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RESEARCH PAPER

Acceptability of telehealth CBT during the time of COVID-19: Evidence from patient treatment initiation and attendance records

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Abstract The COVID-19 pandemic provided unique conditions for examining outpatient psychotherapy clinics’ rapid transition to telehealth. The current study utilized data from a large, specialty CBT clinic to investigate attendance and treatment engagement changes when services were provided via telehealth versus in-person. Results indicate that, following a complete transition to telehealth services, clinic referrals were maintained. Further, telehealth treatment appeared to be entirely acceptable as assessed by a decreased missed visit rate of telehealth appointments compared to in-person appointments. Given the elimination of commuting times, telehealth has the potential to address disparities in care linked to physical distance from the clinic and/or differential ability to take time off work for appointments.

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The COVID-19 pandemic has resulted in an increased need for mental health services and the rapid evolution of care services to provide treatment remotely (Swendsen, 2020). For mental health providers, this has meant the rapid adoption and utilization of telehealth solutions (Moring et al., 2020; Sasangohar et al., 2020; Waller et al., 2020). Clinical trial data indicate that technology-based mental health care may be acceptable to patients and that it may improve engagement. For example, one study found that individuals with severe mental illness randomized to a mobile health intervention were engaged for more weeks of treatment compared to an in-person intervention that utilized the same mechanism of action (Buck et al., 2020). The same study also found that engagement did not differ significantly between in-person and mobile health interventions for participants with a diagnosis of major depressive dis-
order. Clinical trials also suggest that telehealth can offer treatment outcomes similar to in-person treatment (Fernandez et al., 2021; Luo et al., 2020). However, these controlled data do not provide a perspective on the widespread adoption of these treatment provision strategies. Thus, the pandemic affords a unique opportunity to examine the effects of remote psychotherapy on treatment engagement at a scale previously unavailable given past limitations, perceived or imposed, on this format (e.g., insurance reimbursement, state-bound licensure, risk management). Cognitive-behavioral therapists have rapidly adapted interventions to a telehealth format (e.g., Moring et al., 2020; Waller et al., 2020). Indeed, the COVID-19 pandemic may have spurred the adoption of telehealth by both clinicians and patients, and both providers and consumers have argued that some changes should remain even after the pandemic has resolved and traditional delivery systems are available again (e.g., Moreno et al., 2020). However, more investigation into the effects of remotely delivered treatments on treatment-seeking and therapeutic engagement is needed.

Initial survey evidence indicates that telehealth interventions are acceptable to patients. For example, based on anonymous survey results of 3070 behavioral health patients in a large medical system, the vast majority of patients (82%) rated their psychiatric care as excellent or good using a video interface (Guinart et al., 2020). Further, the majority (64%) of the sample reported that telehealth sessions were just as helpful as in-person treatment. The Health Information National Trends Survey (HINTS) found that 1,538 individuals with diagnoses of anxiety and/or depression had a significantly higher likelihood of using technology to communicate with physicians and to share health information (Onyeaka et al., 2020). Also, patients are well aware of some of the trade-offs between telehealth and in-person care. For example, the lack of a commute and more flexible scheduling are noted as benefits of telehealth, but some report feeling less connected to their provider or being more likely to withhold information out of concern for data privacy when using this format (Guinart et al., 2020; Onyeaka et al., 2020). Yet, confidence in these generally positive perspectives on telehealth is limited by the small proportion of patients (22%) who completed the survey. Additional perspectives on patient engagement are needed to complement survey data.

The current study utilized data from a large, specialty CBT clinic to examine attendance and treatment engagement changes when services were provided via telehealth versus in-person. The Center for Anxiety and Related Disorders (CARD) at Boston University is an outpatient mental health clinic specializing in state-of-the-art cognitive-behavioral interventions, with a primary focus on the treatment of anxiety and related disorders. CARD utilizes a central health record for all patients, enabling the examination of treatment-seeking and engagement over time. Specifically, the current study will examine (1) rates of treatment-seeking when services are provided via telehealth versus in-person, (2) general attendance rates when services were provided via telehealth versus in-person, and (3) odds of attending telehealth versus in-person sessions. For all comparisons, data from an average 5-year period (2015–2019) was used as the comparison period to the COVID-19 period when the clinic transitioned to full telehealth services (April 2020–March 2021).

Methods

Participants

Participants included individuals who had contacted the clinic about services from January 2015 to March 2021 and individual therapy patients who had scheduled at least one appointment at the clinic during this period. There were 8,089 unique contacts made about clinic services and 3,009 individual therapy patients who scheduled at least one appointment of any type at the clinic from January 2015 to March 2021. Although we did collect data on group appointment attendance from 2015-2021, only 3 groups have been operational during this time (1 long-term dialectical behavior therapy group with rolling admissions, 1 periodic social anxiety group, which shifted from a 12- to an 8-session protocol upon transition to telehealth, and one drop-in dialectical behavior therapy graduate group, which was discontinued). Because the structure of these groups changed substantially during the pandemic and the number of individuals involved in group treatment was minimal, we did not examine group engagement changes due to potential confounds.

