

# A Comparison of Telepsychiatric Versus Face-to-Face Care in a Rural Community Mental Health Setting

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## INTRODUCTION

This paper describes the implementation of a telepsychiatric clinic in a general adult outpatient population located in a rural Iowa county. The quality of clinical care in a telemedicine clinic was compared with that provided in a face-to-face clinic. Quality was measured by a patient survey of satisfaction in several domains in addition to a clinician-reported measure of functional status.

## METHODS

During the 12-month study period (October 1, 1997, to September 30, 1998), psychiatric care was provided to patients at two rural sites. At the experimental site, services were provided through telemedicine; at the comparison site, services were provided through traditional, onsite, face-to-face contact. At each study site, 12 clinics were held, with 1 clinic per month at each site. One psychiatrist (BMR) provided all psychiatric visits at all of the telemedicine clinics. A different psychiatrist provided services at the majority (10 of 12) of the face-to-face clinics.

At the telemedicine and face-to-face sites, patient satisfaction was measured by responses recorded by a self-reported satisfaction survey instrument, the "Satisfaction with Ambulatory Services 4.0 Adult version"<sup>1</sup>. The 12 survey items were adapted from other sources<sup>2</sup> with established reliability (i.e., Cronbach's alpha from .77 to .95) and validity (content and construct). The survey included questions on access to services, technical skills of the clinic staff, qualities of the patient-provider interaction, and overall satisfaction with care. Responses to all questions were rated on a scale of 1 (poor) to 5 (excellent).

A second 11-item survey instrument<sup>3</sup> was also administered at the completion of each telemedicine visit and was used to assess satisfaction with the quality of telemedicine interaction. Clinical status was assessed by calculation of a global assessment of functioning (GAF)<sup>4</sup> score at the end of each patient visit. Subjects were older than 18 years of age, able to provide informed consent, and without evidence of significant dementia, substance abuse, violent or suicidal behavior, or primary diagnoses of borderline or antisocial personality disorder.

## TECHNOLOGY AND EQUIPMENT USED

The equipment used at the hospital (transmission) site was an NEC rollabout unit and, at the remote site, an NEC Teledoc rollabout unit. Both units were

located in the emergency room areas of their respective hospitals. The transmission bandwidth used was 768 Kbps (1/2 of a T-1) over an Integrated Services Digital Network Primary Rate Interface with 12 channels.

## RESULTS

Over the course of the study, 12 persons were enrolled at the telemedicine site, and 13 subjects were enrolled at the face-to-face comparison site. In the telemedicine clinic, 12 patients had a total of 47 patient contacts. At the face-to-face comparison site, 13 patients had 29 patient contacts. There were no differences in either initial GAF or change in GAF between the groups.

Satisfaction ratings by the telemedicine and face-to-face comparison groups following the first two visits at each site are shown in Table 1 below. Overall satisfaction with care following the first visit was similar for both groups (4.1 for the telemedicine group versus 4.3 for the face-to-face comparison group) and was equally rated by both groups of patients following their second visits (4.4). In a separate survey instrument, telemedicine subjects were asked to assess the adequacy of communication via telemedicine. Several respondents indicated that they had preexisting problems with seeing and hearing, which was not unexpected given the age of the telemedicine subjects. Of the 12 patients who provided a response to this question, a large proportion of patients reported difficulty seeing (5 of 12) and difficulty hearing (4 of 12) the specialist over the telemedicine system. However, when asked to assess the overall adequacy of the communication, 11 of 12 patients rated communication as adequate. When asked to evaluate their willingness to use telemedicine again following completion of the first visit, 9 of 12 respondents indicated that they would be more willing to use telemedicine after the first visit than they had been prior to the first visit. When asked if they would recommend this service to their families and friends, 7 of 12 responded "definitely yes," 4 responded "probably yes," and only 1 respondent said that he or she would "probably not" recommend the telemedicine clinic to family or friends. Interestingly, following their second visit, telemedicine patients were more likely to recommend the clinic to family and friends compared with patients in the face-to-face clinic (1.1 versus 1.5).

Table 1. Satisfaction Ratings by Telemedicine and Face-to-Face Groups

Satisfaction Ratings	Telemedicine N=9		Face-to-Face N=7	
	Visit 1	Visit 2	Visit 1	Visit 2
Convenience of clinic	4.0	4.1	3.5	3.8
Ease of seeing provider of choice	4.3	4.1	4.2	4.8
Technical skills	4.1	4.5	4.3	4.7
Attention (listening)	4.6	4.8	4.5	4.7
Time spent with clinic staff	4.3	4.6	4.3	4.3
Outcome of medical care	3.6	4.3	4.2	4.5
Helpfulness of instruction	3.8	4.3	4.2	4.3
Eye contact with physician	4.0	4.3	4.7	4.8

### DISCUSSION

The findings of this study suggest that persons who live in rural areas who receive psychiatric services via telemedicine report service satisfaction with telemedicine that is equivalent to that of persons who receive psychiatric services at an onsite clinic. There was no evidence that the clinical status of persons enrolled in the telepsychiatric clinic deteriorated relative to that of patients followed in a traditional face-to-face clinic over the same time period. Furthermore, although the sample size is small, telepsychiatry appears to be an acceptable mechanism of psychiatric outreach to persons in rural areas who are elderly. Even with a higher likelihood of hearing and visual problems, the limited data in the present study suggest that older patients are willing to accept psychiatric services and are able to communicate their clinical concerns via telemedicine.

A major limitation of this study is its small sample size. A small-scale study of this type should be regarded as a pilot demonstration and not a full-scale evaluation. In addition, a Hawthorn effect could occur. Since the psychiatrists are not blinded, they could inadvertently bias the results. Since only two psychiatrists were involved in the present study, unique physician characteristics and practice styles could influence the outcome. The crossover design employed in the continuation of the present study will partially compensate for this effect, since the reversal of changes in variables after the intervention is withdrawn would support the validity of the findings.

### CONCLUSIONS

From the results of this study, we conclude that telemedicine provides an acceptable and adequate

means of psychiatric service delivery to patients who live in rural areas, including service to persons who are elderly. Is telemedicine the solution to the problem of limited psychiatric services for areas underserved by mental health specialists? Although telemedicine is unlikely to provide the single solution to a complex problem, the provision of psychiatric services via telemedicine should not be overlooked as an important component in an integrated rural health care delivery system.

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