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ORIGINAL RESEARCH

Video and Telephone Calls as a Strategy to Improve Communication Between Patients in the Intensive Care Unit, their Relatives, and Treating Physicians

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Abstract

Background: Patients affected by COVID-19 required physical/social isolation due to the transmissibility of SARs CoV-2. As a result, those treated in healthcare facilities often suffered loneliness due to a complete separation from loved ones. Additionally, human contact and movement were restricted to contain the spread of disease. By focusing on a patient- and family-centered model, this study aims to minimize the impact of social isolation in hospitalized patients by implementing regular doctor-led video conference calls with family members and video calls between the patient and family members when feasible.
Methods: This observational descriptive study used qualitative variables to analyze information obtained from virtual focus groups consisting of medical professionals or family members of hospitalized patients in the Eugenio Espejo Hospital (EEH) ICU in Quito, Ecuador. Each video call allowed the authors to assess anonymous opinions concerning communication methods utilized during daily clinical updates in the ICU.
Results: There was increased satisfaction among family members and medical professionals with the implementation of video calls compared to traditional telephone calls. A contrast between the time before and after implementing the telehealth team was observed in at least five characteristics: (1) the general telehealth experience, (2) the clarity of the messages, (3) the quality of care, (4) the sense of comfort, and (5) the improvement of communication.
Conclusions: There was a positive effect on communication quality for family members and medical professionals, increasing their satisfaction in terms of finding new methods to reduce the social isolation enforced by the current pandemic. Nevertheless, the future role of virtual communication remains undefined as we return to individualized face-to-face meetings.

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Three years ago, intensive care units (ICUs) dealt with an extreme influx of patients severely affected by respiratory syndrome coronavirus (SARS-CoV-2) infection. The pandemic became a serious challenge for healthcare professionals, particularly in healthcare units with insufficient equipment, personnel, and/or financial resources.

Hospitalization became a synonym for isolation and the inability to communicate between patients and their families.[1] As a result, those hospitalized in healthcare facilities often suffered loneliness due to a complete separation from their loved ones.[1] Additionally, human contact and movement were restricted to contain the spread of disease. When this kind of restriction is implemented, the "Guidance for Managing Ethical Issues in Infectious Disease Outbreaks" states that it is necessary to provide people with "effective alternative communication strategies".[2] Stakeholders for this relief include, in

addition to patients, their families and the health personnel assigned to triage units, emergency rooms, and ICUs.[3]

The COVID-19 pandemic halted the lives of millions of people around the world and is responsible for causing more than 675 million confirmed cases and almost 7 million deaths globally by March 2023.[4] Due to the contagion of the COVID-19 virus, patients affected by this disease and hospitalized in healthcare facilities often need to be isolated from their loved ones and receive treatment or die by themselves without any family member able to accompany them in their suffering.[5,6] A significant number of times, family members or other close contacts of the patient were highly likely to be infected with the virus and, if not, would be at risk of being infected if allowed into their loved one's environment.[7]

Furthermore, allowing family members to visit would have squandered a limited resource, personal protective equipment (PPE).[7] Preventive measures such as PPE hinder communication as the patient cannot correctly identify medical staff behind a mask, shield, and gown.[8] Therefore, the relationship and interaction between the patient and the family with healthcare professionals were dramatically altered.[6] Most COVID-19 patients at the beginning of the pandemic survived or succumbed to this illness while being separated from their loved ones.[9]

Communication and prognosis discussions, which traditionally occurred face to face, were limited.[10] This led to a disruption in the usual grief and bereavement process of patients and family members.[5,11]

Establishing new strategies for communicating with families was an important component of the patient's treatment, not only for their overall recovery but also to reduce fear and anxiety among them and their families.[12] In this context, virtual communication was assumed to be an effective alternative to address the closed contact restrictions imposed by health authorities to reduce disease spreading through ICU visitation.[11]

