

A Feasibility Study of the Use of Asynchronous Telepsychiatry for Psychiatric Consultations

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Objective: This study examined the feasibility of conducting psychiatric consultations using asynchronous, or store-and-forward, video-based telepsychiatry. **Methods:** Video-recorded 20- to 30-minute assessments of 60 nonemergency, English-speaking adult patients in a medically underserved county in California were uploaded along with other patient data to a Web-based record. Two psychiatrists then used the record to provide psychiatric consultations to the referring primary care providers. **Results:** Eighty-five percent of patients received diagnoses of mood disorders, 32% diagnoses of substance use disorders, 53% diagnoses of anxiety disorders, and 5% other axis I diagnoses. Psychiatrists recommended short-term medication changes for 95% of the patients and provided guidelines for possible future changes. **Conclusions:** This study—the first

study of asynchronous telepsychiatry to be published—demonstrated the feasibility of this approach. This type of assessment should not replace the face-to-face psychiatric interview, but it may be a very helpful additional process that improves access to care and expertise. (*Psychiatric Services* 61: 838–840, 2010)

There are substantial shortages of mental health care providers in rural America (1), and primary care providers serve as the sole clinical contact for the vast majority of patients with mental illness (2). Distance and limited resources prohibit the traditional kinds of specialty referrals seen in more developed regions (3). Telemedicine has been cited as providing at least a partial solution to these shortages and difficulties by linking distant specialists with rural providers.

Traditionally, there have been two main types of telemedicine: synchronous, which typically relies on live, two-way interactive video transmission to a remote area, and asynchronous (store-and-forward), which transmits clinical information via e-mail or Web applications for later review by a specialist. Synchronous communication used for psychiatric treatment, or telepsychiatry, has been well described in the literature, is diagnostically valid, and is associated with good clinical outcomes and high

patient satisfaction (4,5). This type of service, however, has not been implemented as widely as predicted because of administrative issues (for example, complex scheduling across clinics, patients, and providers), reimbursement and financial issues, long waiting times and a lack of specialists who are interested (6), and the absence of the required technical infrastructure in rural underserved areas (4,6).

Asynchronous telemedicine has been commonly used and well received by pathology, cardiology, radiology, dermatology, and other fields (7). Psychiatrists have long-standing expertise in providing consultations about patients without conducting a full face-to-face assessment (8–10), and this study addressed the feasibility of the next logical step, which is to develop a process for, and undertake a number of, asynchronous video-based telepsychiatry consultations.

Methods

We received funding to conduct a feasibility and interrater reliability study of asynchronous telepsychiatry. This brief report describes the feasibility component as approved by the University of California, Davis, Institutional Review Board. We undertook 60 asynchronous telepsychiatry consultations with English-speaking adult patients between April and November 2008. All participants were identified as having psychiatric problems that warranted a nonurgent psy-

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chiatric consultation. Patients gave informed consent before admission to the study and were paid \$100 each to take part. They were told that they would be provided with the consultation opinion if they wished.

All patients lived in Tulare County, which is designated as a medically underserved population area and a health care professional shortage area (11) and is 200 miles south of Sacramento. Between 20% and 25% of the population is disabled, and the percentage of the population with incomes below the poverty line is well above the national average (20.9% compared with 12.5%). The following workflow was developed to provide psychiatric consultations by asynchronous telepsychiatry. Tulare County primary care providers referred patients after explaining the project to them. A nonpsychiatrist research physician at the patient's primary care clinic in Tulare County obtained patient consent and collected data. The clinical component of the interview, which lasted between 20 and 30 minutes, was video-recorded and included a diagnostic assessment with the Mini-International Neuropsychiatric Interview (MINI) (12). The researcher then uploaded patient data and the video to our Web-based, specially designed, structured telepsychiatry consultation record, which is compliant with the Health Insurance Portability and Accountability Act.

The participating psychiatrists conducted the asynchronous telepsychiatry consultations at UC Davis. They reviewed all electronic data (video and health record) available on the Web record, including the MINI results, and then completed a structured consultation, which incorporated their overall best-fit *DSM-IV* diagnoses, a rating on the Global Assessment of Functioning (GAF) (13), and a comprehensive treatment plan. The consultation opinion was then transmitted electronically to the referring Tulare County provider, who was given the option of phone or e-mail follow-up consultations with the psychiatrist and, if required or deemed necessary by any of the providers, a face-to-face psychiatric consultation between the patient and one of the research psychiatrists.

