Medical Students and Patients Benefit from Virtual Non-Medical Interactions Due to COVID-19

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ABSTRACT

BACKGROUND: Patient care restrictions created by the COVID-19 pandemic constrained medical students’ ability to interact directly with patients. Additionally, organ transplant recipients faced increasing isolation due to the rise of telemedicine, the importance of social distancing and their immunosuppressed state. We created a pilot program to pair students with transplant patients for structured, virtual encounters and studied its impact on medical students and patients.

METHODS: In May 2020, medical students conducted virtual visits with patients via telephone or video conferencing. Patients and students were surveyed regarding their experiences and independent focus groups were conducted. The survey responses and focus group discussions were deidentified, transcribed, and analyzed for themes.

RESULTS: Ten participating students were in their first, second, or final year of medical school. The 14 patients were liver or kidney transplant recipients or kidney donors. All interactions lasted longer than 30 minutes, with 56% greater than 1 hour. Three themes emerged related to the student experience: improvement of their clinical communication skills, development of knowledge and attitudes related to organ transplantation and donation, and independent management of a patient encounter. Three themes related to the patient experience: appreciation of the opportunity to share their personal patient experience to help educate future physicians, a cathartic and personally illuminating experience and an opportunity to share the message of donation.

CONCLUSIONS: This pilot program provided a novel opportunity for virtual student-patient interactions that was feasible, well-received, and mutually beneficial. The use of virtual non-medical patient experiences allowed for experiential learning during which students learned about both clinical medicine and enhanced their communication skills directly from patients. Additionally, patients were able to engage with medical students in a new way, as teachers of clinical interactions, and reported a high level of satisfaction in addition to deriving personal benefit.

KEYWORDS: Virtual patient experience, patient teacher, COVID-19, transplant surgery, organ donation

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Background

The COVID-19 pandemic has had a profound impact on medical student education, requiring innovative solutions to ensure a robust educational experience.1-3 In most institutions, in-person lectures have been converted to a virtual format and clinical clerkships have been suspended or shortened, decreasing opportunities for student-patient interactions.4,5 Additionally, patients are increasingly isolated due to social distancing recommendations and the transition to virtual clinical visits can lead to psychological strain.6 Solid organ transplant patients are uniquely affected by the pandemic given their immunocompromised state requiring strict precautions.7 Experiential learning is the process in which knowledge is created through the transformation of experience.8 Experiential learning theory is utilized throughout medical education and has been shown to improve transfer of skills and knowledge.9,10 The loss of experiential learning due to the restrictions imposed by the COVID-19 pandemic, a critical aspect of undergraduate medical education, has led many educators to explore alternative modalities of student-patient interactions to adapt experiential learning to this new medical education environment.11-13

To provide a novel experiential learning opportunity for medical students while simultaneously offering further outreach to isolated transplant patients, we created a pilot program to pair students with transplant recipients or donors for semi-structured, virtual encounters. We studied the impact of this program on medical student communication practices, comfort having a one-on-one interaction with a patient, and attitudes related to organ donation and transplantation. Additionally, we evaluated the impact of these interactions on patients and analyzed their perspectives on the program in general.
Methods

Design

All study materials and procedures were reviewed and deemed exempt by the Massachusetts General Hospital Institutional Review Board and the project was approved by the Dean of Students at Harvard Medical School. We conducted a prospective observational pilot study during May 2020, pairing students from an academic medical school with volunteer liver or kidney transplant recipients or kidney donors.

Participants

The chance to participate in this program was presented to all medical students at a medical school in Boston through a posting on the COVID Student Response website as a clinical opportunity to help patients. It was also circulated by email to students in the Surgery Interest Group. Transplant recipients were identified by their medical team of nurse practitioners, physician assistants, social workers, nephrologists, or surgeons and were recruited to participate in the study via telephone. Transplant donors were recruited through the Women and men Encouraging Living Donation (WELD) advocacy group in Massachusetts.