In Ecuador, before the COVID-19 pandemic, family members of hospitalized ICU patients could visit the unit and see their loved ones while receiving clinical updates directly from the intensive care physicians managing the patient. However, visitor restrictions were implemented due to contamination prevention measures, and this visitation was suspended.[13] Most patients who entered the Eugenio Espejo Hospital (EEH) due to COVID-19 did so through the emergency department and were sometimes transferred directly to the ICU according to the severity of their illness. In some cases, they were immediately placed on mechanical ventilation. The EEH is a tertiary level and national reference hospital.[14] It has a hospitalization capacity for up to 416 patients in its different areas, specifically 23 in intensive care.[14]

The goal of this study was not to evaluate the overall satisfaction of family members with ICU equipment, to assess medical personnel performance and treatment success, nor to test the usefulness of a former or new questionnaire, as has been considered in current literature.[12,15–19] We aimed to provide humanitarian virtual communication to family members and ICU patients treated for COVID-19 in the EEH and evaluate its effectiveness. Others have addressed this challenge from the needs of their institutions.[20–24]

Success in our efforts was defined by minimizing the impact of social isolation in hospitalized patients by focusing on a patient- and family-centered model through the implementation of regular doctor-led video conference calls with family members and video calls between the patient and family members when feasible. To this end, the authors assessed the opinions and reactions of healthcare workers in the ICU and on telehealth duty, as well as family members of patients hospitalized due to COVID-19. Specifically, we evaluated the satisfaction threshold of family members and medical professionals before and after the implementation of video calls and identified the pros and cons of video calls compared to the traditional method of telephone calls.[20]

Methods

This observational study took place during the first 6 months of the COVID-19 pandemic in Quito, Ecuador (March-September 2020) and assessed the importance of establishing virtual communication to maintain patient-family contact during ICU visitation restrictions. Our study implemented three categories of focus groups: medical doctors working in the ICU (three groups), medical staff on telehealth duty (one group), and patients' relatives (seven groups with 46 family members in total).

This observational descriptive study used qualitative variables to analyze the information obtained by virtual focus groups via Zoom and WhatsApp calls, consisting of medical professionals or family members of hospitalized patients in the ICU of the EEH. These specific messaging applications were chosen due to the absence of additional costs for their use, which ensured their overall accessibility. Additionally, they are widely used in Ecuador, and most of the population is familiar with their functionality, thus ensuring effective and barrier-free communication for all participants.

Each meeting of focal groups allowed us to assess anonymous opinions concerning communication methods utilized during the delivery of daily clinical updates in the ICU. In addition, suggestions to optimize the connection between patients, their families, and healthcare workers were collected. To preserve their confidentiality, we did not collect any personal information from the participants.

The focus groups were divided into three main sections: one for ICU treating physicians, one for physicians on telehealth duty, and one for relatives of ICU patients.

The medical team had 20 physicians who were subdivided into 17 intensivists who were actively working in the ICU of the EEH and were in direct contact with patients and three intensivists who were outside the unit working on telehealth (communicating with the families), thereby reducing the workload of their coworkers in the ICU. The medical professionals participating included all physicians working in the ICU at the point of implementation of this study. The group consisted of both men and women of varying lengths of time of professional experience. In total, there were 13 men and seven women. These groups did not include nurses or other allied healthcare professionals because, in Ecuador, only doctors are allowed to provide information about patients to their family members. On the other hand, the focus groups aimed at family members had seven groups of around seven participants per group.

Participants were divided into two main categories: doctors and family members. As it was not feasible to bring all doctors together simultaneously, four subgroups were created, each composed of four, five, five, and six people, totaling 20 participating doctors. The first subgroup was exclusively made up of doctors performing telehealth, while the other three subgroups included all doctors working in the ICU. These sessions were held at night to avoid interfering with their daytime responsibilities. They lasted for about an hour to a maximum of two.

In the case of family groups, equal divisions were made to ensure that everyone could express their opinions equally. These groups were carefully organized to encourage active participation from all members. The study lasted 3 weeks. During the first week, sessions were held with the physicians, meeting with a subgroup daily. The next 2 weeks were dedicated to meeting the family groups, and the session schedule was adjusted based on the participant's availability.

