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Research Article

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Rapid Implementation of Telehealth Video Visits in Cancer Care - The Perspectives of Patients and Healthcare Professionals

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Abstract

Background: Due to the COVID-19 pandemic, physical visits were replaced by video visits. The aim of this study was to evaluate the rapid implementation of telehealth video visits in cancer care from the perspectives of patients and healthcare professionals to gain knowledge about when physical visits can be replaced by video visits and to identify the improvements needed to optimize cancer care.

Material and Methods: Questionnaires were designed for the purpose of the study and sent out during March 2021 to adult patients (≥ 18 years) who had participated in video visits, healthcare professionals who had conducted video visits and scheduling staff who had scheduled video visits from April to December 2020.

Results: 99 patients, 17 healthcare professionals and 14 scheduling staff answered the questionnaires. Although high levels of satisfaction were reported, a need for improvement was identified. Most of the respondents were positive about continuing with video visits, which functioned better with a familiar patient in a follow-up situation, especially for those living far from the hospital, frail patients, and those in need of frequent follow-up. The necessary improvements mainly concerned technical issues pertaining to the digital platform, training and support.

Conclusion: Telehealth video visits are a good complement to physical visits and phone calls. There is a need to optimise the use of video visits regarding types of visit (i.e., new visits, during treatment, follow-up, etc.) for selected patients with improved instructions, guidelines and education as well as a safe and user-friendly digital tool.

Keywords: Cancer care; Covid-19 pandemic; Healthcare professionals; Patients telehealth video visits

Highlights

- Physical visits were replaced by video visits
- Questionnaires were sent to patients who had participated in video visits, as well as to healthcare professionals and scheduling staff
- Telehealth video visits are a good complement to physical visits and phone calls

- There is a need to optimise the use of video visits regarding types of visit

Introduction

In recent years a start has been made in replacing physical visits to outpatient care with telehealth video visits, especially follow-up visits where healthcare professionals have already seen the patient. Telehealth video visits have been shown to work well in the care of patients with diabetes and heart diseases [1] obesity [2], palliative care [3,4], colorectal cancer [5], lung cancer [6], cancer rehabilitation [7] and patients in prison during cancer treatment and follow-up [8]. Telehealth visits have been found to provide some advantages, e.g., the availability of quality care for patients who are frail or live far from a healthcare facility, leading to improved symptom management and satisfaction in patients and their families [3,4,9]. Challenges have also been encountered, where difficulties have been primarily technology-related [2,3,4]. Furthermore, patients have requested participation in decisions on how visits to healthcare should take place, i.e., physical visits or video visits [5].

When the World Health Organization (WHO) declared the COVID-19 outbreak as a global pandemic in March 2020 (https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19-11-march-2020) regular patient care was affected worldwide. In both haematological and oncological cancer care several challenges emerged, especially as based on their diagnoses and comorbidities these patients are at high risk of severe adverse outcomes and complications from SARS-CoV-2 infections [10-14]. The COVID-19 pandemic led to the need for rapid changes in cancer care provision and a search for various digital alternatives to physical outpatient visits [15,16]. Pre-pandemic, Sirintrapun and Lopez described the development of telemedicine in cancer care in 2018, the rationale for which was; the shortage of oncologists, cost efficacy and patient satisfaction [17,18]. The European Society for Medical Oncology (ESMO) issued guidelines for cancer care during the pandemic. The first statement was "Telehealth and digital health in oncology can be an excellent tool for real-time video consultations for primary care triage and interventions such as counselling, medication prescribing and management, management of long-term treatment and post-discharge coordination supported by remote-monitoring capabilities. It can also be an excellent tool for wellness interventions and in areas such as health education, physical activity, diet monitoring, health risk assessment, medication adherence and cognitive fitness." [19]. For many cancer centres the pandemic triggered the onset of rapid telemedical solutions [20-27]. Although a video visit may not differ much from a physical visit, finding solutions that safeguard personal integrity, privacy and security is important. In a physical meeting it is easy to establish who is present and the meeting room is private. With video visits, it is important to present all the participants at the meeting, even if they cannot be seen on screen. It is also vital to ensure that the patient is in an environment where she/he feels safe, comfortable and cannot be overheard by unauthorized persons [28,29,30].