Phone screen procedures determined exclusionary criteria for receiving services at CARD. Individuals were referred to other clinics if they had a history of hospitalization in the past two years, had symptoms of psychosis, or endorsed high-risk behaviors to include active suicidal ideation with plan/intent and low BMI due to eating disorder. Demographic data were available for 2526 of the patients who had scheduled appointments in the clinic. Overall, patients were 78% white, 5% Black/African-American, 8% East or South Asian, 7% Hispanic/Latinx, and 2% endorsed multiple ethnicities and/or other ethnicities. Patients were majority female (60%), and 1% of patients endorsed a transgender or other gender identity. Patient ages ranged from 16-83 (M=31.5, SD=12.94). 62% of patients were single and 24% married. Children, adolescents, and young adults seen through the children’s mental health arm of the clinic were excluded from the current study. See Table 1 for a breakdown of the primary diagnoses and prevalence of comorbidities treated at CARD from 2015–2021. Note, there was not a significant difference in severity levels of primary diagnosis assessed at intake from 2015-2019 compared to 2020–2021 (t=0.91, p=0.36).

Measures

Demographic characteristics

Demographic characteristics were derived from clinician responses provided on the consensus diagnostic forms when assigning patient diagnoses.

Attendance

Clinicians record attendance status for each patient immediately after sessions. The scheduling system allows clinicians to mark attendance status as attended, patient canceled, patient canceled late (less than 24 hours’ notice), patient
no-showed, patient rescheduled, clinician canceled, clinician rescheduled, or center closed.

Treatment delivery modality
Clinicians also record whether services were delivered in-person or via audio or video. All telehealth visits were scheduled to be audiovisual in nature; telephone-only sessions were held only if technological issues prevented visual connectivity. Thus, audio and video visits were collapsed into one category to create a two-level variable for in-person and telehealth modalities.

Clinic procedures
As part of routine clinical procedures at CARD, individuals interested in clinical care complete a telephone screen with a trained staff member to determine eligibility for services. Eligible individuals are placed on the waitlist, and when a clinician is available, they contact patients on the waitlist to schedule an intake. All patients sign a consent for services that includes information about how de-identified information about their clinical care will be entered into a data repository for future research. Clinicians administer a comprehensive, structured clinical interview at pre-treatment to assign clinical diagnoses. Clinicians are graduate students, postdoctoral fellows, and faculty members who are staff at CARD. Clinical documentation of treatment progress, including telephone screens, attendance, and diagnostic consensus forms are completed by clinicians.

Beginning on March 16, 2020 the clinic transitioned all care to telehealth format. Clinicians reached out to patients to notify them of the change, and those individuals who had just completed an intake or were on the waitlist were notified of the change in treatment modality. New patients calling into the clinic were informed that all services, including intakes and individual psychotherapy, were being delivered via telehealth. Additionally, on March 16, 2020 a banner was placed on the clinic website informing potential patients that care was being delivered via telehealth. Note, prior to the onset of the pandemic, telehealth visits represented approximately 0.1% of visits conducted at CARD and represented greater than 99.1% thereafter.

Study procedures
For the current study, clinic contacts and individual appointments from January 2015—March 2021 were used to examine trends in clinical care. To reduce unique-year variability, data from an averaged 5-year period (2015–2019) was used as the comparison period to the COVID-19 period when the clinic transitioned to full telehealth services (April 2020–March 2021). The pandemic year was set to begin in April 2020 because the transition to telehealth occurred mid-month in March when the pandemic first began. January through March 2020 were excluded from the analyses for clarity.

The initial dataset of 92,321 appointments included child clinic appointments, duplicates, IDs used to train clinicians on documentation, and billing documentation that did not represent the provision of care. After extensive cleaning, the dataset included 42,505 individual and group appointments. Data cleaning procedures were documented in detail and are available upon request.

Statistical analysis
All statistical analyses were conducted using SPSS version 27.0.1.0. We used logistic generalized estimating equations (GEE) to examine changes in attendance patterns based only on treatment delivery modality. The goal of GEE is to make inferences about the population level while accounting for the within-subject correlations that occur when a dataset has multiple measurements for each individual. A chi-squared test examined differences in intakes by race/ethnicity before and during the pandemic.

Results
Contact trends
The number of individuals contacting the clinic for services was substantially lower than average during the first two months of telehealth provision than average (Fig. 1). However, in subsequent months contacts matched or exceeded average rates.

