conditions to receive higher priority in the allocation of medical resources. For ailments, doctors on some online medical platforms can prescribe medication, which can then be conveniently delivered to patients' homes.

- ♦ *When I have an uncertain but not serious illness, such as suspecting that I have folliculitis (#26, text, video, image).*
- ♦ *When my body has no obvious discomfort but I have concerns, online consultation is a good choice (#40, text).*

OMCs offered participants with minor illnesses a choice to avoid unnecessary hospital visits.

Theme 3: pandemic impact

The COVID-19 pandemic significantly influenced participants' use of OMCs. Owing to government interventions such as city lockdown and stay-at-home orders, many patients with non-COVID-19 conditions were either unable or unwilling to visit hospitals. During that period, OMCs proved to be a practical alternative, effectively met patients' needs and overcame spatial constraints by enabling them to access

medical consultations from anywhere.

- ♦ *If it's not safe to go out, for example, during the COVID-19 epidemic, I will choose online medical consultations for sure (#11, text).*
- ♦ *Online medical consultation is more convenient and safer during the epidemic (#29, text).*

It was apparent that participants used OMCs when face-to-face healthcare services were inaccessible.

Question 2: what do you think the advantages/disadvantages of online consultation are?

The second open-ended question sought to explore not only the reasons participants chose OMCs but also their perceptions of the pros and cons. The first and second authors applied the same analysis process as used for Question 1. After thorough analysis and discussion, three themes emerged from the responses: one theme was associated with advantages and the other two with disadvantages. The key advantage was efficiency (n=32), and the disadvantages were the lack of a physical examination (n=19) and the absence of emotional care (n=16).

Theme 1: advantage—efficiency

Participants highlighted the practicality of OMCs and emphasised technical efficiency. We labelled this theme “efficiency” due to the ability of OMCs to deliver medical services with minimal time, cost, and effort. When using online medical platforms, participants found easy access, time-saving, and cost-saving as the most appealing features. In response to the increased demand, China has expanded numerous online medical platforms accessible to everyone. These platforms may help patients save travelling and queuing time and transportation costs. Overcoming spatial barriers is also crucial, particularly for patients who travel across regions to medically developed cities for better healthcare resources.

- ♦ *I think the advantages of online consultation are fast, efficient, and not restricted by region (#35, audio, text).*
- ♦ *Prescribing medication online eliminates the problem of queuing in hospitals (#33, text, audio, video, image).*
- ♦ *Online consultation is not restricted by time and space and is more convenient for office workers (#60, text, image).*

It was clear that speed-streamlined consultations were important to these participants.

Theme 2: disadvantage—no physical examination

Participants noted the lack of physical check-ups as a significant drawback of OMCs. This suggested that OMCs may serve as an effective supplement to physical medical consultations but not as a replacement. While communicating

with high-quality doctors online is convenient, physical examinations are in most cases necessary to understand and confirm a patient's condition accurately.

- ♦ *Some diseases need to go to the hospital for a comprehensive examination before they can be diagnosed (#11, text).*
- ♦ *For the observation of the condition, such as wounds or inflammation, images may not be enough for a doctor to diagnose (#8, text).*

It was evident that OMCs would not be an option for some patients, as they require a doctor's physical examination.

Theme 3: disadvantage—insufficient emotional care

Participants recognised the importance of PCC communication. Most (77%) preferred texting during online consultations because of convenience, but loss of words could limit the transmission of accurate medical information. Texting during OMCs could have restricted doctors' ability to respond to patients' worries and concerns. Unlike face-to-face consultations, the inability to see and hear patients' emotional expressions could have made PCC communication challenging in this new communication format.