Evaluation of patients' and healthcare professionals' views on video visits have been performed and high levels of satisfaction reported [11,12,22,25,27]. However, a need for improvements has been identified, such as technical aspects [18,30], training and education for patients and staff [27], as well as the choice of appropriate patients and types of visit for telehealth [19,20,22].

At the Department of Haematology, Oncology and Radiation Physics at Skåne University Hospital,Sweden, some selected physical visits with familiar patients were rapidly replaced by video visits due the COVID-19 pandemic in March 2020.

Aim

The aim of this study was to evaluate the rapid implementation of telehealth video visits in cancer care from the perspectives of patients and healthcare professionals to gain knowledge about when physical visits can be replaced by video visits and to identify the improvements needed to optimize cancer care.

Methods

Context

At the department, about 600 physical visits with cancer patients are carried out daily. The−geographical catchment area is large and includes the southern healthcare region, with almost 2 million inhabitants (31st. March 2021). Many of the patients are frail and have a journey to the hospital of up to three hours (230 km). In the period from the onset of the pandemic until May 2021, 607 video visits were registered in the department. During the study period (April to December 2020) 237 video visits were registered for 171 unique patients. This study comprises video visits completed at four outpatient clinics: Haematology including Haematopoietic Stem Cell Transplantation (HSCT), Radiotherapy/Isotope, Oncology and Cancer rehabilitation.

Digital video tool

The video visits were performed using the approved digital tool for video visits designed by Skåne Regional Council. Education and guidelines for booking and carrying through video visits were produced by the Council. To book a video visit, a secretary contacts the patient, informs about the video visit, give instructions and obtains verbal informed consent for text messages, which is documented in the patient's electronic medical record (EMR). The video visits are carried out in accordance with Skåne Regional Council's privacy guidelines through a secure connection. For the patient, the fee for a video visit is the same as for a physical visit. A text message including a link to the video visit is sent

to the patient's smartphone, although the link does not function on Huawei phones. Before the video visit the patient receives a reminder by text message. At the time of the video visit the patient clicks on the link in the text message to access a web page where she/he fills in her name and social security number before arriving in a virtual waiting room. The healthcare professional starts the video visit and can add a third party, interpreter or relative. The digital tool for video visits must be opened by the Google Chrome browser.

Participants

Swedish speaking patients ≥ 18 years who participated in one or more video visits, healthcare professionals who conducted one or more video visits and staff who scheduled one or more video visits were included in the study.

All patients who fulfilled the inclusion criteria were contacted by phone by one of the researchers with information about the study, including confidentiality, voluntariness and the possibility of withdrawing at any time, and asked if they would like to participate. Patients willing to participate could choose to answer the questionnaire via an electronic platform (application) on their smartphone or on paper. Answering the questionnaire was considered informed consent. 171 patients were identified as potential participants. Questionnaires were sent to 125 patients. Those whose video visits were converted into telephone calls or physical visits (n = 24), spoke a language other than Swedish (n = 10), had died (n = 6), declined to answer the survey (n = 3) or were missed in the mailing (n = 3) did not receive questionnaires.

Questionnaires were sent to 35 healthcare professionals who had conducted video visits on one or more occasions. Of the 35 healthcare professionals, three had terminated their employment and two were on parental leave. Healthcare professionals who conducted the video visits were physicians (n = 8), nurses (n = 1) and physiotherapists, counsellors and psychologists (n = 8). Questionnaires were also sent to 15 scheduling staff (medical secretaries, nurses' assistants) who had booked video visits on one or more occasions. The study was approved by the Swedish Ethical Review Authority (EPM Dnr 2020-04164).

Instruments

Questionnaires were designed for the study consisting of multiple-choice questions, questions about their experiences to be answered on a Likert scale (1-5) and, with one concluding open question with the opportunity to describe experiences and provide views in free text. The introduction to the questionnaires contains information about the study. The questionnaire for patients consisted of eight questions covering information prior to the video visit, perceptions of the technique at the video visit, need for help in order to take part in the video visit, positive and negative aspects, their experience of the video visit in general and their attitude to having more video visits. The authors created questions and response alternatives, these were discussed together with a few colleagues and tested within the group. The questionnaire was then sent to two patients for validation and feedback.

