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Original Research Article

Pilot Assessment of Patient and Provider Characteristics Associated With Satisfactory Consultation-Liaison Telepsychiatry Encounters



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Background: The COVID-19 pandemic created pressure to attempt remote consultation, but there are limited data on the use of telepsychiatry in general, and almost none about the experience of telepsychiatry in a consultation-liaison context. **Objective:** We looked for attributes that correlated with satisfactory tele-encounters. **Methods:** Eleven consultation-liaison attending surveys and 8 attendings' tele-encounter logs from March to June 2020 were completed and reviewed to assess for patient and provider characteristics associated with barriers to using telepsychiatry. **Results:** A vast majority of 223 tele-psychiatric encounters were acceptable to providers in terms of technology (82%) and their ability to form a connection with the patient (78%). In multivariable logistic regression models, an unresolvable difficulty in

using the platform was less common for female patients (odds ratio = 0.239, $P = 0.002$) and more common for patients who prefer a non-English language (odds ratio = 9.059, $P < 0.001$); achieving a personal connection that felt right was also less likely for patients who prefer a non-English language (odds ratio = 0.189, $P = 0.001$). **Conclusions:** Telepsychiatry has previously been limited to outpatient use and, generally, for providers and patients who specifically preferred it. However, abrupt transition to the use of telepsychiatry to limit contagion risk was mostly satisfactory in our center; identifying for which patient encounters it is most and least appropriate will help guide future use.

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Key words: telemedicine, telepsychiatry, consultation-liaison psychiatry, psychosomatic medicine, limited English proficiency, language discordance.

INTRODUCTION

In-person care is the traditional standard for medical practice, but telemedicine and telepsychiatry have been increasingly used, primarily to deliver care for outpatients too distant from providers to receive in-person care.¹ Telemedicine has been found feasible, reliable, acceptable, and effective throughout a wide range of settings, specialties, age ranges, and cultural groups.^{2–5} However, telepsychiatry literature is limited, heterogeneous, and largely focused on implementation process,^{6,7} provider resistance,^{8,9} and strategies to bolster physician acceptance.^{10,11}

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Considerations unique to the consultation-liaison (CL) setting may affect the feasibility, process, and acceptability of telepsychiatry in explicit and indirect ways. An exclusively remote evaluation may obstruct diagnosis; patients may be too medically ill, fatigued, or delirious to attend to the videoconference. For inpatients, hospital personnel could potentially facilitate videoconferencing but may experience this task as an imposition. Either the clinician or the patient engaged in remote work may encounter technological barriers or may feel less of a personal connection. There is minimal prior literature to guide implementation of in-hospital telepsychiatry consultation.^{5,12,13} For outpatients with medical comorbidity, similar concerns apply. As a group, these patients are older, more frail, and more cognitively impaired than the general outpatient psychiatry population. However, they may also benefit most from avoiding an additional trip to our medical center.

During the COVID-19 pandemic, the need to reduce hospital traffic and in-person interaction heightened the importance of care delivered from a distance.^{12,14} Telepsychiatry was abruptly implemented for consultations at our large urban CL program serving a tertiary care hospital. Patients and providers were therefore not self-selecting to use telepsychiatry as they had in the past.

Clinicians' perception of a telepsychiatry program as beneficial, which predicts motivation to adapt, is integral to the success of a novel program.^{6,10} Causes of physician resistance to telemedicine include a sense of reduced autonomy, situational anxiety, and cost.⁸ Triage systems and workflows sometimes improve provider acceptance.^{5,11} In this study, we considered both provider and patient characteristics, hypothesizing that successful CL encounters—as defined by whether the signal was functional, whether the patient was able to successfully access the software and platform, and whether the provider felt the rapport built was adequate for the work—would be associated with patient age, language, gender, diagnosis, and inpatient or outpatient setting.

MATERIAL AND METHODS

This study was approved by the Columbia University Medical Center Institutional Review Board. Physicians were recruited from our CL Division of the Department

of Psychiatry requesting consent to use ongoing QA logs and to participate in the survey. Logs of deidentified patient tele-encounters from March 2020 through June 2020 were included; providers completed surveys in June 2020.

Logged information included demographics, medical and psychiatric diagnosis categories, platform used, assistance in accessing teleconference, duration, billing codes, and barriers to care in these categories: (1) signal issues (none, any, or any but resolved); (2) individual user issues that impacted the patient's ability to access the device, software, or platform (none, any, or any but resolved); and (3) personal rapport as determined by the treating psychiatrist (felt right, did not feel right, or could not assess due to issues better attributed to category #1 or #2).

A one-time identity-coded survey was also distributed to the physicians, querying basic demographics, access to relevant technologies at the time their higher education began, preferred device types and platforms, and general comfort with the use of telepsychiatry.

Statistical Methods

We evaluated 2 binary outcomes: user issues and personal connection. For user issues, we merged responses into 2 categories: (1) no problem or problem that resolved and (2) problem that did not resolve. For personal connection, 9 records were excluded because of user issues or signal issues, leaving 2 categories: (1) felt right and (2) did not feel right.

