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Effects of Telepsychiatry on the Doctor-Patient Relationship: Communication, Satisfaction, and Relevant Issues

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Abstract

Telepsychiatry offers enormous opportunities for clinical care, education, research, and administration in the field of medicine. This article reviews the telepsychiatric literature—specifically videoconferencing—to evaluate effects of telepsychiatry on the doctor-patient relationship. A review was conducted of the MEDLINE, PsycINFO, Embase, Science Citation Index, Social Sciences Citation Index, and Telemedicine Information Exchange databases (July 1965–June 2001). Preliminary studies report no major impediments to the development of the doctor-patient relationship in terms of communication and satisfaction. Evaluation is currently limited by uncontrolled trials that measure ill-defined terms or concepts. Many personal, professional, technical, psychological, and social factors influence how telepsychiatry is experienced in the doctor-patient relationship. More prospective, randomized, quantitative, and qualitative research is needed.

Introduction

Telepsychiatry offers enormous opportunities for clinical care, education, research, and administration in the field of medicine. One significant advantage of telepsychiatry has been improvement of access to psychiatric care in urban,¹ suburban,² and rural^{3,4} areas, often by providing academic specialists to areas with provider shortages.⁵ Videoconferencing is live, interactive, audio/video communication or television. Typical equipment for videoconferencing includes Pentium computers with 128–512 megabytes of random access memory (RAM), cameras with local and remote pan-tilt-zoom control, color monitors, and a coder-decoder (CODEC) for converting the audio and visual information into the binary code for transmission. Dial-up integrated service digital network (ISDN) or T1 lines are rented, with transmission at speeds of 128–768 kilobits per second (KBS).

The assessment of telepsychiatry's impact on the doctor-patient relationship is complicated by the many types of patients, settings, and practice styles for which it is employed. Patient types vary by mental disorder, age, culture, and setting. Sites of service include primary care and mental health clinics, medical and psychiatric emergency rooms, nursing homes, shelters, hospices, schools, forensic facilities, the battlefield, public health, and academic centers.⁶ One-time evaluation by consultation-liaison or private psychiatric practice, ongoing evaluation, and psychiatric management services have been provided.

This article discusses the effect of telepsychiatry on the doctor-patient relationship, including data, concepts, and theories about how communication, satisfaction, and other factors affect development of the relationship. Problems with reports in the literature will be discussed to suggest improvements in quantitative and qualitative research.

Methods

A comprehensive review of the telepsychiatric literature was conducted in the MEDLINE, PsycINFO, Embase, Science Citation Index, Social Sciences Citation Index, and Telemedicine Information Exchange databases, from July 1965–June 2001, using the keywords telepsychiatry, telemedicine, videoconferencing, doctor, physician, patient, relationship, communication, verbal, nonverbal, and satisfaction. Articles were

selected for review if they mentioned such aspects in the title or abstract. From the articles selected, salient referenced articles were also obtained and reviewed.

Results

Communication

A host of factors affect perception of the telemedicine visit and communication by participants. Disclosure is affected by the presence of others in the room, belief of being videotaped, and stigma. In addition, if participants have never used telemedicine before, they may feel anxious, distracted due to the equipment, and self-conscious when seeing themselves on the screen.

A critical variable in communication is telemedicine's ability to simulate real-time experiences in terms of image and interaction. The speed of transmission has a profound affect on audio and video quality. Most services transmit 128–768 KBS. Terrestrial transmission at 128 KBS provides a good picture with a signal delay of 0.3 seconds, whereas 768 KBS may have almost no delay. Satellite transmission involves a delay of 0.5–1.0 seconds, as seen on worldwide broadcasts. Equipment problems (poor audio or video, lack of camera control, disconnection) affect communication, but are rarely reported. The most important issue is having technology adequate for the clinical task at hand and putting alternative plans in place if a limitation exists (eg, a primary care physician evaluates a tremor which cannot be seen).