The questionnaire for healthcare professionals consisted of 21 questions including their perceptions of the information and instructions prior to the video visit, opinions of the digital video tool, experience of the contact with the patient during the visit, perceptions of video visits compared to physical visits and phone consultations, experiences of reading the patients' EMR during the video visit and their attitude to conducting more video visits.

The questionnaire for scheduling staff consisted of 10 questions including their perceptions of the information and instructions prior to the video visit, the necessary knowledge about technical issues to be able to inform the patient and whether patients asked for further information than that provided.

Data collection

This study was conducted during March 2021 by means of questionnaires sent to patients, healthcare professionals and scheduling staff who had been involved with video visits from April to December 2020. Processing, analysis and compilation of collected material took place from April - June 2021.

Patients who had participated in video visits received the questionnaire either digitally via an electronic platform, where the patient could answer a questionnaire via her/his smartphone, or in the form of a paper questionnaire sent by regular post including a reply envelope. Patients who did not respond received one (1) reminder.

Healthcare professionals and scheduling staff were asked by e-mail to respond to the questionnaire, which was included as a link in the message, via Microsoft Forms. Two reminders were sent to those who did not respond.

Data analysis

The answers to the multiple-choice questions have been statistically analysed and are described descriptively. All participants' answers to the open questions have been analysed by qualitative content analysis inspired by Elo and Kyngäs 2008 [31]. The answers were merged into one document and thereafter the text was read through several times. The process continued with open coding of the text, where the codes were grouped together into categories. As the data were not very rich it was not possible to achieve a deeper understanding or interpretation and therefore no subcategories were created. To strengthen the trustworthiness, both authors made a comparison between the transcribed text and the codes and categories. Consensus was achieved by discussing the categories in relation to the transcript.

Results

Patients

Of the 125 eligible patients, a total of 99 (53 women and 46 men) answered the questionnaire, giving a response rate of 82.5% (85 out of 103) for the electronic platform and 56% for the paper version (14 out of 25). The overall median age was 57 years (21-85). However, there was an age difference between the two groups, where the app-group had a median age of 54 years (21-77), while the median age in the paper-group was 69 years (42-85).

The majority of the patients experienced that they had adequate information prior to the video visit (95 of 99). Their experience of the technical aspects of the video visit was generally good (Figure 1).

Figure 1: The experience of the technical aspects of the video visit.

Most of the patients did not need any help to participate (87 of 99). In general, the video visit was a positive experience (Figure 2, left), although it was not the same as a visit to the hospital out-patient clinic (Figure 2, right). The patients answered the question "How did you perceive the video visit?" on a Likert scale from 1-5, where 1 was "very negative" and 5 was "very positive", resulting in a mean value of 4 for the group. Almost all patients (95 of 99) were willing to attend video visits again. The opportunity to give feedback and opinions in free text was taken by 65 patients and the answers highlight both positive and negative aspects.

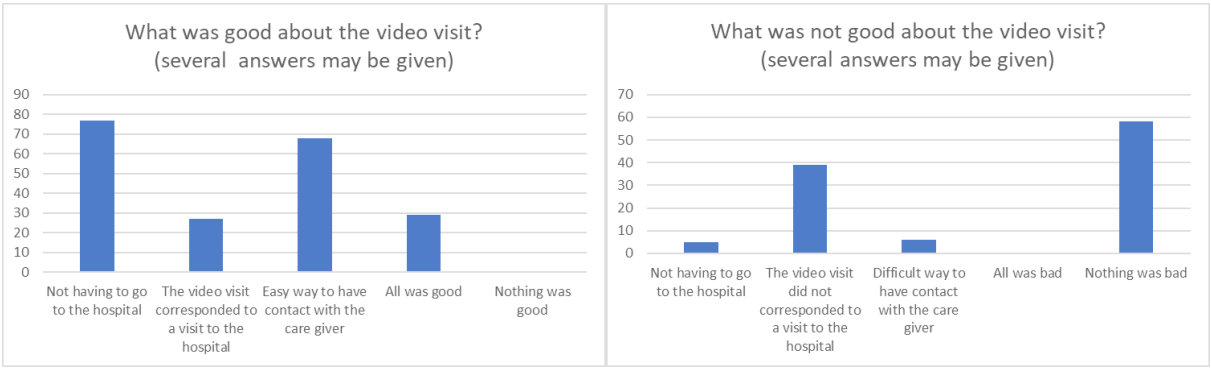

Figure 2: Patients' views on positive and negative aspects of video visits.