Results

Of the 60 participants, 40 (67%) were women and 44 (73%) were Caucasian. Fourteen Latinos (23%), one African American (2%), and one Native American also participated. Ages ranged from 27 to 64 years (mean $\pm$ SD=47.6 $\pm$ 10.5). The patients received a mean of 2.2 $\pm$.94 diagnoses, and the mean GAF score was 59.25 $\pm$ 3.83. (Possible GAF scores range from 0 to 100, with higher scores indicating better functioning.)

The two psychiatrists who conducted the consultations for this study gave 51 active diagnoses (85%) of mood disorders, 19 (32%) diagnoses of substance use disorders, 32 (53%) diagnoses of anxiety disorders, and three (5%) other axis I diagnoses (kleptomania, schizophrenia, and parasomnia not otherwise specified). Five (8%) axis II disorders were also diagnosed among the participants (borderline personality disorder, obsessive compulsive personality, and personality disorder not otherwise specified). Many patients reported a history of substance abuse (N=13, 22%), and 17 (28%) had co-occurring disorders. One patient was referred for a face-to-face consultation with the psychiatrist because of the possibility of early psychosis. Psychiatrists recommended additional laboratory investigations for 50 patients (83%), and for 57 patients (95%) they made recommendations for short-term medication changes, such as increasing or decreasing dosages of antidepressants. The primary care providers for all 57 (95%) patients who received a medication change recommendation were also provided with a long-term treatment plan, which included several choices of medications to try over a six-month period. A wide range of psychotherapies was also recommended, including individual supportive, cognitive-behavioral, and psychodynamic therapies, as well as couple, family, and group therapy and substance abuse counseling.

Discussion and conclusions

The process of asynchronous telepsychiatry developed to provide consultations for patients in a medically underserved county was shown to be feasible. The first 60 patients were

typical of nonurgent patients referred for psychiatric assessment in primary care settings. Most received diagnoses of depression, anxiety, or substance use disorder (14). Average GAF scores were comparable to those in a typical outpatient psychiatric sample (13). Many patients had co-occurring disorders and a long history of substance use problems. The psychiatrists recommended additional medical testing probably more frequently than necessary because they did not have access to patients' primary care records to determine whether tests had recently been performed.

We believe that this assessment approach worked well for primary care providers, patients, and psychiatrists. The primary care providers have continued to refer patients and have reported that their patients benefited. One commented, "The service worked great for me and the patients that I referred. It was a short time to be seen, and the patients all reported that they enjoyed the encounter. . . . I liked the reports, and I sat and discussed them with the patients. I felt it worked well."

For this research study the two psychiatrists provided written feedback to referring providers within two weeks; however, feedback could be provided within 24 hours if asynchronous telepsychiatry were to become a regular clinical service. This study used experienced psychiatrists who have done several thousand synchronous telepsychiatry consultations and hundreds of asynchronous phone and e-mail consultations with primary care providers. Special training might be necessary for psychiatrists who are less familiar with technology and the consultation approach used in psychosomatic medicine.

Stepped models of collaborative care in primary care have been well described (15). We believe that if asynchronous telepsychiatry were instituted in routine clinical practice, it would be suitable for up to 80% of patients requiring assessment.

Asynchronous telepsychiatry challenges some fundamental assumptions about medical care. It is our opinion that the typical medical consultation can be broken down into

three major elements, which technically do not have to be delivered simultaneously. These elements are data collection (history taking from all sources and examination), data analysis (diagnosis), and project planning (treatment planning) (10). In most cases the two psychiatrists completed the consultations in a maximum of 30 minutes, which is much less time than the standard one-hour, face-to-face consultation for a new patient. The approach also has scheduling flexibility—that is, consultations can be done during “down time”—and could be extended to other psychiatrists from many geographic areas and to licensed social workers or psychologists, which would further increase patient access.

The next stage of our project is to examine the asynchronous telepsychiatry process across English and Spanish languages, as well as to examine diagnostic validity, inter-rater reliability, and patient and provider satisfaction. We hope that the project will validate asynchronous telepsychiatry for assessments in many languages and countries.

We believe this feasibility study of asynchronous telepsychiatry is of great potential importance and demonstrates a significant advance in assessment capacity that would not have been available without the multimedia capacities of the Internet (10). The approach could be used by the military, in many different rural and metropolitan settings, and in a number of other disciplines besides psychiatry, such as neurology, endocrinology, rehabilitation medicine,

geriatrics, pediatrics, and rheumatology, and it signals the beginning of the true multimedia electronic medical record.

Although this approach to psychiatric assessment is promising, some limitations exist, and it is not suitable for all patient populations, especially those who are dangerous to themselves or others or who refuse to be recorded. We are not suggesting that this type of assessment should replace the traditional face-to-face psychiatric interview, even if this were possible, but it may be a very helpful additional process that improves access to care and expertise.

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