

Telepsychiatry and patient–provider concordance

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Abstract

Context: Telepsychiatry has become a common modality for the provision of psychiatric consultations to patients in rural regions.

Aims: The aims of this study were to assess and compare patient and provider satisfaction and perceptions of access to care with telepsychiatry.

Methods: Telepsychiatric consultations were given by providers based on an urban tertiary academic health centre to patients located in rural primary care clinics.

Results: Patients ($n = 110$) and providers ($n = 10$) were both highly satisfied with telepsychiatry and both believed that telepsychiatry provided patients with better access to care. Paired patient and provider survey results demonstrated a high level of concordance between patients and provider responses.

Conclusions: Concordance between patient and provider satisfaction may contribute to adherence and positive treatment outcomes. These results provide support for the use of telepsychiatry consultations to improve patient access to psychiatric care in rural regions.

Keywords: Access to care, patient satisfaction, provider satisfaction, rural, telepsychiatry

Contexte: La télépsychiatrie est maintenant une modalité courante de prestation de services psychiatriques aux patients vivant en régions rurales.

Objectifs: Cette étude avait pour objectif d'évaluer et de comparer la satisfaction et la perception des patients et des fournisseurs de soins quant à l'accès aux soins par l'entremise de la télépsychiatrie.

Méthodes: Des consultations de télépsychiatrie dans un centre universitaire de santé tertiaire en milieu urbain ont été dispensées à des patients situés dans des cliniques de première ligne en milieu rural.

Résultats: Les patients ($n = 110$) et fournisseurs de soins ($n = 10$) étaient très satisfaits de la télépsychiatrie et croyaient dans les deux cas qu'elle donnait aux patients un meilleur accès aux soins. Les résultats jumelés à une enquête auprès des patients et des fournisseurs de soins ont démontré une grande concordance entre les réponses des patients et celles des fournisseurs de soins.

Conclusions: La concordance entre la satisfaction des patients et celle des fournisseurs de soins pourrait favoriser l'observance et des résultats thérapeutiques positifs. Ces résultats appuient le recours aux consultations de télépsychiatrie pour améliorer l'accès aux soins psychiatriques en régions rurales.

Mots-clés: Accès aux soins, satisfaction des patients, satisfaction des fournisseurs, rural, télépsychiatrie

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INTRODUCTION

Ontario, Canada, is a large province with approximately 14.6 million inhabitants. Approximately 12.8 million live in urban regions and 1.8 million live in rural regions.¹ It has been demonstrated that Canadian patients in rural and remote areas experience worse health outcomes than their urban counterparts.^{2,3} The provision of psychiatric services to geographically isolated regions is a challenge, in part due to the difficulty in recruiting mental health specialists to practise in rural regions.⁴⁻⁶ Service providers in Eastern Ontario, where 400,000 people reside in rural areas, have responded to these challenges by creating alternative modes of service delivery to ensure access to specialised psychiatric care for rural inhabitants.

One of these modes of service delivery is telepsychiatry, which is a form of telemedicine that allows psychiatric consultations from an urban psychiatrist to a rural patient. In order to provide this service in Eastern Ontario, a telepsychiatric consultation programme was developed with partner sites. While telepsychiatry has been available for many years, the uptake of this practice has been slow due to multiple barriers to implementation, including technological and privacy concerns, and resistance to change among providers.^{7,8} Despite these barriers, telepsychiatry has been shown to be effective while increasing access to care, including geographic access to care.^{8,9} Research shows overall patient satisfaction with telepsychiatry, including with consultation appointments.^{9,10} Provider satisfaction with telepsychiatry has also been shown to be positive although more reserved compared with that of patients.¹¹ While several studies have captured both patients' and providers' perceptions of satisfaction with telepsychiatry, there is a dearth of literature which examines the concordance of patients' perceptions of satisfaction and access with the providers' perceptions of the telepsychiatric consultations.¹²⁻¹⁴ This is important because greater patient-provider concordance is associated with positive health outcomes.¹⁵ In addition, the authors are aware of only one study that examined both patient and provider satisfaction of telepsychiatry in a Canadian context.¹² To fill these gaps in the literature, and with a view to help inform the delivery of quality, accessible and acceptable telepsychiatric care, the objectives of

this study were twofold which are described as follows: the primary objective was to assess patient and provider perceptions of telepsychiatry (i.e., access to care and satisfaction with the service) in a Canadian sample, and the secondary objective was to assess the level of concordance between patients and providers.