Healthcare professionals

13 women and four men answered the questionnaire, which was sent to 30 persons (response rate 57%). Their median age was 49 years (34-65). The majority had conducted seven or more video visits (14 of 17), while one had conducted five visits, one four visits and finally one had conducted a single visit. Two questions concerned the information/instructions prior to the video visit. The majority (15 of 17) had read the instructions before the first video visit, while one had read part of the instructions and one had not read them at all. Twelve persons felt that they had the necessary information prior to the visit, while five considered that they lacked information. Three questions concerned the digital video tool, which was experienced as acceptable by 11 and as poor by six persons. The image quality to be used for, e.g., visual inspection of the skin, was perceived as more or less sufficient by 13. Three experienced the image

quality as poor, while one considered it totally adequate. Nine of the respondents needed help with the video visit technique, while the other eight did not. Regarding contact with the patient, the respondents answered on a Likert scale of 1-5, where 1 was very poor and 5 was very good. The mean value for the responses was 3.4. Another two questions concerning the contact with the patient during the visit were posed and the responses are presented in (Figures 3 and 4).

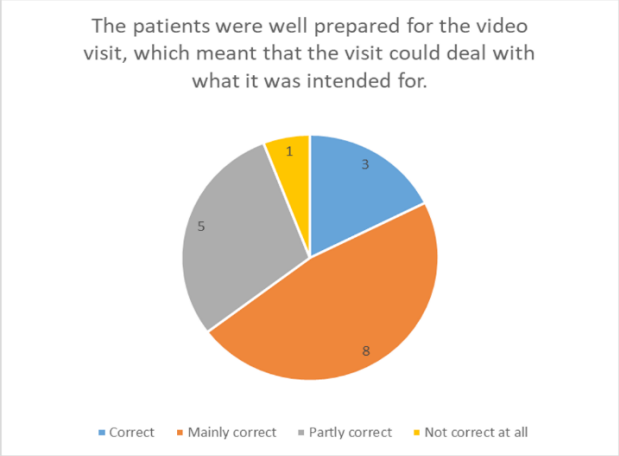

Figure 3: Healthcare professionals' perception of patient preparedness for video visits.

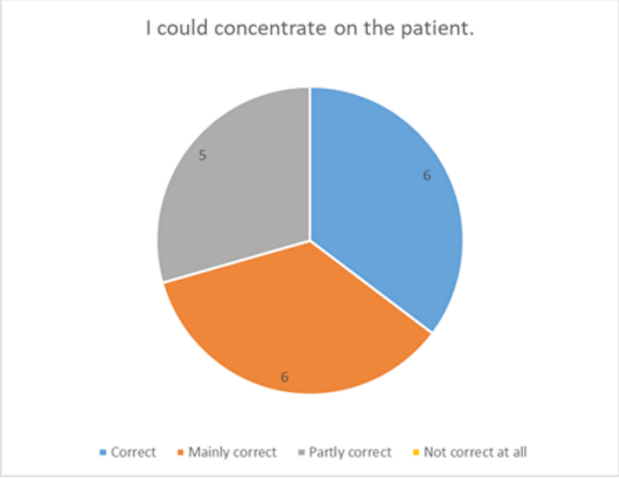

Figure 4: Healthcare professionals' concentration during video visits.

On the question about whether reading the patients' EMR during the video visit had functioned well, four answered correct, four mainly correct, eight partly correct, while one stated not correct at all. All respondents felt that the time allocated to the visit was sufficient. One respondent believed that a video visit could replace a physical visit, nine considered this partly correct and seven stated that a video visit could not replace a physical visit. This opinion did not differ between physicians and rehabilitation staff. The video visit was considered to add more than a phone call by six of the respondents, eight agreed that it was mainly correct, eight that it was more or less correct and one that it was not correct at all. 13 of the 17 respondents had conducted video visits with a third party. The experience of the video visit was graded on a Likert scale from 1-5, where 1 was very negative and 5 was very positive. The mean value for the group was 3.2. The healthcare professionals assessed that the patients experienced the visits as good (5 of 17) or acceptable (12 of 17). All the respondents were willing to perform video visits in the future. The opportunity to give feedback and opinions in free text in the open question was taken by 16 of 17 healthcare professionals, whose statements illuminate positive as well as negative experiences.