This planning allowed for effective and meaningful interaction with each group, respecting the doctors' work obligations and adapting to the family members' agendas. During the first week, we worked with groups of doctors. The first group was constituted by three doctors outside the ICU and outside the hospital who were teleworking. The other three groups were four to five doctors working in the ICU. In the second week, we began with three groups of relatives, and in the third week, it concluded with four groups of relatives. At no time were two groups made on the same day; in addition, every focus group had a duration slightly longer than 1 h and included at most eight participants.

The evaluation was carried out through dialogue with treating physicians and the relatives of patients in the ICU. The focus groups were facilitated by a team of three highly qualified individuals in their respective fields. This diverse team included a medical anthropologist, a public health doctor with a doctorate, a doctor specializing in pulmonology, mental health, and critical care, and a general practitioner who was a research assistant. This group's combination of skills and knowledge provided a comprehensive perspective during focus group mediation, ensuring depth exploration and complete understanding of the topics discussed.

In the focus groups, an interview guide (Appendix) was employed that consisted of 18 questions oriented to analyze the uncertainty of the relatives, the quality of communication, the type of information provided by the treating physicians, the language used, hours of call, explanation, and understanding of the evolution of the patients, and the management of the death process. The interview was conducted in Spanish, as all participants spoke this language. This choice ensured effective communication by allowing participants to express themselves clearly and comfortably. Furthermore, we evaluated whether the use of technology can optimize communication between patients, their families, and the healthcare team. This included comparing telephone calls, where family members can only hear the practitioners or their loved ones, and video calls, where they could both see the patient and hear the update.[20]

The connection between the ICU staff and the researchers was made possible due to the director of the ICU at EEH. In contrast, the interaction between the family members and the researchers was facilitated by a phone number list provided by the physicians working in the ICU. The involvement in this study was not compensated, and all adult men and women participants were enrolled voluntarily. In every focus group, the research objectives were explained initially, emphasizing confidentiality for all participants and explaining the need to record every video call for later transcription and analysis. This study was approved by the Institutional Review Board of the Universidad San Francisco de Quito (#P2020-088M).

At the end of every shift, healthcare workers wrote the patient's clinical evolution in a blog or registry. The three physicians working in telehealth were not in direct contact with the patient and used this registry to make the video call with the family. This registry did not include detailed events and nuances occurring in the ICU, only the most important clinical information needed for the next shift.

Results from Healthcare Givers' Perspective

This new communication strategy was assessed during our study through weekly focus groups where the physicians working in the ICU talked about some perceived advantages and disadvantages regarding the implementation of the telehealth team and their video conference calls with family members. Some doctors stated it was often difficult to ensure the delivery of accurate information to family

members when the telehealth attending was not present on rounds or in direct contact with the patient.

Furthermore, some physicians working in the ICU considered that information management quality can be improved and is of utmost importance in transmitting data on the evolution of the patient's condition within the hospital.

Other doctors considered the telehealth group helpful because it reduced the unit's workload and made it easier to reach family members. This reduced the long hours of communication that characterized the clinical evolution reports made before this strategy was implemented. Moreover, ICU physicians appreciate that, with the implementation of a telehealth team, they have more time to invest in patient care.

Additionally, it lessens the probability of contagion by diminishing the times that they need to leave the ICU and change PPE. In the case of the implementation of video calls between the family members and the patient, the medical personnel in the ICU believe that it is a mechanism that generates peace in the patient and their family. Nowadays, video calls are an important communication method because the family can virtually verify the patient's progress.[20] Nevertheless, they also mention that the video call was challenging for family members who hope to see their relative fully recover. Not all are prepared to see their loved one in an extreme situation. Thus, using this method involves a period of adaptation by the family, who must be informed about their relative's conditions.

The reports from the physicians working in telehealth considered advantages like consistency and a set time to be in contact with the family that was easier to define, increasing trust and communication. When asked about the level of satisfaction with implementing these new communication measures, the physicians in the telehealth group stated that it was considered appropriate for the pandemic situation, in which social distancing is fundamental. However, it was not considered advisable outside these conditions since personalized attention, as the one that was maintained before the pandemic, allowed closer contact with the patient and the family members.

From a public health perspective, frequent communication with patients' relatives was an appropriate opportunity to educate the community about asymptomatic cases and the importance of observing preventive measures to avoid contagion.