METHODS

Setting

The current study was conducted at a tertiary academic site in Ottawa with an on-site telepsychiatry programme along with rural primary healthcare sites located throughout Eastern Ontario. The partner sites were situated at a minimum distance of 65 km and a maximum distance of 200 km from the tertiary academic site. Partner sites were selected to be evenly distributed throughout the region, and they were screened to ensure that they had adequate staffing (e.g., a nurse coordinator) and the physical environment (i.e. a private space with adequate lighting) required to support telepsychiatric consultation appointments. All partner sites used telemedicine equipment approved by the Ontario Telemedicine Network.

Participants and procedure

Participants were outpatients who attended telepsychiatry consultation appointments between February and October 2016 from one of the rural partner sites and providers were those who provided consultations from the tertiary academic site. All participants were recruited immediately following the appointments and completed surveys measuring their perceptions of access and satisfaction with telepsychiatric consultations. Informed consent was obtained from all participants upon recruitment. This study was approved by the Royal Ottawa Health Care Group Research Ethics Board.

Measures

Patient and provider questionnaires

The patient questionnaire contained a short demographic section. Both the provider and the patient questionnaires were designed to measure the perceptions of access and satisfaction

with telepsychiatry sessions. The items in the questionnaires were adapted from other published surveys used in similar evaluations of telepsychiatry and were selected to capture important aspects of the patient experience with telepsychiatry consultations. Each item used a 5-point Likert response scale, with responses ranging from 'strongly disagree' to 'strongly agree'.¹⁶⁻¹⁸

Data analysis

Analyses were performed using SPSS software version 24 (IBM Corp., Armonk, NY, USA).¹⁹ Patient and provider responses to survey items were summarised with frequency counts and percentages. Bennett *et al.*'s coefficient *S* was used as the index of concordance between patients' and providers' responses to paired survey items.²⁰ *S* yields values ranging from -1, representing absolute discordance, to 1, representing absolute concordance, with value of 0 representing the proportion of concordance that would be expected by chance based on the number of response categories. The 5-point response scale used in the survey was collapsed to three response categories (i.e. "disagree", "neither agree nor disagree" and "agree") prior to calculating *S*. The statistical level of significance was set at $P < 0.05$.

RESULTS

One hundred and ten patients from ten rural sites participated, with each patient completing a single survey. Ten providers were recruited: nine were psychiatrists and one was a psychiatric consultant nurse. The providers completed 59 surveys in total, each one in reference to a specific telepsychiatric consultation appointment. Three providers completed surveys for 10 or more telepsychiatry consultations, 3 providers completed surveys for 2–8 consultations and 4 providers completed surveys for a single consultation. The provider survey included 25 items, whereas the patient survey included 15 items and a short demographic section.

Patient demographics

Most patients were female (64.5%) and were primarily Caucasian (91.8%). The majority had completed college or university (50.9%). Most patients had transportation to attend an in-person appointment for their mental healthcare

Table 1: Patient demographics (n=110)

Item	Percentage
Age (mean years) ^a	40.5
Gender (female)	64.5
Ethnicity	
Caucasian	91.8
First Nations/Metis	5.5
Other	2.7
Highest education ^b	
Grades 1-8	5.6
High school	41.7
College diploma	31.5
University degree	19.4
Other	1.9
Employment ^c	
Paid employment (full or part time)	34.9
Paid disability	18.4
Ontario Works	13.8
Student (full or part time)	8.3
Unemployed	10.1
Homemaker/parent	4.6
Retired	6.4
Other	3.7
Transportation to healthcare appointments ^b	
Personal vehicle	65.9
Ride from family member or friend	27.7
Outreach van	5.6
No transportation	5.6
Other	1.9

Missing data not counted in percent calculations. ^an=105, ^bn=108, ^cn=109.

if needed, with most having access to a personal vehicle (65.9%) [Table 1].

