



Lessons Learned on Telehealth in Inpatient Psychiatric Facilities: Quality, Continuity, and Models of Care

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Abstract

Little inpatient telepsychiatry research exists, especially in regard to rural behavioral health services where the need for services far exceeds the number of providers. This case series included 12 inpatients of a non-metropolitan psychiatric hospital treated at a distance for 2 days (i.e., 24 visits) by a remote inpatient psychiatrist utilizing telehealth, who teamed with an on-site resident, medical student, nurse, and social worker. A direct care model was used, remote electronic health record order entry, and documentation for patients with schizophrenia, bipolar disorder, or depressive disorders. Three types of patients were seen: (1) previously seen and followed in person by the same provider, (2) previously admitted with a different provider, and (3) new admissions. Patients consented to telehealth as part of regular care and quality improvement and patient feedback was collected at the end of every session. There were no differences between telehealth and non-telehealth patients in use of emergency medications, codes, and length of stay. Two patients with schizophrenia were too disorganized to go to the tele-interview room; these patients cannot be interviewed on site, either, due to concerns. Patients expressed positive experience with telehealth and no preference for in-person care; all patients seen by the teleprovider preferred this continuity. Telepsychiatry was versatile, was effective, and enabled continuity of care in this small series.

Keywords Telepsychiatry · Rural · Culture · Behavioral health · Child · Adolescent · Underserved · Telebehavioral

Introduction

Provider shortages limit behavioral health care access in many regions of the world and new technologies like telehealth leverage scarce resources (e.g., psychiatrist time) (Surgeon General Report 2001). Access to high-quality psychiatric inpatient and emergency services is a priority and staffing

around-the-clock is rarely possible and is costly/not cost-effective. Rural psychiatrists are isolated and have trouble obtaining coverage for vacations and unexpected illness, leading to increased turnover of providers (Grady and Singleton 2001). An approach to provide culturally appropriate rural behavioral health care in rural settings suggests that clinicians have competencies in both telepsychiatry (or telebehavioral health) and culturally competent care (Hilty et al. 2018b), since the Hispanic population in rural America is a rapidly growing segment of the population, in non-metropolitan counties, with an increase of 46 percent or 1.9 million people between 2000 and 2010 (Housing Assistance Council 2012). The term telebehavioral health is preferred, as it is inclusive across professions and technically includes both mental health and substance use care.

There is a large need for rural behavioral health providers: rates of major depression in some rural areas far exceed urban areas (Probst et al. 2005) and teens and older adults in rural areas have significantly higher suicide rates than their counterparts in urban areas (Goldsmith et al. 2002). Despite the high need in many rural areas, behavioral health services are not available (e.g., 85% of the 1669 federally designated shortage areas for behavioral health are in rural locations

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according to The New Freedom Commission on Behavioral Health Subcommittee on Rural Issues (2012)). The commission recommended increased funding for adults with serious mental illness and enhanced coordination between funded telehealth and public mental health systems.

Some patients report a preference for telepsychiatry (TP) over in-person care (Hilty et al. 2013). This includes, but is not limited to, child and adolescent patients with autistic spectrum disorders (Pakyurek et al. 2010), rural inpatients, and veterans with posttraumatic stress disorder (PTSD) (Grady and Singleton 2001; Bush et al. 2013). Patients have also anecdotally cited that TP reduces physical distance for travel and anxiety in accessing care, while it provides more control/empowerment (Simpson et al. 2003) (Thomas et al. 2005).

Inpatient psychiatry has high acuity, very ill patients, and complex treatment plans. TP may help prevent undesirable and longer hospitalizations for rural patients (Tseng et al. 2008). Interestingly, 77% of involuntarily committed patients said their TP provider understood them as well as or better than in-person and 63% thought the system was the same as or better; only 14% stated that they would be generally unwilling to use TP again (Pollard and LePage 2001). Overall, TP appears effective and could provide flexibility and better leverage resources (Hilty et al. 2013).

Multi-modal, team-based delivery models including TP should be more systematically taught to develop core competencies in residency training (Hilty et al. 2015). Residents have interests in learning the technology (Glover et al. 2013) and yet there is little in the form of systematic education of TP in residency training (Sunderji et al. 2015). Live teleconsultations, brief didactic teaching, and case-based learning vignettes are suggested (Hilty et al. 2015).

The inpatient TP literature does not describe clinical, administration, or technical challenges, and the literature on emergency department, nursing home, and other acute care services is slowly growing.

Methods

A 48-bed psychiatric hospital in Visalia, California, affiliated with University of California at Irvine, serves a city and outlying area population of 459,863 people that is staffed with three full-time psychiatrists and one part-time psychiatrist. Twelve inpatients at a psychiatric hospital in a non-metropolitan area were managed at a distance for 2 days (i.e., 24 visits) by an inpatient psychiatrist using telemedicine due to a provider shortage.