Results from COVID-19 Patient Family Members' Perspective

First Symptoms and Uncertainty Before Arriving at the Emergency Room

Lack or delay in communication is synonymous with tension, uncertainty, distancing, frustration, and anxiety. The information gathered during this study included occasions of different travel routes before the patient arrived at EEH, gathering family experiences visiting other medical care centers and hospitals, including other ICUs.

When leaving their relatives at the EEH emergency room, some family members were faced with either no information at all or delayed information that reached them the next day or even after 3 days. Many families were not provided with updates or information on how to contact the hospital or visitation guidelines. They reported poor communication or the absence of communication once their family member was admitted.

At the beginning of this study (August 2020), we identified multiple days when family members were unable to receive any kind of update on their loved ones. At that moment, telephone calls were made with the physician's phones, and it was mentioned that it was hard to find time to call the family members due to their increased workload. Furthermore, when physicians could call, the patients' contacts were not always available.

A Telehealth Strategy to Reduce the Lack of Communication

In response to this issue, a group of physicians was put in charge of creating a telehealth program. These professionals worked outside of the hospital but were constantly connected to the ICU. Their sole responsibility was to keep the family informed about their loved one's clinical condition daily and at convenient hours.

The researchers wanted to learn about the family's experience with the care of their relative in the ICU, especially focusing on communication. It was of interest to know if they considered it appropriate to be called every day and if they would have preferred to receive information only by phone call without video images.

We believed that clear, slow, and timely communication generates an informative dialogue that, while reducing uncertainty, increases confidence in the patient's care. Furthermore, it allows an understanding of the gravity of the situation and the potential of an adverse outcome versus recovery.

Quality of Communication After Hospital Admission

The relatives of patients who were discharged from the ICU, as well as those who died, made comments on several aspects that they consider important to improve at the hospital, teleworking, and video-call strategies level.

It was sometimes difficult to reach the providers or staff caring for their family members. Families commented that their calls went unanswered, were rushed, or were cut short. One family member noted that once her daughter was transferred out of the ICU (the video call mechanism was not implemented in other services of the same hospital), communication ceased, and she suffered without updates.

A common denominator between all family members, whether they received video or telephone calls, was that they wished for more clarity in communication and detailed updates.

We detected a contrast in the statements between the time before implementing the telehealth team and the time afterward. There was a lack of communication at the beginning, sometimes completely absent.

After Implementing Video Calls

Currently, the family feels profound gratitude for the team of physicians delivering the daily reports. A clear contrast in the statements between the time prior to implementing the telehealth team and the time afterward was observed in at least five positive characteristics: (1) The general telehealth experience, (2) the clarity of the messages, (3) the quality of care, and (4) the sense of comfort, and (5) an overwhelming improvement of communication.

Video Calls Between Patient and Family

During the focus group virtual meetings with the families of ICU-admitted patients (September 16–24, 2020), 1 month after the ICU became equipped with a tablet, we attempted to discern if the family was aware of the possibility of making or receiving a video call from the ICU. If the family was informed or warned before the video call about the appearance of their relative and the equipment surrounding them. In this case, the use of video calls was implemented gradually. Also, the frequency of the calls was not consistent between participants. It was estimated that around half of the patient's families could communicate in this manner. Despite this, most families who did receive the calls felt the experience was positive and the communication appropriate.

Family members were grateful to see their loved ones and interact with the hospital staff caring for them. It is appropriate to comment that not all video calls meant a direct conversation between family members and their patients. In some cases, patients were sedated, intubated, or asleep. In those cases, family members left voice messages and tried to communicate with their relatives. In those cases where they were able to contact their loved ones via video call, they expressed a feeling of gratitude and relief. They believe that it helps them to reduce the uncertainty of their relative's well-being, as well as accelerate recovery.