Provider experience

Two providers had more than 5 years of experience with telepsychiatry, 6 providers had 2–5 years of experience, one provider had 1 to 2 years of experience and one provider had <1 year of experience.

Patients' perceptions of access

Most patients reported that telepsychiatry increased their access to care. Compared to an in-person appointment, most patients agreed that the telepsychiatry session was easier to attend (76.2%), saved them time (89.1%), allowed them to get healthcare sooner (75.4%) and reduced their travel requirement (79.8%). Most patients also agreed that telepsychiatry made it easier to get healthcare (79.9%) and

Table 2: Patient perceptions of telepsychiatry (n=110)

Survey item	Disagree (%)	Neither agree nor disagree (%)	Agree (%)
Satisfaction			
1. I felt I could talk about anything with my healthcare team today	2.7	8.2	89.0
2. My healthcare team cared about me as a person	2.7	8.2	89.1
3. My healthcare team knew what they were doing	0.9	3.6	95.5
4. My healthcare team was able to address what was bothering me today	1.8	15.5	82.7
5. The care I received from my telepsychiatry session today was as good as a regular in-person visit ^a	7.4	11.0	81.6
6. I felt my privacy was respected today	0.9	3.6	95.4
7. In general, I was satisfied with the telepsychiatry system	0	5.5	94.5
8. Overall I was satisfied with my telepsychiatry session today	0	3.6	96.3
9. I would use telepsychiatry again	0	4.5	95.4
Access			
10. Telepsychiatry makes it easier to get my healthcare	5.5	14.7	79.9
11. It was easier for me to attend my session with my healthcare team using telepsychiatry rather than in person ^a	8.3	15.6	76.2
12. Telepsychiatry allowed me to see my healthcare team sooner than I could have in person	5.4	19.1	75.4
13. If telepsychiatry was not available, I would have travelled for my visit ^a	8.2	11.9	79.8
14. Today's telepsychiatry session saved me time	0	10.9	89.1
15. Telepsychiatry sessions are a convenient form of healthcare for me ^a	0	13.8	86.2

Missing data not counted in percent calculations. ^an=109.

that telepsychiatry is a convenient form of healthcare (86.2%) [Table 2].

Patient satisfaction

Patients also reported a high degree of satisfaction with their telepsychiatry consultations. For example, almost all patients were satisfied with the telepsychiatry session overall (96.3%) and agreed that they would use telepsychiatry again (95.4%). As well, most patients agreed that their telepsychiatry consultation was as good as an in-person visit (81.6%) [Table 2].

Providers' perceptions of access

Providers consistently reported that telepsychiatry increased patient access to care. Compared to an in-person visit, all providers agreed that the telepsychiatry session saved their patient time (100%), and almost all agreed that the telepsychiatry session provided the patients with earlier access to healthcare (94.9%) and reduced patients' travel requirements (94.9%). Moreover, all providers agreed that telepsychiatry made it easier for their patients to get healthcare overall (100%) [Table 3].

Provider satisfaction

Providers also reported a high degree of satisfaction with their telepsychiatry consultations. For example, all providers were satisfied overall with their telepsychiatry consultations, all agreed that they would use telepsychiatry again and all agreed that they would recommend telepsychiatry to their colleagues (100%). In addition, all providers agreed that their patients seemed satisfied with the telepsychiatry consultation (100%) and almost all believed that their patients would be willing to use telepsychiatry again (98.3%) [Table 3]. Despite high levels of provider satisfaction overall, some providers reported that they were unable to observe the details of their patients' facial expression and body movements (20.4%), had impaired provider–patient rapport (27.1%) and communication (25.4%) by using telepsychiatry and that they would have preferred to see their patients in person (17%).