Signal delay is caused by time to process (digitalize) and transmit the signal.⁷ Conversation is the main mode of communication in therapy and is essential for the building of rapport. With slight delays in signal (eg, 0.3 seconds), a turn-taking conversation occurs rather than the free-flowing conversation indicative of a high-rapport interaction.⁸ In addition, collisions take place as parties speak at the same time and perceive the other as interrupting. No differences with the development of rapport were found in a small cohort comparing signal delays of 0, 0.3, and 1.0 seconds, as measured on self-report questionnaires.⁷

Another concept that bears on communication is presence, as recently reviewed by Turner.⁹ Kim and colleagues¹⁰ defined presence as "... the fact or condition of being at the specified or understood place." They postulate that physical and virtual environments affect presence: In a physical environment, informational cues are incorporated without conscious awareness (eg, a patient is seen walking in a reticent way). Participants need to be aware that the virtual environment created by telemedicine is not the same as a regular physical environment as cues are missing.¹⁰ Currently, it is assumed that the videoconferencing provides "enough" of the physical environment for good decision-making, but differences may occur between the environments. Cukor and colleagues¹¹ reported that telepsychiatry facilitates a "social presence" that permits participants to share a virtual space, get to know one another, and discuss complex issues, even when low-cost systems are used.

A few studies evaluated the effect of telemedicine on nonverbal communication, which fundamentally establishes mutual connections and understanding. Examples are eye contact, gestures, posture, fidgeting, nods, grins, smiles, frowns, and lip-reading.¹² Decreased ability to detect nonverbal cues has been reported during videoconferencing of patient interviews.¹³ This has been previously described as the “cuelessness” phenomenon.¹⁴ A task-oriented focus with a depersonalized content may occur.¹⁵ On a spectrum of detecting cues, telepsychiatry may be the cross between the telephone and in-person communication.¹⁶

Ball and colleagues¹⁷ compared communication behaviors between six physicians and six patients using in-person, telephone, hands-free telephone, and low-cost telepsychiatry (KBS not specified) modes. Higher levels (75% of the time) of mutual gaze were recorded for the visual modes (in-person and telepsychiatry), which was higher than usual interpersonal interactions (~50%).¹⁸ Self-report questionnaires by patients revealed lower levels of anxiety in the visual modes, but some sense of having been misunderstood. Physicians reported increased anxiety, but a better understanding of patients with the visual modes.

The nature of what is exchanged also varies depending on the mode used. Information exchange takes place primarily on an audio channel rather than a video channel.^{11,19,20} Participants respond in a “conservative” or “stilted” way when audio delay occurs with videoconferencing,¹² resulting in more interruptions of the interview than with video disruption.²¹ For the same conversation, in-person takes less time than telephone, which in turn, takes less time than videoconferencing.^{19,20}

Some worry that telemedicine may adversely affect the development of a positive therapeutic alliance because of potential limitations: They suggest that a preexistent relationship is necessary to minimize the potential negative effects of telepsychiatry. In a study using the California Psychotherapy Alliance Scale, 41 patients and psychiatrists were randomly assigned to a diagnostic interview by either in-person or telepsychiatry (KBS not specified).²² Manchanda and colleagues²³ used the Working Alliance Inventory scale to assess therapeutic alliance during videoconferencing at 128 KBS. Neither significantly interfered with the development of an alliance.

Overall, telepsychiatry appears to have advantages and disadvantages with regard to communication (Table 1).

Table 1
Advantages and Disadvantages of Telepsychiatry and Communication

Advantages

- Increased mutual gaze, which may help with understanding
- Better nonverbal cues than telephone
- Increased access to care, particularly in rural areas; less travel for all
- Increased opportunities for clinical care and education
- Less anxiety provoking for some, due to “distance”

Disadvantages

- Fewer nonverbal cues than in-person consultation
- Anxiety on the part of participants
- Decreased level of understanding
- Increased time to communicate same information compared to in-person and telephone modes
- Requires more collaboration and coordination between parties

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Satisfaction With Telepsychiatry

Standardized assessment of satisfaction is a key determinant of whether telepsychiatry will be integrated into medical practice. A review of the telehealth studies on satisfaction revealed many limitations: few randomized trials, small samples, use of short (one or two items) quantitative questionnaires, lack of standardization in terminology, and confounding variables.²⁴ Another systematic review of 32 satisfaction telemedicine studies, including nine of telepsychiatry, cited variable designs and unspecified criteria for patient selection.²⁵