Discussion

A surge of new methods to facilitate communication between doctors and family, as well as between patients and family, has reduced the setbacks caused by social distancing and other infection prevention strategies.[25] One important practice includes the use of video conferencing applications, which can provide some similarities to face-to-face communication and are widely available.[10] There have been reports of medical staff helping patients and families use their smartphones to provide a means of connection—all of this through their motivation and creativity.[7]

In addition to video conferencing applications, regular telephone calls with family members are important to discuss the daily progress and prognosis of patients.[7] The implementation of doctor-led calls to family members to explain the clinical changes over the past 24 h, with the ability to ask questions and clarify doubts, received positive feedback as demonstrated in a study performed in the UK.[26] Additionally, it has proven a useful method to support inpatient rounds, physical distancing, and preservation of PPE that may also be valuable beyond the pandemic.[27]

In our study, at least five important observations demonstrated the benefits of creating the telehealth team. These included: (1) improving the quality of time spent in the ICU by the attending, who could, in turn, invest that time in the care of the patients, (2) avoiding the need to change PPE to deliver the report, (3) improving the consistency and quality of information, (4) increasing the level of satisfaction coming from family members, and (5) optimizing the communication opportunity to provide the family with preventive measures to avoid expanding contagion.

Considering the unstable nature of the patients with COVID-19 in the ICU, whose condition can change hour to hour or day by day, the frequent use of video calls is important.

The communication between the intensive care physician working in the ICU and the family members is considered the best way to respond to the family's inquiries[28] as they are most acquainted with the clinical developments regarding the patient.[29] However, social distancing measures introduced in the context of the pandemic and the subsequent use of PPE, were considered a possible disadvantageous activity that lessens the time dedicated to the care of the patients in the ICU.

Ideally, the solution for increasing the completion of information would be the virtual presence of the telehealth physicians during the rounds, reports, or changes of shifts in the hospital. All physicians, both working in the telehealth group or inside the ICU, agree that the information can only be delivered by medical professionals specialized in intensive care.

Because telehealth is dependent on technology, and this varies depending on the institution, it is important to identify technical factors that would maximize user acceptance and facilitate the implementation of a similar process.[30] The suggestion to update the daily registry just before calling the family members was widely accepted by the healthcare workers in the ICU, who are aware of the importance of the correct transmission of data in maintaining trust with the family members.

Measures were implemented during the focus group process to ensure the absence of conceptual and linguistic barriers. The active participation of all group members was facilitated, fostering an inclusive and respectful environment. This approach contributed to creating an equitable and barrier-free space for dialogue, allowing the voices of all participants to be heard authentically and without limitations.

The implementation of video calls made from the ICU can increase the burden of work and the emotional load on healthcare workers who now must assist with this type of communication. This may increase their risk of getting infected or suffering other mental health complications.[31] There is also the concern over disrupting the patient's or the family's privacy while using social networking services.[7] Furthermore, although the implementation of a telehealth team represents a relief in the workload of the attendings in the ICU, it can cause depersonalization of the situation because the physicians in the telehealth group are not in direct contact with the patient. A solution could be to make the video call only when the specialist in the ICU updates the information on the clinical evolution of the patient. Logically, this demands greater internal coordination and, at the same time, reduces communication errors. Another solution could be coordinating video calls between the patient and the family only when the patient clinically improves or worsens, facilitating the delivery of information, or aiding in final goodbyes when there is a serious worsening of the patient's clinical condition.

Providing comfort to family members is not an obligatory task of the physician, but it is a required task of the institution. In a state hospital like the EEH, which treats hundreds of human beings, many of whom are economically disadvantaged, it is considerably difficult to provide accommodations to families. The hospital administration struggled during the pandemic to provide physical space for family members to safely wait during the care or admission process of their sick family members. Usually, the first contact with the hospital occurs in the admissions area, and during urgent situations, the emergency room plays the role of reception and triage of patients and provides information to the families. For the sake of those who come to the institution and anxiously await news about their sick family members upon admission, personnel of the institution, trained in interpersonal relations, should be responsible for dialoguing with the public in the waiting area and providing the required information. Employees such as guards or the doormen, who have other types of functions and training, were not trained and should not have been involved in helping family members to cope with an unusual situation. Unfortunately, this was a common occurrence in the EEH, as described by the interviewed family members. In contrast, the ICU was an example for other hospital units for communication, awareness, and humanized care. The health care team was not only interested in recovering the life and health of their patients but also in connecting them with their families.