Patient characteristics including age, gender, preferred language, cognitive (delirium or dementia) versus noncognitive (all other) psychiatric diagnoses, and inpatient versus outpatient setting were compared between different outcome statuses. There were so few signal issues that this variable was excluded from our final analysis. The sample of attendings was insufficient for statistical modeling but is included as descriptive statistics (Table 1).

Variables associated with the outcomes with a *P* value < 0.1 in univariate analysis were included in the multivariable logistic regression model. Firth's bias-reduced penalized likelihood logistic regression model was fitted to quantify the association between the outcome and covariates. Analyses were performed in Rstudio version 1.1.453.

TABLE 1. Patient and Attending Details for Logged Tele-Encounters (n = 223)

	#Encounters	(%)		#Encounters	(%)
Patient gender			Patient 1° med-surg disorder		
F	82	(36.77)	Cardiac	1	(0.45)
M	123	(55.16)	Gastrointestinal/Hepatic	57	(25.56)
O	18	(8.07)	Infectious disease	40	(17.94)
Patient age ([22, 82], mean = 51.6, SD = 16.6)*			Nephrological	9	(4.04)
<30	32	(14.41)	Neurological	6	(2.69)
30-39	20	(9.01)	Oncological	75	(33.63)
40-49	38	(17.12)	Pulmonary	7	(3.14)
50-59	49	(22.07)	Other	28	(12.56)
60-69	57	(25.68)	Patient 1° psychiatric disorder		
70-79	19	(8.56)	Adjustment disorder	26	(11.66)
80-89	7	(3.15)	Anxiety disorder	34	(15.25)
Patient location			Delirium	18	(8.07)
Inpatient	118	(52.91)	Dementia	7	(3.14)
Outpatient	105	(47.09)	Mood disorder	72	(32.29)
Patient preferred language			PTSD/acute stress	1	(0.45)
Chinese	2	(0.9)	Psychotic disorder	11	(4.93)
English	164	(73.54)	Somatoform disorder	1	(0.45)
German	7	(3.14)	Substance disorder	36	(16.14)
Greek	2	(0.9)	Other	17	(7.62)
Spanish	48	(21.52)	Patient setting/location		
Age of attending involved in the encounter			Outpatient	105	(47.1)
<40	144	(64.57)	Inpatient	118	(52.9)
40-49	76	(34.08)	Involved attending's tech history†		
50-59	1	(0.45)	Any	221	(99.1)
60-69	2	(0.9)	Computer	160	(71.75)
			Internet	157	(70.4)
			Cell phone	44	(19.73)

PTSD = posttraumatic stress disorder.
 * n = 222 because of missing datum in one record.
 † What kinds of tech they had access to in first year of undergraduate education.

RESULTS

Fifteen CL attendings were invited to participate. Eleven (73.3%) consented, 11 completed surveys, and 9 submitted logs. No surveys were excluded. Two hundred sixty-eight encounters were collected, reflecting an unknown number of unique patients. After excluding entries not involving direct patient contact (23) or with incomplete outcome information (22), 223 entries of 8 attendings were included in the analysis. A total of 75 audio-only encounters and 139 videoconference encounters were included in our analyses.

Population Characteristics

Encounters were 36.8% with female patients, 55.1% male, and 8.1% nonbinary or other (Table 1). The mean patient age was 51.6 years (standard deviation 16.6). Inpatient encounters accounted for 52.9%. Encounters

involving patients who preferred English accounted for 73.5%, and 21.5% involved patients who preferred Spanish. A smaller number of encounters involved patients with a preferred language of German (3.1%), Greek (0.9%), or a dialect of Chinese (0.9%). Interpretation for all non-English languages was performed via professional over-the-phone interpretation, with only a few encounters performed by providers who themselves were bilingual.

Logs were submitted by attendings whose ages ranged from thirties to sixties and whose undergraduate access to technology ranged from none to having a cellphone, internet access, and a computer (Table 1).

Analysis

We had sufficient records to assess for the relationships between our independent variables and 2 outcomes: user issues and rapport (Table 2).

TABLE 2. Multivariable Logistic Regression Models for User Issues and Personal Connection

Outcomes by patient characteristics	Odds ratio (OR)	Lower 95%	Upper 95%	<i>p</i> value
Having an unresolvable user issue:				
Age	1.025*	0.990	1.064	0.159
Female gender	0.239	0.086	0.597	0.002
Nonbinary/other gender	0.403	0.003	4.894	0.528
Cognitive diagnosis	2.634	0.856	8.146	0.091
Preferred language is not English	9.059	3.397	27.027	<0.001
Inpatient setting	0.844	0.298	2.304	0.743
Having a personal connection that “felt right”:				
Age	0.979†	0.945	1.012	0.211
Female gender	1.036	0.448	2.434	0.934
Nonbinary/other gender	0.460	0.031	68.307	0.660
Cognitive diagnosis	0.392	0.115	1.315	0.128
Preferred language is not English	0.189	0.060	0.528	0.001

Reference levels are gender = male, diagnosis = noncognitive, language = English, setting/location = outpatient, and attending tech history is internet = none and cell = none.