All participants were provided a study fact sheet and advised that their participation was voluntary and would not influence their clinical care or academic evaluation. The leaders of the study did not evaluate student performance. Completion of survey instruments or participation in the focus group implied consent and no remuneration was offered for study participation. Participants were provided with 2 physician researcher’s direct contact information and encouraged to make contact if clinical questions or concerns arose. Since this was an optional experience, some data regarding student-patient interactions may be missing if the participants did not complete the survey or participate in the focus groups.

Study procedures

Students were first assigned either a liver or kidney transplant recipient for the experience. They were provided with contact information of their assigned patient and together with the patient decided on a mutually convenient time to interact. After this encounter, many students requested to be paired with a transplant donor as well for a second interaction. Two living kidney donors included their recipient as a participant in the interaction. Therefore, 3 types of interactions were possible: student with transplant recipient, student with transplant donor, or student with transplant recipient and donor together. Some students had more than 1 type of interaction at their request. The virtual encounter took place with either audio alone or both audio and video, depending on the preferences and technological capability of the student and patient. Students and patients were provided the same Discussion Guide (Appendix A) which outlined general, non-medical questions focused on the patient’s experience as an organ donor or recipient in order to guide the interaction. Interactions were not recorded.

Survey and focus group

Separate surveys were developed and completed by the students and patients. Study data were collected and managed using REDCap (Research Electronic Data Capture) electronic data capture tools hosted at Massachusetts General Hospital. REDCap is a secure, web-based software platform designed to support data capture for research studies.14,15 A semi-structured interview guide for independent student and patient focus groups was developed by 3 (TC, TM, LD) members of the research team (Appendix B). Separate focus groups for students and patients were conducted over ZOOM™ (Zoom Video Communications, Inc, San Jose, CA) with 6 participating students and 10 patients. The focus groups were audio recorded using a digital voice recorder and subsequently transcribed using a professional transcription service. Survey free-text responses and the student focus group were inductively coded line-by-line by 2 independent coders (TC and LD) and the patient focus group transcript was inductively coded by 3 coders (TC, TM, and LD). The codebook was further refined through regular meetings to discuss coding questions and concerns until a consensus codebook was agreed upon. This codebook was tested utilizing Dedoose (version 8.3.17, SocioCultural Research Consultants, LLC, Los Angeles, CA), an online qualitative analysis software, the codes were applied and interrater alignment was established. Recurrent themes were agreed upon through an iterative approach and quotes that best characterized each theme were identified.

Results

Ten students volunteered to participate in this optional program and were in their first, second, or final year of medical school. The student cohort included 4 females and 6 males. The 10 students were paired with a transplant recipient (10 student-recipient pairings) and if a student requested further interactions, also paired with a donor. There was a total of 4 student-donor pairings. Therefore, 14 patients were paired with students during this pilot study. Seven students and 8 patients completed the post-experience survey, including 4 liver transplant recipients, 1 kidney transplant recipient, and 3 kidney donors (Table 1). Six students and 10 patients participated in the focus groups.

Student survey responses revealed that they participated for a variety of reasons, with 87.5% stating they were interested in a career as a surgeon or transplant surgeon. Qualitatively, during the focus group, students reported participating due to a desire for further opportunities to interact with patients. Students were also motivated to participate due to an interest
in surgery, transplant medicine, or immunology. All students agreed that they would recommend this experience to another medical student and 85.7% would participate in a similar patient interaction again. As a demonstration of this, several students requested to meet with more than one patient after their initial interaction.

All patients were willing to participate in the program again. Overall, patients reported that students were well-prepared for their interviews and empathetic listeners. Patients and students felt the Interview Guide was important and contained thought-ful questions that helped the conversations flow smoothly.