Conclusions

Through the implementation of consistent doctor-led video, conference calls with family members as well as facilitation of video calls between the patient and their family members, we were able to positively impact communication quality for both family members and medical professionals, increasing their satisfaction in terms of finding new methods to reduce the social isolation characteristic of the current pandemic.[13,32]

Video conferencing during the current pandemic has demonstrated that technology can be rapidly adapted as a solution to connect patients, their families, and doctors in an effective manner.[1]

The implementation of virtual focus groups as a methodological tool gave voice and images to patients and families with the possibility of getting together with those family members living overseas.

ICU patients are often critically ill and require extensive medical care, which can be overwhelming for patients and their families. Regular communication and updates on the patient's condition can provide families with emotional support and help them manage stress and anxiety.[20] Research shows that patients who communicate more often with their families have better outcomes and are more likely to recover from their illness.[33] This is because emotional support and encouragement from family members can have a positive effect on the patient's physical and mental health.[1]

When families are informed about the patient's condition and treatment plan, they are better able to make informed decisions about the patient's care. This can facilitate better communication and collaboration between healthcare providers and family members, resulting in more personalized and effective patient treatment. Patients who feel connected to their families and have their emotional needs met are more likely to report greater satisfaction with their care.[32] This can lead to a more positive overall patient experience and can help build trust and confidence in the healthcare system.[3]

We overcame the challenge of convincing telecommunications operators to provide megabytes and tablets for a project that allows patients in the ICU to communicate with their families through the Internet. It was important to present the project clearly and in detail, show its social impact, and negotiate the terms of the collaboration.

Throughout the focus groups, family members commented on the proactive attitude of ICU staff in responding to family queries, the consistency and reliability of the information provided by ICU doctors and those on

telehealth duty, and the importance of getting information about their family member's condition.

We suggest that in the future, the technological support of video calls between patients and family members continue to be applied in critical areas to improve patients' emotional state. Finally, the objective is to improve communication and relationships between the doctor, the patient, and the relatives, facilitating a more humanized interaction. This has an impact on the success of the treatment and recovery.

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Application of Ai-Generated Text or Related Technology

The authors report none.

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Contributors

Dr. Grunauer developed the study design, including the investigation, methodology, supervision, visualization, and writing the original draft. Dr. Ortega contributed to the methodology, formal analysis, writing, review, and editing of the manuscript. Dr. Yépez served as project administrator and contributed to resources related to writing, reviewing, and editing the manuscript. Dr. Jibaja provided supervision, data collection, and the study methodology. Dr. Icaza-Freire: contributed to the writing, review, and editing of the manuscript. Dr. Velez participated in data collection, analysis, and review of the manuscript. Dr. Arboleda and Dr. García participated in data collection and analysis.

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Appendix

In the focus groups, an interview guide was employed that consisted of 18 questions to analyze the uncertainty of the relatives, the quality of communication, the type of information provided by the treating physicians, the language used, hours of call, explanation, and understanding of the evolution of the patients, and the management of the death process. The interview was conducted in Spanish, as all participants spoke this language.

Attitude

1. Do you feel that your patient is receiving the best care possible?
2. Do you feel that the hospital staff cares about the patient?
3. Is the health staff attentive to you?
4. Are the staff interested in how you're doing? How does it feel?
6. Are you satisfied with the health care received by the patient?

About communication

1. Do they explain the patient's condition in terms you can understand?
2. Is the information you receive honest about the patient's condition and progress clear? Is it sincere?
3. Do you understand what is happening to you with the patient? and For what reasons are they giving you the care you receive, for example: exams, tests, medicines…)?
4. Has the hospital staff explained to you the equipment that is being used?

Possible improvements

1. Are there any things about the patient's health care that could be improved?
2. The way they communicate with you
3. The Information You Receive
4. How often you are given information
5. The vocabulary they use
6. Should the attending physician call your home if there is a significant change in the patient's condition?
7. What is better, the same, or worse for you? Use video calls where you can see the doctor and your family member, or receive a phone call without the video option.
8. Do you feel that communication with doctors and family members improved, worsened, or stayed the same after incorporating video calls (video calls) to the Intensive Care Unit?
9. Before incorporating video calls, did you receive daily information about the status of your relatives?