When asked what it might be like to have a telemedicine visit, some patients expected a less satisfactory physician-patient interaction than in a traditional physician-patient encounter.²⁶ Other patients preferred telepsychiatry for their care. McLaren and colleagues¹³ reported that increased interpersonal distance by telepsychiatry enhanced communication. Impressions of patients for whom telepsychiatry is indicated, contraindicated, or the treatment of choice, are listed in Table 2. Further research is required on this subject.

Table 2
Disorders for Which Telepsychiatry May Be Treatment of Choice, Indicated, or Possibly Contraindicated

Treatment of Choice

- Social anxiety disorder
- Agoraphobia
- Deafness, with no access to translators, or with preference for direct communication with a psychiatrist with such skills
- Disorders that require services which are impossible to access otherwise

Indicated

- Depression
- Most anxiety disorders: some will need assistance (eg, acute panic attack*)
- Psychosis
- Dementia*
- Attention-deficit/hyperactivity disorder
- Transplant disorder evaluations

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Possibly Contraindicated:

- Severe agitation, even with staff present
- Significant hearing impairment
- Psychoses with specific delusions about technology (as they may precipitate dangerous behavior)

* Need family or staff present to assist, as with usual care.

† Consultations with only the physician, staff, and family present may still be possible.

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Expectations for telepsychiatry service come into play for both patients and telepsychiatrists. For example, a patient may be expecting psychotherapy, while the primary care provider may prefer medication management. Both, one, or neither of these expectations may be accommodated by the telepsychiatrist if a consultation-liaison service model is being used to “train” the primary care physician.² Telepsychiatry may not fit into a physician’s idea of practice, despite an understanding of advantages to patients and systems.²⁷ Finally, patients and psychiatrists may experience a “break” in the doctor-patient relationship due to telepsychiatry,²⁷ as experienced by the fields of internal medicine, pathology, and surgery.²⁸

Patient Satisfaction Studies

Patient satisfaction studies are summarized in Table 3.²⁹⁻⁴³ Key predictors of satisfaction with telepsychiatry have not been clearly delineated, though transmission speed is an important variable. Current predictors include type of care provided,¹⁶ frame speed (eg, 30 frames/second is television quality),⁴⁴ demographic factors (eg, age, gender, or ethnicity),² state- and trait-dependent factors (eg, acute depression versus depression in remission),² cost, reduced time to travel,^{33,40} reduced waiting time, and satisfaction with and availability of local services. Dimensions like technical quality of care, financing, physical environment, continuity, humanity, efficacy, competence, empathy, trust, cooperation, safety, and autonomy are assessed less frequently assessed.²⁴