- ♦ *The modalities I used in online consultation were typing and sending pictures, which was still very different from face-to-face interactions. For example, I couldn't see the doctor's facial expressions or body movements, couldn't hear the tone of voice, and I couldn't be sure whether the doctor was handling consultations with multiple patients (#10, text).*
- ♦ *Compared to the online consultation, face-to-face mode provides more eye contact (#24, text).*
- ♦ *[...] but consultation depth (understanding each other) was not enough, and the caring was insufficient (#21, text).*

Although participants highlighted the pragmatism of OMCs as highly important, they still reported that their emotional needs should be addressed.

Discussion

Using a mixed methods approach, our study examined participants' perceptions of OMCs. We investigated how participants rated their doctors' PCC communication and rapport-building competency, as well as their own willingness to participate in medical communication. We explored the circumstances under which participants preferred to use OMCs, along with their advantages and disadvantages.

Integration of findings

Thus far, this study has discussed the two methodologies

applied in this research separately. We now consider how the two sets of findings inform each other and provide insights into participants' general beliefs about OMC.

This study demonstrates that participants consider aspects of PCC communication important. Strong associations were found between patients' perceptions of doctors' CAST and CARE, as well as between CAST and PPP. Positive ratings in these areas increased patient participation in communication during OMCs. This aligns with previous research (22). Although we could not explore HWTC due to homogeneous high scores, future research should aim for a diverse range of HWTC scores to see if empathic doctors improve low-scoring HWTC participants' participation.

Supporting these quantitative findings, the qualitative results reveals that while patients appreciated the convenience of OMCs, they also may feel that emotional care from doctors is lacking in the online format. Specifically, the participants noted that nonverbal cues, rapport building, and other relational aspects were missing, which aligns with the quantitative data linking perceived doctor communication and empathy to patient satisfaction. Taken together, the quantitative correlations and qualitative themes suggest that interpersonal and emotional elements play an important role in patient perceptions of quality and satisfaction with OMCs.

The qualitative part of the study investigated when participants preferred OMCs and explored perceived advantages and disadvantages. The participants were pragmatic, emphasising convenience as the main reason for using online platforms. They reported satisfaction with OMCs for providing easy access, improving efficiency, reducing costs, and eliminating temporal and spatial obstacles. These findings highlight the crucial role of OMCs in the health system during COVID-19 in China. However, this pragmatism may be less prevalent in non-pandemic situations, warranting further post-COVID evaluations.

In addition, participants reported limitations in OMCs, notably the inability of physical examinations and insufficient emotional care. For conditions that require physical examinations, OMCs are ineffective and they are better as a supplement to face-to-face consultations. This finding aligns with literature that views OMCs as complementary (10,13).

Regarding emotional care, the participants noted insufficient empathy from doctors. Previous research emphasises that responding to emotions is a key to PCC communication and rapport (22). While the participants predominantly chose text-based consultations, they maintained expectations for emotional support from

healthcare providers. This preference among young users for written communication, coupled with their desire for empathetic care, underscores the need for specialised training in digital communication. Academic institutions should update their medical curricula to include specific training on delivering emotional support through text-based interactions, ensuring healthcare providers can meet patient expectations in this evolving digital healthcare landscape. Lastly, doctors' clinical competence and empathy should be balanced, as patients expect responses to their emotional needs (8). Our findings suggest that it is important for doctors to integrate clinical competence with empathy in OMCs.

Practical implications

Our findings highlight the importance of training doctors in PCC communication skills for OMCs. While OMCs worked well for minor illnesses and during the pandemic, effective and caring communication remains essential. Research showed that physician communication is positively correlated with patient satisfaction and treatment adherence (26). As new communication modes like OMCs emerge, it is crucial to equip doctors with these skills. Although online consultations offer short-term convenience, quality consultations should focus on the 'human' aspect of care (27).

Research implications

OMCs offer various communication modalities, with most participants opting for text messaging, differing from face-to-face interactions. Without spoken and nonverbal cues, conveying care and respect is challenging. Future research should explore how text-based interactions impact patients' expectations of doctors' competence and performance in patient-centred communication.