Patient and provider concordance

Patients (*n* = 32) and providers (*n* = 10) completed the surveys in reference to the same telepsychiatry consultation appointment, resulting in 32 pairs of patient and provider surveys. Items 8, 9, 10, 12,

Table 3: Provider perceptions with telepsychiatry (n=59)

Survey item	Disagree	Neither agree nor disagree	Agree
Satisfaction			
1. I was satisfied with my orientation to using telepsychiatry ^a	0	0	100
2. I was satisfied with the quality of the picture	0	1.7	98.3
3. The quality of the audio was acceptable	0	0	100
4. The technology (the normal operation of the instrument rather than any problems encountered) distracted me from the session	93.2	5.1	0
5. The inability to touch my patient impaired the diagnosis	91.5	8.5	0
6. I could accurately assess audible symptoms	0	0	100
7. I was unable to observe details of my patient's facial expression and body movements that would have been important in connecting with him/her	76.3	3.4	20.4
8. The provider-patient rapport was unimpaired by the use of telepsychiatry	27.1	3.4	69.5
9. I would have preferred to see my patient in person	76.3	6.8	17.0
10. Technical difficulties made this process too time consuming	94.9	5.1	0
11. My communication with my patient and/or referring health provider was unimpaired by telepsychiatry	25.4	1.7	72.9
12. Overall, the system was accessible and easy to use	0	0	100
13. Using telepsychiatry takes longer than a face-to-face session	86.4	10.2	3.4
14. If I had any problems with the telepsychiatry equipment, someone was available to help me	0	0	100
15. Today's telepsychiatry session may have improved my patient's prognosis	3.4	5.1	91.5
16. My patient seemed satisfied with today's telepsychiatry session	0	0	100
17. My patient would be willing to use telepsychiatry again	0	1.7	98.3
18. Overall, I was satisfied with the telepsychiatry session	0	0	100
19. I would use telepsychiatry to see patients again	0	0	100
20. I would recommend telepsychiatry to my colleagues	0	0	100
Access			
21. Telepsychiatry improves clinical efficiency	1.7	1.7	96.6
22. Today's telepsychiatry session may have made it easier for my patient to get healthcare	0	0	100
23. Today's telepsychiatry session allowed my patient to access services earlier than they could have in person	0	5.1	94.9
24. If today's telepsychiatry session was not available, my patient would have had to travel	1.7	3.4	94.9
25. Today's telepsychiatry session saved my patient time	0	0	100

Missing data not counted in percent calculations. ^an=58.

13 and 14 on the patient survey [Table 2] measure equivalent content to items 16, 17, 22, 23, 24 and 25 on the provider survey [Table 3], respectively. Four of the paired items measured the perceptions of access with telepsychiatry (patient survey items 10, 12, 13, 14 and provider survey items 22, 23, 24 and 25) and two of the paired items measured satisfaction (patient survey items 8 and 9 and provider survey items 16 and 17). Responses to equivalent items by these patients and providers were assessed for their level of concordance [Table 4].

Concordance between the patients and providers was highly statistically significant ($P < 0.0001$) on all paired items, as both groups tended to report satisfaction and improved access with telepsychiatry. Concordance was highest on the

two paired items measuring satisfaction (i.e. items 8 and 9 on the patient survey and items 16 and 17 on the provider survey, respectively), on which absolute concordance was nearly observed. Absolute concordance was also nearly observed on two items measuring the perceptions of easier patient access to care with telepsychiatry and patient time savings (items 10 and 14 on the patient survey and items 22 and 25 on the provider survey, respectively). Concordance was comparatively weaker on the two remaining paired items, with fewer patients than providers agreeing that the telepsychiatry consultation resulted in faster access to healthcare and that the telepsychiatry consultation reduced patient travel (i.e. items 12 and 13 on the patient survey and items 23 and 24 on the provider survey, respectively).