Table 3
Studies of Patient Satisfaction With Telepsychiatry

Study	N	Participants	KBS/frames	Location	Comment(s)
Baer et al ²⁹	26	Patients with OCD	128/NS	US	Equal to or better than in-person care
Baigent et al ³⁰	63	Adult state hospital inpatients	128/NS	Australia	Many patients were satisfied and preferred it to in-person consultation
Blackmon et al ³¹	43	Child outpatients	NS/NS	US	Parent satisfaction was very good
Bratton et al ³²	20	Geriatric patients in a retirement community	128/NS	US	Satisfied despite problems with hearing and poor image
Callahan et al ³³	93	Adult primary care outpatients	128/15	US	Equal to a nonpsychiatric population
Chae et al ³⁴	30	Adult outpatients	33/NS	Korea	Equal to usual in-person care
Dongier et al ³⁵	50	Adult and child outpatient	Closed circuit television/NS	Canada	Equal to usual in-person care
Etford et al ³⁶	23	Children and parents; psychiatrist	336/NS	US	Patients: doctor diagnosis and treatment recommendations equal to usual in-person care; psychiatrists: decreased satisfaction versus usual in-person care
Etford et al ³⁶	30	Children, adolescents, and parents	336/NS	US	All noted anxiety starting that abated through the interview. Overall satisfaction for parents was 4.9 and for adolescents was 4.6, on a 5-point Likert scale
Graham ³⁷	39	Adult outpatients	768/NS	US	Positive patient acceptance of telepsychiatry aftercare (90% positive ratings)
Hilty et al ³⁸	40	Adult primary care outpatients	384/15	US	Equal to in-person when patient given the choice: 71% pick in-person evaluation and 65% pick in-person follow-up
Johnston et al ³⁹	40	Nursing facility residents	128/NS	US	Patients and families expressed appreciation for the service
Kopel et al ⁴⁰	82	Child rural outpatients	NS	Australia	Over 90% rated the service "good" or "excellent" on quality and overall satisfaction; 90% rated it "as good as" in-person.
McCloskey et al ⁴¹	236	Adult outpatients	128/NS	US	High satisfaction; would have had to travel significantly
Mielonen et al ⁴²	14	Adult inpatients	NS/NS	Finland	High patient satisfaction; 80% considered it useful
Ruskin et al ⁴³	NA	Geriatric outpatients	NA	US	Similar to adult satisfaction
Trott et al ⁴⁴	50	Adult and child outpatients	NS/NS	Australia	Equal to usual in-person care; psychiatrist satisfaction: lower than in-person

KBS=kilobits per second; OCD=obsessive-compulsive disorder; NS=not specified; US=United States; NA=not available.
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Clinicians have wondered if satisfaction differs for patients seen for mental health versus other specialty problems. A prospective, open study by Callahan and colleagues compared patient satisfaction for psychiatry (N=31) versus other specialty services via telemedicine (N=51).³³ There was no significant difference on patient rating between the groups in terms of their ability to speak freely when using telemedicine, their preference for using telemedicine on subsequent visits, and their experience of the telemedicine physician. A larger study (N=221) reported similar results from a prison population.⁴⁵

Several open studies have assessed patient satisfaction with telepsychiatry in adult, child, adolescent, and geriatric patients.^{32,46} Generally, satisfaction is high and problems that occur do not appear to have a detrimental effect on the relationship.

A randomized trial of children and adolescents reported similar findings.¹⁵ Geriatric satisfaction was similar to that of younger adults.^{42,44} Table 3 lists these and other studies which have informally evaluated satisfaction with small samples and/or in combination with a study on reliability, outcomes, or cost.^{6,35,39,47,48}

Many studies have compared telepsychiatry to in-person care, but relatively few have assessed satisfaction in a detailed, prospective fashion. Dongier and colleagues³⁵ found no difference in patient satisfaction between telemedicine (N=50) and usual care (N=35) for adults and children in a comparison with in-person care. In a longitudinal study, Hilty and colleagues² offered primary care patients the opportunity to select their preference (telepsychiatry or in-person) for evaluation and follow-up care (if applicable). The groups were controlled for the clinic attended, length of waiting time, presence of insurance, demographic information, and diagnoses. More patients chose in-person care for initial (71%) and follow-up (65%) appointments. The appointment adherence rate was similar between the groups. No studies have collected information on patients who refused to participate or who dropped out without completing standard questionnaires—a key deficit in the data.

Studies of Provider Satisfaction

It is unclear whether variables that have been shown or proposed to affect patient satisfaction are relevant to physician satisfaction, and additional variables not mentioned here are likely to affect satisfaction. Primary care satisfaction has been evaluated in a number of ways and provider satisfaction studies are summarized in Table 4. Hilty and colleagues⁴⁸ reported that primary care physician satisfaction, as measured by self-report questionnaires, was high initially with psychiatric consultation-liaison service and improved compared to baseline after two or more consultations over a 1-year period; this was statistically higher for rural than suburban/urban physicians. This finding was attributed to limited access to psychiatric care for patients in rural areas, who preferred consultation rather than management. On the other hand, some providers may prefer to refer patients to a psychiatrist rather than manage the case themselves.