**Themes**

Three main themes emerged related to the student experience. They are bolded here and summarized in Table 2. Students identified the utility of this experience in expansion of their clinical communication skills. The virtual interactions provided a venue for students to hone their communication techniques, commenting that this experience affected how they plan to interact with patients in their future practice. This experience helped amplify the importance of the patient-doctor relationship and students discussed how they aim to sustain that relationship in a clinical setting, “I learned that listening to patient’s concerns and advocating for patients to help them find a diagnosis is important.” Students also obtained practice navigating difficult questions in a virtual setting through this experience. Students described questions related to the patient’s experience in expansion of their relationship in a clinical setting, “I definitely really liked how this experience allowed me to really get to know this patient. But it also felt a little bit unrealistic in that I know I can’t do this with every patient. And I didn’t know how to feel about that. I’m like this is really wonderful, but is this a level of discussion that can be reached with a patient in the clinic when I’m busy?”

| MEDICAL STUDENTS | NUMBER (%) |
|------------------|------------|
| Medical school year |
| 1                | 5 (71.4)  |
| 2                | 1 (14.3)  |
| 3                | 0 (0)      |
| 4                | 1 (14.3)  |
| Length of conversation |
| 30-44 min        | 4 (44.4)  |
| 45-59 min        | 0 (0)      |
| >60 min          | 5 (55.6)  |
| Method of communication |
| Audio only       | 5 (55.6)  |
| Video and audio  | 4 (44.4)  |

*I'd be saying something about how they should be fearing right now.* Students were able to better understand the impact of COVID-19 on their patients, including the isolation due to social distancing guidelines and the fear of disease given their immunocompromised state. They described techniques they used to ask difficult questions, putting principles of patient-doctor communication into action, “I guess I didn’t ask them directly if they felt scared or nervous in kind of the past couple months. I think I phrased it more open-ended of just like, ‘Given everything that’s happening, how have the last couple months been?’ and kind of just let them go from there.”

Through this experience, students developed their knowledge and attitudes related to organ transplantation and donation. Students obtained a greater appreciation of the multi-disciplinary nature of transplant care. For example, a student stated, "I didn’t realize how many different players there were for organ donation, from the organ transplant coordinators, to the many physicians and nurses who support the patient." Additionally, students were able to learn about medical aspects of transplant care through this interaction, including specific medical facts and a deeper understanding of transplant listing and allocation. Students gained a better understanding of the relationship between transplant recipients and their donors and donor families. They discussed the complexity of these relationships and learned how the situation was navigated by both recipients and donors. Importantly, students agreed that this experience made them more willing and empowered to discuss organ donation with family and patients in the future. Students shared that they would consider living donation as a result of the discussion. For example, "I feel like now, having spoken to a donor and seeing that his life— it was a little bit of a rough recovery from the donation, but that his life is roughly about where it was, and that he was able to make sure that his daughter got to continue living her life. That just seems like an amazing sacrifice to make. And that’s definitely something that’s motivated me to, if any situation like this were to ever occur in my life of someone in my inner circle, I wouldn’t hesitate to try to be the donor in that case. I really think that is not something I would have said prior to interacting with them.”

Lastly, students gained valuable experience through independent management of a patient encounter. By speaking with patients without more senior medical providers present, students were able to focus and guide the conversation independently. They noted the difficulty of clinical time management, recognizing that this encounter, which focused on the patient’s experience and not medical care, allowed the student to create a strong relationship with the patient which may be more difficult in a shorter clinical encounter. One student commented, "I definitely really liked how this experience allowed me to really get to know this patient. But it also felt a little bit unrealistic in that I know I can’t do this with every patient. And I didn’t know how to feel about that. I’m like this is really wonderful, but is this a level of discussion that can be reached with a patient in the clinic when I’m busy?"
Three major themes emerged related to the patient experience (Table 2). Patients also greatly appreciated the opportunity to reflect on and share their personal patient experience to help educate future physicians. Patients appreciated a chance to share physician actions that were important to them during their care. One patient commented, "part of the thing that I felt at a lot of times was that the doctors assumed you understood the process. And I didn’t understand the process. So we talked about that. That when you’re talking to somebody, and you’re assuming that they understand things, and it’s going right over their head, how do you break that down for them?" Patients felt that by sharing these experiences, they were helping the students develop into more compassionate and empathetic physicians.