* For each year increase of age, the OR increases by 2.6%.

† For each year increase of age, the OR decreases by 2.1%.

In the multivariable model for user issues, female patients were significantly less likely than male patients to encounter unresolvable user issues (odds ratio = 0.239 [95% confidence interval: 0.086, 0.597], $P = 0.002$), and patients preferring non-English languages were significantly more likely to have such issues (odds ratio = 9.059 [95% confidence interval: 3.397, 27.027], $P < 0.001$).

In the model for personal connection, a significant association was found between rapport and preferred language: patients who preferred any language other than English were less likely to have participated in an encounter with a positive assessment of rapport (for non-English: odds ratio = 0.189 [95% confidence interval: 0.060, 0.528], $P = 0.001$). There was no relationship between diagnosis, age, or inpatient versus outpatient status and any of our index outcomes (Table 2).

Therefore, in our population, after adjusting for all relevant variables, the significant findings were fewer user issues for female and English-preferring patients and better rapport for English-preferring patients.

In a post-hoc Chi-square analysis, we also found that language predicted the use of videoconference versus audio only, with English-preferring patients significantly more likely to be seen using a video visit ($P < 0.001$). However, there was no overall association between audio versus video visit and our outcomes of interest, either for the entire group, the English-preferring group, or the group of patients preferring other languages.

DISCUSSION

In this study of eleven attending physicians surveyed and eight attending physicians' records of 223 telepsychiatry consultations, most encounters were acceptable in terms of signal, user issues, and rapport. Because there was little time for training or preparation, these data reflect preoptimization telepsychiatry, suggesting that more time and training could make telepsychiatry even more effective. Some consultations may have succeeded because of less reliance on the tele-interaction and greater reliance on medical records or collateral information. In some cases, a failed attempt at tele-evaluation might have been replaced by an in-person consultation without recording the initial attempt.

For patients who preferred a non-English language, in spite of professional interpretation, we found a significantly higher number of *unresolvable user issues and decreased rapport*, consistent with general disparities in care for patients with limited English proficiency.¹⁵ Patients who preferred languages other than English were also significantly more likely to have audio-only interactions, which we suspect was because interpreters were available via audio only, meaning that even when the psychiatrist was seen via video, the interpreter was not. Audio versus video did not predict assessment of rapport, which may reflect that the choice of audio or video was consistent with patients' preferences.

Women had a *significantly lower* rate of user issues. Potential reasons include higher motivation, better skill

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using assistance, or baseline superior technological competence. Age did not meet significance for predicting user issues, or rapport, suggesting that either age does not play a strong role in patients' ability to access telepsychiatry or that assistance from younger family members and hospital staff may compensate for age-related barriers. Diagnosis also did not correlate with user outcomes, which may reflect insufficient power to truly stratify by diagnosis. Inpatient versus outpatient location also did not meet significance for predicting user issues or rapport, in spite of inpatients being more ill. Very few patients in either location had internet signal issues. It is possible that socioeconomic differences might underlie a heterogeneity of experience in which some patient groups have better overall access from inside the hospital, where devices can be loaned, staff can assist, and internet speed is moderate, whereas others benefit from superior hardware and internet connection at home.

Strengths and Limitations

Logs were collected within a week of the COVID pandemic in a tertiary care center with extremely ill and diverse patients in the center of the first American wave of the pandemic.

Limitations and sources of possible bias include small sample size of providers, variable completeness of logs returned, unusually heightened motivation due to universal concern about contagion, an unknown total number of patients included in the anonymized logs, simple assessment options without nuanced questions interrogating how rapport was assessed, and lack of control groups including in-person comparisons and video language interpretation.

Future research should address these limitations by increasing sample size, using Likert-type outcome scales, including patient perspectives, following long-term rapport, and comparing video to audio interpretation for language-discordant encounters. Future work should also consider the use of CL telepsychiatry specifically for critically ill patients and acute care settings, including ICU and surgical settings, and medical problems that limit hearing or vision.

COVID both necessitated distant evaluation and changed in-person care in ways (high total patient burden, staff exhaustion, visitor restrictions, altered diagnostic makeup of the population) that could skew results, limiting generalizability. We did not have a control group to assess whether COVID-related barriers (copious personal protective equipment, shorter evaluations, lack of family presence) might have limited the quality of the assessment or rapport of in-person evaluations. We found no literature about the impact of provider face-coverings (for personal protective equipment or otherwise) on patient experience, although in our clinical experience, patients often comment about the psychological impact of not seeing a provider's face.

CONCLUSIONS

This pilot study showed that telepsychiatry can be feasible in a CL setting. We provisionally recommend that for services using a hybrid model, patients with limited English proficiency be given prioritized access to in-person consultation. Future research should focus on patient perspectives, include control groups, and consider the impact of provider facial coverings on rapport-building.

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