Scheduling staff

14 (12 women and two men) of 15 responded, giving a response rate of 93%. Their median age was 51 years (29-65). Eight were medical secretaries and six were nurses' assistants. Most had scheduled seven or more video visits (7), five had scheduled five visits, one four visits and one had scheduled a single visit. The majority (13 of 14) had read the instructions before the first call to schedule a video visit. One had read part of the information. A majority (13 of 14, 93%) also felt that they had the necessary information to be able to inform and instruct the patient, while one felt that she/he did not. A majority (11 of 14) stated that they had the necessary knowledge about technical issues to be able to inform the patient, while three reported that they did not have enough information. According to 12 of the respondents, the patients did not ask for any further information than that provided. However, two respondents received questions from patients. The opportunity to give feedback and opinions in free text was availed of by 8 of 14 scheduling staff, where the statements reveal only negative aspects.

Experiences of the video visits

The findings from the open questions from patients, healthcare professionals and scheduling staff are presented in the following six categories coded according to the content in the responses: *Inadequate and difficult technique, Difficulties in the encounter between the healthcare professional and the patient, Good as a complement and in certain situations, Inadequate information, instructions and support, Lack of clarity when scheduling the video visit and Wishes for the future.*

Inadequate and difficult technique

Patients, healthcare professionals and scheduling staff all reported having problems with the technique for video visits. The time involved to inform and schedule patients was experienced as long. The link to the visits could only be sent as a text message to the patients' phones, which meant that most patients attended

the video visit on their phone, which implied a small screen with difficulties to see the healthcare professional. The problems with the technique often led to switching to telephone calls instead. The technique was especially difficult for older people. There was also the problem that it did not work for all types of phones or browsers. The quality of the image and sound was often experienced as poor, and the image the healthcare professionals had of the patient was rather small, which made it difficult to pay attention to emotional expressions and to look at and examine e.g., the patient's skin. The quality of the images was even poorer when three persons attended the visit. There were no possibilities to share screen, which would be desirable, e.g., to read the patient's EMR together. There was also no possibility to connect a digital interpreter. When the patient had logged into the visit, he/she arrived in a virtual waiting area, however there was no possibility of communications between health professional and patient, e.g., when they were behind schedule, which was stressful for both parts.

Difficulties in the encounter between the healthcare professional and the patient

Patients as well as healthcare professionals experienced difficulties in their encounters, many expressed that it was "not the same as a physical visit". The most problematic difficulties were experienced with physiotherapeutic instructions, and physical examinations were difficult, or impossible. Video visits were also not suitable for first visits or for providing negative information, and it implied an impaired emotional contact.

Good as a complement and in certain situations

Even if video visits were not experienced as the same as a physical visit, many patients and healthcare professionals expressed an appreciation to the possibilities of having video visits as a good complement to physical visits and phone calls, when the technique worked. It was experienced as a good solution during the pandemic. Situations when it was experienced as good and suitable was at visits including information, advice, and follow-up, for patients suffering from fatigue and/or for patients living far from the hospital. It was also great that relatives could be present at the visits.

Inadequate information, instructions, and support

Healthcare professionals and scheduling staff expressed difficulties in finding information and instructions about video visits for patients and as well as for healthcare staff, and it was difficult to obtain technical support. Scheduling staff expressed wishes that it should be possible to send instructions to patients in the same text message as with the link to the video visit, which wasn't the case. There was also unclear information on billing details, which was confusing and time consuming for the scheduling staff.

Lack of clarity when scheduling the video visit

Various difficulties were experienced by the scheduling staff when scheduling the video visit. The problems concerned healthcare professionals' ID, lack of a logical system for rescheduling a visit, that the meeting link could only be sent as a text message (phone) and not by e-mail and they expressed a wish to be able to schedule a visit for more than two persons (phones).