Limitations and future directions

This study has limitations. The sample size was expected to be 200, but only 63 invitees responded. Future research should increase the sample size and examine how this communication form affects PCC in post-epidemic periods. Owing to the small sample size, we could not obtain diverse HWTC scores, nor could we examine participants' gender, socio-economic level, or health status. Our samples primarily represented younger adults in China. Although using original English scales with English-proficient university graduates was methodologically efficient, this

approach, combined with convenience sampling, limited our study's generalisability. To build on this pilot study's findings, future research should incorporate a broader demographic range of participants through more diverse recruitment methods. Including older adults in this kind of research is especially important given the increasing use of OMCs by clinicians. The implementation of validated translations of research instruments would enable the inclusion of non-English-speaking populations. Additionally, larger sample sizes would support more robust mixed-methods analysis, providing more comprehensive insights into PCC communication in OMCs across different population segments.

Conclusions

This pilot study demonstrates that participants perceive PCC communication as crucial in quality medical consultations, including online interactions without physical presence. While patients expressed satisfaction with the efficiency and convenience of OMCs, they also desired strong PCC communication. Doctors must be aware that practising PCC communication is essential. To create a patient-satisfying online medical platform, training should be provided to help health professionals manage various OMC modalities, especially text-based interactions, ensuring efficiency and being patient-centred.

Acknowledgments

None.

Footnote

Reporting Checklist: The authors have completed the SURGE reporting checklist. Available at <https://mhealth.amegroups.com/article/view/10.21037/mhealth-24-59/rc>

Data Sharing Statement: Available at <https://mhealth.amegroups.com/article/view/10.21037/mhealth-24-59/dss>

Peer Review File: Available at <https://mhealth.amegroups.com/article/view/10.21037/mhealth-24-59/prf>

Funding: None.

Conflicts of Interest: All authors have completed the ICMJE uniform disclosure form (available at <https://mhealth.amegroups.com/article/view/10.21037/mhealth-24-59/coif>). The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. Informed consent was given by all the participants at the beginning of the questionnaire. The study received ethical clearance from the ethical review board of The Hong Kong Polytechnic University (No. HSEARS20210218002) and was conducted in accordance with the Declaration of Helsinki (as revised in 2013).

Open Access Statement: This is an Open Access article distributed in accordance with the Creative Commons Attribution-NonCommercial-NoDerivs 4.0 International License (CC BY-NC-ND 4.0), which permits the non-commercial replication and distribution of the article with the strict proviso that no changes or edits are made and the original work is properly cited (including links to both the formal publication through the relevant DOI and the license). See: <https://creativecommons.org/licenses/by-nc-nd/4.0/>.

References

1. Wong E, Mavondo F, Fisher J. Patient feedback to improve quality of patient-centred care in public hospitals: a systematic review of the evidence. *BMC Health Serv Res* 2020;20:530.
2. Institute of Medicine (US) Committee on Quality of Health Care in America. *Crossing the quality chasm: a new health system for the 21st century*. Washington (DC): National Academies Press (US); 2001.
3. Tak H, Ruhnke GW, Shih YC. The association between patient-centered attributes of care and patient satisfaction. *Patient* 2015;8:187-97.
4. Jo Delaney L. Patient-centred care as an approach to improving health care in Australia. *Collegian* 2018;25:119-23.
5. Dong K, Jameel B, Gagliardi AR. How is patient-centred care conceptualized in obstetrical health? Comparison of themes from concept analyses in obstetrical health- and patient-centred care. *Health Expect* 2022;25:823-39.
6. Stewart M, Brown JB, Weston WW, et al. *Patient-centered medicine: transforming the clinical method*. Boca Raton (FL): CRC Press; 2024.