Table 4: Patient and provider concordance on telepsychiatry satisfaction (n=32 paired surveys)

Made it easier to get to healthcare ^a			S=0.90*	Allowed access to services sooner			S=0.63*
Provider rating	Patient rating			Provider rating	Patient rating		
	Disagree	Neither	Agree		Disagree	Neither	Agree
Disagree	0	0	0	Disagree	0	0	0
Neither	0	0	0	Neither	0	0	0
Agree	0	2 (6.5%)	29 (93.5%)	Agree	3 (9.4%)	5 (15.6%)	24 (75.0%)
Without telepsychiatry, patient would have to travel for visit ^a				Saved patient time			
Provider rating	Patient rating			Provider rating	Patient rating		
	Disagree	Neither	Agree		Disagree	Neither	Agree
Disagree	0	0	0	Disagree	0	0	0
Neither	0	0	1 (3.2%)	Neither	0	0	0
Agree	4 (12.9%)	5 (16.1%)	21 (67.7%)	Agree	0	3 (9.4%)	29 (90.6%)
Patient satisfied with telepsychiatry session				Patient would be willing to use telepsychiatry again			
Provider rating	Patient rating			Provider rating	Patient rating		
	Disagree	Neither	Agree		Disagree	Neither	Agree
Disagree	0	0	0	Disagree	0	0	0
Neither	0	0	0	Neither	0	0	0
Agree	0	1 (3.1%)	31 (96.9%)	Agree	0	1 (3.1%)	31 (96.9%)

*P<0.0001. ^an=31.

DISCUSSION

This study measured satisfaction and perceptions of access to care with telepsychiatry among Canadian providers and rural patients and assessed the level of the concordance between the two groups. To the authors' knowledge, only one study has previously examined both patient and provider perceptions of telepsychiatry in the Canadian context, and no other study has examined patient and provider concordance in the context of telepsychiatry.

Patients largely agreed that their telepsychiatry sessions afforded them better access to care compared to in-person appointments. Patients also reported a high degree of satisfaction with their telepsychiatry sessions, which is consistent with previous studies.⁸⁻¹¹ Providers unanimously agreed that the telepsychiatry sessions improved their patients' access to care and also reported a very high degree of satisfaction overall with the sessions. However, approximately one-quarter of the providers reported concerns about provider–patient communication and rapport with telepsychiatry, and 17% indicated that they would have preferred to have seen their patients in person. Previous studies have cited

concerns among providers about compromised non-verbal communication with telemedicine, with audio and visual information potentially lacking in richness.²¹ Such concerns may present a barrier to the uptake of telepsychiatry among providers.

Patients who expressed positive perceptions of access and satisfaction with telepsychiatry demonstrate that the telepsychiatry consultation model is consistent with a patient-centred approach to care. Equally important is that both patients and providers expressed positive perceptions of telepsychiatry, as adequate buy-in from both groups is needed for a broader implementation of the telepsychiatry consultation model.

Given that both patients and providers had positive views of telepsychiatry, a high level of concordance was observed between the two groups. A large body of literature indicates that concordance across many aspects of the patient–provider relationship, including shared perceptions of patient satisfaction, is associated with better treatment adherence and positive health outcomes.¹⁶ The present findings indicate that this important aspect of patient–provider concordance can be established within a telepsychiatry consultation model. However, relative to providers, fewer patients agreed

that telepsychiatry reduced their travel and provided them with earlier access to healthcare, suggesting that some patients may not fully recognise the typical barriers to access speciality care under the traditional in-person model of service delivery.

Limitations

As this study was conducted at a single site and only a small sample of providers were surveyed, the generalizability of the results may be limited. Fewer provider surveys than patient surveys were completed, limiting the number of patient-provider pairs available to assess concordance. Additionally, the participant sample may not be representative of all rural populations in Canada, which tend to be older²², and often have higher proportions of indigenous peoples²³ and limited access to transportation.

CONCLUSIONS

This research demonstrates high levels of satisfaction and concordance between patients and providers concerning telepsychiatric consultations provided from an urban mental health centre to rural regional clinics. These high levels of satisfaction among both patients and providers indicate that our regional telepsychiatry consultation model is one which other urban mental health centres located within similar catchment areas could consider for potential application to their context. The high level of concordance also suggests that good adherence and patient outcomes may be achievable within the telepsychiatry consultation model. These results provide support for the use of telepsychiatry consultations to improve access to psychiatric care for rural populations.

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