Wishes for the future

Patients, healthcare professionals as well as scheduling staff expressed wishes for video visits in the future and suggested improvements. The staff wanted more training and better technique and application, and available support. They also wished it to be possible to send instructions in the same text message as the one with the link to the video visit, and the possibility to send the link to the video visit by e-mail. Patients as well as staff expressed an opinion that video visits should be less costly than a physical visit, which was not the case. Patients came up with suggestions for improvements in the use of video visits, such as digital meetings with support groups and a better use of the camera and patients' gadgets, like smart watches and blood pressure equipment.

Discussion

We selected those out-patient clinics that had performed the most video-visits, approximately 1/3 of all our out-patient visits. We have several out-patient clinics that have not used video-visits at all or very sparsely. Those who used the tool sparsely indicated technical problems as a reason for not using the system, and as support, as well as time, was scarce, they returned to phone calls. Those who used the tool more frequently, used those colleagues who learnt quickly, to act as local support, thereby getting up to speed faster. This is valid for both healthcare professionals and scheduling staff. This could be an indication for the need of local support and the need to aid each other as colleagues also with technical issues.

The tool was created quickly in our region with great emphasis on safety. This meant that we were not allowed to use software like Microsoft Teams, or Zoom for patient contact. Other authors have presented a slacken of safety measures, considering software, to quickly and easy change from physical visits to video visits [20,23,32,33].

The experience of patients and healthcare professionals with video visits was evaluated and although high levels of satisfaction were reported, the need for improvement was also identified. There was a high response rate among patients using the phone application. It is gratifying that so many patients are willing to participate in a small study like this one, but it also highlights the benefits of using the phone application for surveys.

The response rate of the scheduling staff was also very high, but the poor response rate of the healthcare professionals was quite disappointing. The two staff groups received their questionnaires via e-mail followed by two reminders. Perhaps the low response rate is due to the fact that healthcare professionals have a high workload or are less interested in participating in such surveys. We were unable to obtain the views of patients who declined video visits, as such data were not registered, and did not separate the different out-patient clinics or professions due to the small number of participants.

We found that most of our respondents are positive about continuing with video visits. As seen in other studies, the visits function best with a familiar patient in a follow-up situation [19,34,35]. They are especially beneficial for those living far from the hospital and those in need of frequent follow-up, as confirmed in other studies [19,20]. For many of our patients it saved both time and money when some of their physical visits were changed to video ones. Some technical issues have arisen regarding the digital platform we use, several of which have been reported by others such as difficulties connecting or interrupted calls [36], waiting time in the virtual waiting room [36], billing issues [33] and integration with EMR [33]. Other issues are the need for better preparation, staff training for those informing the patients as well as for those conducting the video visits. It is also very important to clarify who is present on both sides of the camera to safeguard personal integrity and privacy, as has been shown in earlier studies [28,29,30]. The importance of training has also been highlighted by others [37]. This is also true in our setting as some of our put-patient clinics have none or very few video-visits due to technical problems or unfamiliarity with the system. Our physiotherapists remarked that providing instructions concerning movements is difficult. This might have been easier had the link also been sent via e-mail and the patient could connect from a computer or tablet with a larger screen [37]. Patients as well as healthcare professionals pointed out that the virtual waiting room is stressful. Communication between the caregiver and the patient in the virtual waiting room is not possible in our digital tool, e.g., if the caregiver is delayed the patient has no indication whether she/he is online or disconnected.

The ideal situation in the clinic

There is a need to optimise the use of video visits, i.e., types of visit, selected patients such as those who are frail, live far from hospital or are in need of frequent follow-up. What is whished for is; Instructions for the digital tool and guidelines for the video visit are important and must be easy to understand and access. The guidelines should include a technology check and introduction, during which it is confirmed that the patient is comfortable with the setting and participants. The visit continues in the same way as a physical visit, finishing off with a summary. This is very well presented by Banerjee et al. 2021 [28]. A success factor for the utilisation of video visits could be education and training of "super-users" at all out-patient clinics, who can help colleagues and guide new patients on how to perform a visit via video. A digital tool for video visits must be safe, but also user friendly for both patients and staff. It should be possible for several participants to be connected, allowing e.g., a relative to be connected from a different place to the patient. It should also be possible to connect via either smartphone or computer. The virtual waiting room is a crucial part of the digital tool, where two-way communication should be possible.

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