Table 4

Telepsychiatry Provider Satisfaction Studies

Study	N	Participants	KBS/frames	Location	Comment(s)
Clarke ⁴⁷	32	Nurses and physicians in rural clinics	128/NS	Australia	Nurse satisfaction was greater than physician satisfaction
Dongier et al ³⁵	50	Psychiatrists	CCT/NS	Canada	Lower than for in-person care in terms of ease, ability to express, and quality of the relationship.
Hilty et al ³⁸	40	Rural versus urban/suburban primary care physicians	384/15	US	Rural satisfaction was greater than urban/suburban initially and at 1 year follow-up, though satisfaction increased for all
Hilty et al ³⁸	228	Primary care physicians	384/15	US	Satisfaction with telepsychiatry (n=28) equal to that with care by other specialties (n=200)
Hilty et al ³⁸	56	Psychiatrists	384/15	US	Overall satisfaction at 6.6 on an 8-point Likert scale
Kopel et al ³⁹	101	Rural clinicians	NS	Australia	Over 90% rated quality as "good" or "excellent" and "as good as" in-person
Kopel et al ³⁹	136	Child psychiatrists	NS	Australia	Overall satisfaction 2.1 on a 4-point Likert scale

KBS=kilobits per second; NS=not specified; CCT=closed circuit television; US=United States.

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Kopel and colleagues³⁹ reported rural clinician (n=101) and psychiatrist satisfaction (n=136). When including "good" or "excellent" on a 4-point Likert scale, the physicians rated the quality highly and reported overall satisfaction of 89% to 100%; over 97% felt consultation was as good as in-person care. Finally, primary care provider satisfaction may also depend on the development of a relationship with the consulting psychiatrist through a meeting, previous phone calls, requests for teaching, and referrals of "VIP" patients outside regular channels.

Psychiatrist satisfaction has only rarely been formally evaluated and shows mixed results. Concerns surfaced about technical problems (eg, unclear picture, video freeze), decreased ease with the process, decreased ability to express oneself, and poorer quality of the interpersonal relationship.^{6,15,35}

In a study of 200 telepsychiatric consultations, telepsychiatrists rated their overall satisfaction with telepsychiatry at 6.6 and the quality of the audiotransmission and videotransmission at 6.8 on a scale of 1 (poor) to 8 (excellent).⁶ Similar overall results, including improvement over time,⁴⁹ were reported by others. Kopel and colleagues³⁹ reported child psychiatrist satisfaction (N=136) on a 4-point Likert scale, with a mean satisfaction of 2.1. Finally, findings were similar for a study by Elford and colleagues³⁶ which included adolescents. Other rudimentary issues likely to impact satisfaction are ability to use one's regular screening questionnaires, obtaining adequate information from others, easy access to other providers (if any), and collaboration or cooperation with telecoordinators (since they may not be directly hired by the psychiatrist).

Dermatologists, otolaryngologists, pathologists, and psychiatrists reported the following positive aspects: less traveling, more time for other work, less need to travel in poor weather, new opportunities, and an increased sense of professional security.⁵⁰

Conclusions

Telepsychiatry offers enormous opportunities for clinical care, education, research, and administration in the field of medicine. Each new technology offers advantages and disadvantages to what is currently offered. Based on preliminary studies, relationship building appears possible via telepsychiatry, which offers clear advantages compared to telephone consultation or no care at all. Still, telepsychiatry has disadvantages compared to in-person care (eg, limiting nonverbal communication), although these drawback are not fully understood. Telepsychiatry offers an opportunity to evaluate new options for care and new models for providing care, and to reflect on nontelepsychiatric practice (since reaction to telepsychiatry is partly due to how the individual physician typically practices). It is also an opportunity for the field to collaborate with other fields that intersect with medical practice regarding telepsychiatry.

It is clear that more rigorous research is indicated for telepsychiatry. Quantitative measurement of satisfaction and its effects on communication and the clinical relationship also need to be more specific to a particular variable. Researchers need to better define terms and concepts, use standardized methods, and incorporate randomized designs. Telepsychiatric satisfaction may change over time such that baseline and follow-up assessments are indicated. Qualitative measurement will help identify hypotheses and theories that can be further assessed. **PP**

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