Additionally, patients found the experience to be cathartic and personally illuminating. This encounter was unique in that they were speaking to medical personnel that were not clinically involved in their care, which led to novel personal insights. One patient reported, “It proved to be cathartic for me. While exploring my experience in great detail, which I seldom do, I had an insight into how it affected me.” Another patient stated, “But something else came up for me while I was telling it, and it was an insight that I haven’t had before. And it was really important for me to stumble into that, and I told that as part of the story. But in spite of all the times I had told it, this was the first time that I saw a really important connection between my experience as a donor and then the experience I had 10 years ago with my daughter that didn’t turn out well at all. And it was the question and the way she asked and how she listened so carefully that made that possible for me. So I came away from the experience feeling like I got way more than I gave.” Patients rarely have the opportunity to spend a significant amount of time discussing their personal experience with a medical professional, therefore they were able to review it from a new perspective which led to unique insights into their experience as a transplant patient or donor.

Patients also appreciated the opportunity to share the message of donation. These patients have all benefitted from transplantation and so this provided another opportunity for them to share how organ donation changed their lives. One patient commented, “I’m real happy to be evangelizing for living donors.” Another felt this experience was a way to teach students that when counseling families regarding organ donation, the widespread effects should be highlighted—“for the families of donors to tell them when they donate they don’t just change one life, they change thousands of lives for the good.”

**Table 2. Themes related to the student and patient experiences.**

| **Students** | **Expansion of clinical communication skills** |
|---|---|
| "Listening to a patient’s story is a lot more memorable than reading a textbook." |
| **Development of knowledge and attitudes related to organ transplantation and donation** |
| "...like people in my family who aren’t currently organ donors, I feel like my experience talking to this patient might help inform that conversation a little bit better." |
| **Independent management of a patient encounter** |
| "maybe one takeaway I had from that too was even if you’re not getting a chance to really understand their past, their whole story in an initial visit, at least trying to understand what they don’t understand or what are they anxious about and kind of honing in on that." |
| **Patients** | **Opportunity to share personal experience to help education future physicians** |
| "The difference that intentional clear communication and empathy can make for the patient.” |
| **Cathartic and personally illuminating experience** |
| "It proved to be cathartic for me. While exploring my experience in great detail, which I seldom do, I had an insight into how it affected me.” |
| **Sharing the message of donation** |
| "For the families of donors to tell them when they donate they don’t just change one life, they change thousands of lives for the good.” |

**Discussion**

In this study, we paired medical students with transplant patients and donors for semi-structured virtual encounters in order to establish novel educational clinical experiences for students given the limitations imposed by the COVID-19 pandemic. Virtual visits between medical students and patients proved to be a feasible, well-received, and an effective method for students to develop their communication skills and develop a patient-centered approach to care, despite limited in-person interactions. Additionally, patients appreciated the experience and found it personally beneficial. Many found this interaction useful as a mechanism to share their personal stories and ultimately gain a better understanding of their experience of transplantation. They also felt it was important to impart their knowledge on future physicians as a mechanism to “give back.” In fact, patients found the encounter empowering, priding themselves in helping students develop into more compassionate and empathetic physicians.

The COVID-19 pandemic has had far-reaching effects on medical student education, including decreasing their direct interactions with patients and opportunities for experiential learning.16 It has been shown that students appreciate the experience of learning from patients as an adjunct to their standard faculty-led instruction.17 This dearth of patient interactions limits their ability to understand and appreciate diverse patient experiences as well as their ability to explore potential fields of specialization within medicine and surgery.18 For many students, this virtual interaction was a welcome opportunity to speak with patients to balance the loss of patient-led...
experiential learning caused by COVID-19. Additionally, it provided a mechanism for students to grow as clinicians by practicing patient interviews and engaging in difficult discussions with patients without faculty or residents entering the conversation. The interaction was not limited by the schedule or agenda of a supervising resident or attending, instead the student was able to guide the discussion independently. Students were able to develop their own communication skills in a low-stakes clinical setting with no time limitations.