The provider teamed with a resident (R), medical student (MS), registered nurse, social worker, and, when necessary for emergencies, another inpatient psychiatrist. Patients with schizophrenia, bipolar disorder, and depressive disorders were of three types: (1) previously seen and followed in person by

the same provider, (2) previously admitted and followed by another provider, and (3) new admissions. Patients consented to participate and patient feedback was collected at the end of every session.

The treatment included (a) inpatient psychiatry unit for involuntary hospitalization, (b) lab, diagnostic workup included, (c) an initial TP evaluation and a follow-up visit (or two follow-up visits by TP) were done to an acute inpatient hospital, (d) tele-presenters were the psychiatry R and MS, and (e) optional TP physician audioconferencing to the daily treatment team meeting if requested by TP physician or any team member (no parties requested this). The R and MS were both educated on the principles, skills, and knowledge for TP and trained on the basic technology. All patients were English speakers.

Results/Case Series

Three of the 12 patients were selected for clinical vignettes due to complexities that arose during those TP sessions, and to explain the problem solving that was involved in these particular cases. Another reason a case was selected was to demonstrate the utility of TP and its potential benefits on the inpatient psychiatric unit.

Case 1: D.Q.

A 46-year-old female presented to the emergency department by family. She had not been eating or drinking, and she had been seen laughing unprovoked along with urinating herself. She had been previously admitted to mental health hospitals in the past. Initially, the patient seemed quite interested in meeting the attending physician by TP. After initial refusal of medications because D.Q. preferred quetiapine (had been maximized without benefit), she took olanzapine 5 mg QHS.

D.Q. had long unkempt brown hair, stood during the entire interview, leaned towards the screen, and provided short terse answers with minimal change of inflection, tone, or volume of voice. Mood was “okay” though affect was irritable and blunted. Thoughts were concrete, had worry themes and +SI; no HI, delusions or AH were noted, other than witnessing patient responding to internal stimuli when not being directly observed.

Patient was diagnosed with schizophrenia with negative symptom predominance that was initially treated with olanzapine 5 mg QHS; on TP day 2, patient refused to leave her room or participate in a telepsychiatric encounter. Nursing documentation from the EHR was used to determine patient had been tolerating medications without issue, but she had received minimal therapeutic benefit and decision was made by a telepsychiatrist to increase the olanzapine to 10 mg QHS. A multi-modal approach to treatment was utilized that

included education on diet exercise, sleep, and medication, as well as including individual supportive therapy and group interventions. Patient continued to improve during the remainder of her hospitalization and she was eventually discharged home with family on day 7.

Case 2: A.Q.

A 29-year-old English-speaking Hispanic American male presented in the emergency department due to depression, hopelessness, and suicidal ideation. The patient was admitted to the mental health hospital, where he denied all symptoms of mental illness. The inpatient telepsychiatrist provider was relieved, but wary that the patient's new "good" mood did not correspond with his restricted and flat affect. The telepsychiatrist started with routine questions but shifted to social questions after noting resistance to being interviewed and superficial participation. The provider utilized the Diagnostic and Statistical Manual Cultural Formulation Interview Format (CFI, American Psychiatric Association 2013). Questions focused on the patient's culture, heritage, and interpretation of his experience within his culture. He was born in Mexico and the family immigrated to the USA at age 3, so he grew up in California and became the first of his family to go to college. He had past periods of depression—that term was acceptable—but, "We never much talked about it." He was encouraged to "move on," go to church, and keep busy. The interview then was shifted back to a more traditional approach and patient was more forthcoming about his mood being poor along with experiencing command auditory hallucinations to harm self.

MSE The patient was withdrawn and anxious at first but warmed up over the first 15 min of the interview. His speech was notable for initial terse comments then more demonstrative descriptions; English appeared to be very well spoken. Mood was "depressed" and affect quite restricted. Thoughts were linear and the content included worry, hopelessness, and disbelief about the AH. His insight/judgment was fair, despite his initial hesitance to talk/share. He reported SI due to the intensity of AH, but not a preference to die; there was no HI. Cognition was intact.

A.Q. met the criteria for a recurrent depression, severe with psychotic features. He was agreeable to continue an antidepressant sertraline 50 mg AM and to start an antipsychotic olanzapine 5 mg HS, as he also had some insomnia. A.Q. was discharged home in 2 days with family. When inquired about his opinion over conducting interviews over telehealth, he stated he hardly noticed a difference and also remarked "It's pretty cool, I guess...we could really talk." Patient also stated he had a preference to retaining his telehealth provider instead of seeing a new provider in person, if given the option.