7. Hong H, Oh HJ. The effects of patient-centered communication: exploring the mediating role of trust in healthcare providers. *Health Commun* 2020;35:502-11.
8. Baker SC, Watson BM, Jamieson B, et al. How do patients define satisfaction? The role of patient perceptions of their participation and health provider emotional expression. *Health Commun* 2021;36:1970-9.
9. Rothenfluh F, Schulz PJ. Physician rating websites: what aspects are important to identify a good doctor, and are patients capable of assessing them? A mixed-methods approach including physicians' and healthcare consumers' perspectives. *J Med Internet Res* 2017;19:e127.
10. Cao B, Huang W, Chao N, et al. Patient activeness during online medical consultation in China: multilevel analysis. *J Med Internet Res* 2022;24:e35557.
11. Zhou F, Wang Z, Mai X, et al. Online clinical consultation as a utility tool for managing medical crisis during a pandemic: retrospective analysis on the characteristics of online clinical consultations during the COVID-19 pandemic. *J Prim Care Community Health* 2020;11:2150132720975517.
12. Almathami HKY, Win KT, Vlahu-Gjorgievska E. Barriers and facilitators that influence telemedicine-based, real-time online consultation at patients' homes: systematic literature review. *J Med Internet Res* 2020;22:e16407.
13. Zhai Y, Ge X, Liu X, et al. An internet-based multidisciplinary online medical consultation system to help cope with pediatric medical needs during the COVID-19 outbreak: a cross-sectional study. *Transl Pediatr* 2021;10:560-8.
14. Jiang X, Xie H, Tang R, et al. Characteristics of online healthcare services from China's largest online medical platform: cross-sectional survey study. *J Med Internet Res* 2021;23:e25817.
15. Gong Z, Han Z, Li X, et al. Factors influencing the adoption of online health consultation services: the role of subjective norm, trust, perceived benefit, and offline habit. *Front Public Health* 2019;7:286.
16. Epstein RM, Franks P, Shields CG, et al. Patient-centered communication and diagnostic testing. *Ann Fam Med* 2005;3:415-21.
17. Pendleton D, Schofield T, Tate P, et al. The new consultation: developing doctor-patient communication. Oxford: Oxford Academic; 2003.
18. Hou J, Shim M. The role of provider-patient communication and trust in online sources in Internet use for health-related activities. *J Health Commun* 2010;15:186-99.
19. Makoul G, Krupat E, Chang CH. Measuring patient views of physician communication skills: development and testing of the Communication Assessment Tool. *Patient Educ Couns* 2007;67:333-42.
20. Mercer SW, Maxwell M, Heaney D, et al. The consultation and relational empathy (CARE) measure: development and preliminary validation and reliability of an empathy-based consultation process measure. *Fam Pract* 2004;21:699-705.
21. Macintyre PD, Clément R, Dörnyei Z, et al. Conceptualizing willingness to communicate in a L2: a situational model of L2 confidence and affiliation. *Mod Lang J* 1998;82:545-62.
22. Baker SC, Watson BM. Investigating the association between Internet health information use and patient willingness to communicate with health care providers. *Health Commun* 2020;35:716-25.
23. Watson BM, Heatley ML, Gallois C, et al. The importance of effective communication in interprofessional practice: perspectives of maternity clinicians. *Health Commun* 2016;31:400-7.
24. Baker SC, Watson BM. How patients perceive their doctors' communication: implications for patient willingness to communicate. *J Lang Soc Psychol* 2015;34:621-39.
25. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006;3:77-101.
26. Noble LM. Doctor-patient communication and adherence to treatment. In: *Adherence to treatment in medical conditions*. London: CRC Press; 2020.
27. Li J, Street RL Jr. What encourages patients to recommend their doctor after an online medical consultation? The influence of patient-centered communication, trust, and negative health information-seeking experiences. *Health Commun* 2024. [Epub ahead of print]. doi: 10.1080/10410236.2024.2383801.

doi: 10.21037/mhealth-24-59

Cite this article as: Li B, Watson B, Yung A. When medical consultations are not face-to-face: a pilot study of patient-centred care communication during coronavirus disease 2019. *mHealth* 2025;11:14.