Attendance trends
Because the clinic serves a high percentage of students, scheduled appointments typically peak in the fall and drop significantly over the summer when many students travel home for the summer. However, in the pandemic year during July through September the number of sessions attended increased substantially (Fig. 2).
In-person versus telehealth attendance patterns

Patients attended a mean of 16.40 sessions overall, reflecting a range from 1 to 269 sessions attended. On average, individual patients missed/rescheduled 3.22 sessions (SD = 3.2), including cancellations, no shows, and reschedules during their care; the range of missed visits was from 1 to 38.

A total of 1,860 patients attended individual therapy from 2015-2021. A total of 33,685 individual therapy appointments were examined to determine whether attendance patterns differed between in-person and telehealth delivery modalities. A total of 565 appointments were excluded from this analysis because clinicians canceled the appointment. Overall, patients missed 13% of all in-person visits compared to 10% of all telehealth visits (see Table 2).

After accounting for within-subject correlations using GEE, the odds of missing (i.e., cancellation, reschedule, or no-show) an individual therapy appointment was 33% higher for in-person appointments compared to telehealth (audio or video) appointments ($p < .001$, 95% CI [1.16, 1.54]). These results include any audio or video visit that occurred prior to and during the pandemic, thus controlling for the impact of COVID on in-person attendance.

We also evaluated whether the use of telehealth increased the racial diversity of individuals who completed intakes at the clinic. From 2015-2019, 21.96% ($n = 2067$) of individuals who completed an intake at CARD identified as

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**Table 2** Attendance patterns by modality.

|                | Total appointments | % missed |
|----------------|--------------------|----------|
| In-person      | 27,249             | 12.84    |
| Telehealth     | 6,436              | 9.94     |

The difference between in-person and telehealth missed visits is significant according to logistic generalized estimating equation (GEE) analysis.
non-White. From 2020–2021, 22.51% (n = 342) of individuals who completed an intake at CARD identified as non-White. Results indicate that there was no significant increase in patient racial diversity as a result of telehealth provision (χ² = .05, df = 1, p = .82).

Discussion

The COVID-19 pandemic provided the conditions for the examination of a rapid transition to telehealth for outpatient psychotherapy clinics. Analysis of treatment initiation and session attendance data during telehealth provision suggests that the acute response to the pandemic lockdown was a decrease in treatment requests and attendance. This brief decrease was followed by a rapid return to levels that matched or exceeded those when in-person care was provided. Thus, there was an overall successful transition to telehealth without loss of outpatient census. One relative limitation for the interpretation of our data is that the transition to telehealth occurred during increasing mental health needs during the pandemic (Santomauro et al., 2021). As such, we cannot judge treatment-seeking and attendance level relative to the changing population need, only in relation to prior-year levels.

We also found that once individuals presented for treatment, treatment appeared to be fully acceptable, as evidenced by a decreased missed visit rate. These findings are consistent with survey data indicating that behavioral health patients appreciate the lack of commute and flexible scheduling offered by telehealth services (Guinart et al., 2020). Also, the current data from a community clinic that treats a large percentage of anxiety disorders extends the evidence suggesting that technology-based interventions are acceptable to individuals seeking treatment for a variety of mental health concerns, including severe mental illness (Buck et al., 2020) and social anxiety disorder (Yoshinaga et al., 2021). However, our data do not include the time frame when many remote workers had to return to places of employment after vaccinations were available. This change may increase or decrease the perceived benefits of telehealth, depending on such factors as the availability of confidential digital connections or the perceived work impact of commuting time. Given that the current manuscript focused on telehealth utilization and adherence rather than clinical outcomes, a limitation of the current study is that we did not assess how telehealth impacted treatment outcomes. The impact of telehealth on treatment outcomes is a question that necessitates further research. Additionally, this study was unable to examine the effectiveness of specific interventions, which represents an area for future research.

We did not find any changes in the racial/ethnic composition of patients completing evaluations at our clinic, comparing in-person care to telehealth. One limitation of our data is that we could not readily discern whether telehealth led to a change in the patient population attending treatment (i.e., a change in the functional catchment area for the clinic). Such changes in the catchment area may require specialty advertising to notify potential new patients of out-of-region services. Given the elimination of commuting times, telehealth has the potential to address disparities in care linked to physical distance from the clinic and/or differential ability to take time off work for appointments; however, disparities in access to the internet may attenuate these advantages (Jain et al., 2021; Pierce & Stevermer, 2020; Wegermann et al., 2022). A task for the evolution of telehealth is to consider the implications of a broader catchment area for services; unique solutions are needed to forestall the propagation of current health disparities in the context of service expansion.

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Disclosure of interest

The authors declare that they have no competing interest.

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