For many students, this was also their first exposure to a transplant recipient or donor, so this program served as a novel introduction to the field of transplantation. This study demonstrated how a unique patient experience can affect students’ understanding of organ donation and their willingness to counsel others on becoming organ donors. Prior work has demonstrated that students enter medical school with a limited understanding of organ donation.\(^{19-22}\) Many types of interventions have been useful in altering students’ understanding of organ donation, including lectures on organ donation, elective courses, and participation in organ procurements.\(^{23-26}\) This study contributes a novel perspective by demonstrating that a virtual encounter with patients can have an important impact on students’ outlook on organ donation counseling.

Importantly, the patients also found this experience to be extremely positive. Actual patients instead of actors were used for this educational pilot study, and the interaction proved to be mutually beneficial to both students and patients. All of the patients agreed to participate when initially approached about the opportunity, and after completing it, all were willing and excited to speak with another student in the future. Many educational studies focus on student interactions and impact, but uniquely we were able to incorporate the patient experience in this our analysis of the educational intervention. For patients, the opportunity to contribute to a student’s education was an empowering experience and it also allowed them to achieve deeply personal insights about their experience as a patient. This experience served both the patients and the students, which is an exciting finding as we look to expand this program further.

While the development of this program was driven by the restrictions imposed by the COVID-19 pandemic, based upon this pilot study, we have created curricular changes to incorporate this experience as a mandatory exercise in the surgery clerkship. We are studying the integration of this program as a part of the clerkship and incorporating the perspectives of a wider range of students and patients in our analysis. Additionally, based upon student and patient feedback, we have added an introductory lecture on the Principles of Organ Transplantation that is presented prior to the virtual interaction so that students have a baseline understanding of transplantation as a foundation for their conversation with the patient.

There are some limitations to this work. This was a voluntary pilot study that included a convenience sample of participants, therefore our sample size was small and may not be entirely representative. Only 10 students participated in the virtual experience, 7 completing the survey, and 6 participating in the debrief session. We have incomplete follow-up data due to the voluntary nature of the survey and focus groups with 70% and 71% survey response rate and 60% and 71% focus group participation by students and patients, respectively. This could lead to an underrepresentation of some perspectives on this experience. Additionally, there may be a volunteer bias within this cohort, which may skew responses in a favorable direction.

**Conclusion**

Semi-structured virtual visits between medical students and patients provide a novel mechanism for students to deepen their connection with patients and further develop their patient communication skills. For patients, the virtual student interaction is a useful experience that can lead to positive personal insights related to their transplant experience as well as a sense of empowerment as they educate the next generation of physicians. For both groups, these visits addressed a void created by the social distancing guidelines mandated by the COVID-19 pandemic. This opportunity could easily be replicated with other professionals (advanced practice providers, nurses, technologists, etc.) and patients from a variety of fields in a manner that both educates the trainees and promotes self-reflection and empowerment of the patients.

**Author Contributions**

T.C., E.P., and L.D. devised the study design. T.C., S.A.B., K.R., N.S., and L.D. conducted the study. T.C., T.M., and L.D. wrote the manuscript. T.C., T.M., S.B., H.Y., S.B., E.P., and L.D. participated in the critical revision of the manuscript for intellectual content. All authors contributed to the preparation of the manuscript.

**Ethics Approval**

All study materials and procedures were reviewed and deemed exempt by the Massachusetts General Hospital Institutional Review Board and the project was approved by the Dean of Students at Harvard Medical School.

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**Availability of Data**

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

**REFERENCES**

1. Stetson GV, Kryzhanovskaya IV, Lomen-Hoerth C, Hauer KE. Professional identity formation in disorienting times. *Med Educ. 2020;54:765-766.*
2. Rose S. Medical student education in the time of COVID-19. *JAMA.* 2020;323:2131.
Appendix A

Discussion guide for kidney transplant donor interviews

Start with introductions!