Case 3: R.N.

A 28-year-old female presented via emergency department (ED) for potential danger to self and others, as well as being gravely disabled. R.N. was delusional, manic, and paranoid; thought process was very disorganized. For TP, R.N. could not be directed to the conference room; she was seen shortly in person by another physician but would not interview.

MSE Patient had poor grooming and hygiene. Mood was "go away" coupled with an irritable, expansive, labile, and inappropriate affect. Thoughts were inappropriate and severely disorganized; unable to answer any questions.

R.N. did not make any meaningful participation in TP encounter despite multiple attempts; however, another attending psychiatrist on site, despite his high census, was able to do the initial assessment as well as all the necessary daily follow-ups. She was diagnosed with schizophrenia and was started on risperidone 1 mg BID, which was titrated up to 2 mg BID at day. R.N. received psychoeducation on diet, exercise, sleep, and medication. As her psychosis improved, she was more able to participate in one-on-one supportive psychotherapy and group therapy focusing on relaxation techniques and coping skills. Patient responded well to treatment and was able to be discharged home with family on hospital day 10.

Discussion/Conclusions

Rural populations are still underserved in terms of most psychiatric services. Preliminary research on TP has focused on outpatient care, consultation to primary care, and other non-acute settings. TP is effective for diagnosis and assessment across many populations (adult, child, geriatric, and ethnic), for disorders and cultures; it appears to be effective and comparable to in-person care (Hilty et al. 2013). Telepsychiatric care on the inpatient unit was feasible clinically and technically, with minor issues handled by staff on site. While a patient may refuse care via TP, it is not uncommon for involuntary patients to refuse physician visits, groups, and other services in person, too. The same is true for patients with a high level of psychotic disorganization, in which case a mobile telehealth unit may be more fitting (Hilty et al. 2018a).

Patients have a generally positive attitude towards the technology, and with the quality of the interaction seems to be similar to that of face-face care (Salmoiraghi and Hussain 2015). TP facilitates empowerment of patients and allows them to participate in decisions of care, which is consistent with participatory medicine in moving patients from being mere passengers to responsible drivers of their health (Frydman 2009). Patients reported in this case series that they enjoyed being seen over TP, with one patient reporting, "It's pretty cool, I guess ... we could really talk." Another patient diagnosed

with schizophrenia with severe negative symptoms was able to engage more over TP than she had with in-person providers, possibly due to the novelty of it; this has been reported before (Pakyurek et al. 2010). Going forward, she also stated having no preference towards in-person care or telehealth.

Our results align with the results of other telebehavioral health research in that TP can be successfully utilized in acute settings. High acuity, complex conditions, and other factors require a high standard of care. Telehealth could leverage behavioral health expertise where it is needed most if used in a more robust model with systematic assessment, biopsychosocial treatment, interdisciplinary planning, and an emergency in-person plan. If this program is continued, one clear upgrade would be teleconferencing into the interdisciplinary treatment plan team meeting daily for communication and integration of data.

Telebehavioral health care competencies across disciplines have been published and are suggested to ensure quality (Hilty et al. 2017; Maheu et al. 2018). Care delivered by TBH may require additional skills compared to in-person care (Hilty et al. 2017; Maheu et al. 2018). Preliminary telepsychiatric competences came out in 2015 and also provided methods of teaching, supervision, and evaluation, as well as institutional competencies for organizations to move forward (Hilty et al. 2015). Since then, additional ones have been done in social media in 2018 (Hilty et al. 2018c) and mobile health (Hilty et al. 2018a). Overall, competencies dovetail with lifelong learning (LLL) as a part of ongoing practice, as championed by the Institute of Medicine (2001).

There are limitations to this report and many future directions. First, this was not a study with a randomized design, longitudinal approach, or structured diagnostic evaluation. Second, the sample size is small. Third, this underserved population in a rural area may not be representative of other populations nationwide or internationally. Fourth, patient and provider objective measures of evaluation (e.g., clinical, satisfaction, other) were not used. Future directions include the need for more research TP to ED, inpatient psychiatry, and inpatient medical/surgical care settings, partly to evaluate if there is any pattern of hesitation to use TP for acute care. In addition, more research is needed for special populations (e.g., child and adolescent, geriatric, cognitively impaired), as these settings commonly have such patients. Finally, alternative models of care should be explored (e.g., on-site NP with support from a remote telepsychiatrist, psychotherapy).

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Compliance with Ethical Standards

Ethical Considerations IRB approval was not necessary due to this being a clinical care practice typical for this community and patients agreeing to participate in telepsychiatric care.

Conflict of Interest The authors declare that they have no conflict of interest.

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