- Have you ever had a kidney transplant?
- Did you have a liver or kidney transplant? Living donor or deceased donor?
- How many years ago was your transplant?
- Are you willing to tell me more about how you first came to know you were sick with liver/kidney disease?
- How long did you have to wait for your transplant?
- What was it like waiting for an organ?
- Did you and/or your family/support system feel like you knew what was going to happen during hospitalization and surgery, or did things surprise you?
- How did you feel immediately after the transplant?
- What were the major challenges since your transplant?
- Did you know how and whom to ask for help?
- What does your experience with pain mean for the future of organ donation or transplantation?
- What was your emotional experience with donation? Were you ever afraid?
- Did you feel like you knew what was going to happen during hospitalization and surgery, or did things surprise you? Did you know how and whom to ask for help?
- What would have made you ask for help?
- What would make it easier to ask for help?

Discussion guide for transplant patient interviews

Start with introductions!

- Did you have a liver or kidney transplant? Living donor or deceased donor?
- How many years ago was your transplant?
- Are you willing to tell me more about how you first came to know you were sick with liver/kidney disease?
- How long did you have to wait for your transplant?
- What was it like waiting for an organ?
- Did you and/or your family/support system feel like you knew what was going to happen during hospitalization and surgery, or did things surprise you?
- How did you feel immediately after the transplant?
- What have been the major challenges since your transplant?
- Did you know how and whom to ask for help?
- What would have made you ask for help?
- What would make it easier to ask for help?

- What does your experience with pain mean for the future of organ donation or transplantation?
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- How did you feel immediately after the transplant?
- What were the major challenges since your transplant?
- Did you know how and whom to ask for help?
- What would have made you ask for help?
- What would make it easier to ask for help?

- What does your experience with pain mean for the future of organ donation or transplantation?
Appendix B

Transplant patients: Focus group guide

Introductions

Name, age, transplant experience (eg, donor, recipient), which student they interacted with (may be helpful if we want to stratify responses based on the student’s year in medical school, but not necessary)

Overall impressions of the experience

- Did anything during the interview surprise you?
- Was there any time during the interview when you felt uncomfortable?
- Did you feel hesitant to share any particular aspects of your experience?

Impact on self

- How does it feel to explain your story to medical students? Is it therapeutic? Anxiety-provoking? Satisfying? Helpful for formulating/organizing your own emotions?
- How did this experience affect you?
- Was this experience helpful to process the transplant experience?

Outlook

- Do you think that programs like this can help create more empathetic and compassionate transplant physicians?
- In your opinion, can these interactions with students help them develop into better advocates for their patients?
- Through these virtual interactions, do you feel that medical students can be valuable members of the transplant team?
- Can virtual interactions with students help patients feel more connected to the medical system?

Student engagement

- Was the student able to demonstrate empathy and connect with you through this virtual medium?
- Do you think this is a good platform for students to practice a patient-centered approach to medicine?
- Were you able to teach your student something new? (ie, transplant logistics, patient considerations, living with immunosuppression?)

COVID-19

- Have you felt that COVID-19 precautions have been especially isolating for you? (this question is mainly aimed at the recipients rather than the donors)
- Was this opportunity to share your story with a student a welcome experience during these difficult times?
- Would you be interested in participating in similar virtual interactions in the future?

Medical students: Focus group guide

Introductions + what kind of patient they interacted with (donor vs recipient).

What is the first thing that comes to mind when you think about the interaction you had with your patient?

What did you learn about organ donation or transplantation in the process of your interview? Was there something you didn’t know before your interview?

Did anything during the interview surprise you?

Was there any time during the interview that you felt uncomfortable? Why?

Was there anything you wanted to ask but didn’t? What would have facilitated your ability to ask?

Is there anything that came up during your interaction that you want more information about?

How do you think this impacted your perspective on organ donation and/or organ transplantation?

How do you think this impacted how you may interact with or care for patients in the future? Is that specific to transplant patients or any patients?

Did you learn anything about the different types of medical professionals who care for transplant patients?

Do you see yourself working with transplant patients in the future?

Any suggestions for improvements in this activity for future students?