

Provision of Telemental Health Before and After COVID-19 Onset

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Telemedicine is an essential tool for expanding access to mental health care to a broader range of patients, especially in rural settings, in settings with limited public transportation, and among low-income patients.¹⁻⁴ Mental health care has proved an ideal case for telemedicine, given the variation in mental health provider availability and suitability of therapy to video and audio communication technologies.² Telemedicine for mental health has been critically important since the onset of the COVID-19 pandemic, which has decreased the safety of in-person health services. Congress passed the Coronavirus Aid, Relief, and Economic Security (CARES) Act on March 25, 2020, which created new funding opportunities for organizations to offer telemedicine following the initial period of COVID-19 lockdowns in the United States.⁵ Specifically, the CARES Act allows for Medicare payment parity for telemedicine services (ie, reimbursement at the same rate as in-office visits for all diagnoses) and it waives cost sharing for Medicare patients when using telemedicine.⁵

Although much recent research has explored trends in the provision of telemedicine for mental health care services,⁶ including across urban and rural settings⁷⁻⁹ and during the COVID-19 pandemic,¹⁰⁻¹² there has been little research focused on understanding organizational characteristics associated with providing telemedicine for mental health. Finally, there is limited understanding of the availability of mental health telemedicine services in non-English languages; such understanding is critically important to ensure equitable provision of services for minority populations with limited English fluency, especially Spanish-speaking and Native American patient populations, who are vulnerable to mental health conditions such as major depression.¹³⁻²⁰

In this study, we used national survey data of mental health provider organizations to identify the organizational characteristics associated with providing telemedicine therapy services offered by facilities before and after the onset of the COVID-19 pandemic. We identified states' telemedicine policies associated with the provision of telemedicine services at the facility level. Finally, we explored the impact of state-level COVID-19 case volume and shelter-in-place laws on the availability of telemedicine services.

ABSTRACT

OBJECTIVES: To examine the organizational characteristics associated with telemedicine services provided by mental health care organizations before and after onset of the COVID-19 pandemic in the United States.

STUDY DESIGN: Using 2019-2020 National Mental Health Services Survey data, we assessed changes in provisions of telemedicine services by mental health care facilities before and after onset of the COVID-19 pandemic.

METHODS: We estimated multivariable logistic regression models comparing pre- vs postpandemic changes in prevalence of telemedicine offered by mental health care facilities. We incorporated mental health care organizations' characteristics, including facility type, accepted payment, geography, and language service provisions, as well as state-level policies, such as payment parity laws, shelter-in-place laws, and number of COVID-19 cases.

RESULTS: Mental health care facilities had 4 times the odds (odds ratio [OR], 4.3; 95% CI, 4.09-4.61) of telemedicine provision post pandemic in 2020 compared with prepandemic in 2019. In 2020, facilities that accepted Medicaid (OR, 1.3; 95% CI, 1.11-1.49) and Medicare (OR, 1.3; 95% CI, 1.14-1.39) were more likely to provide telemedicine than those that did not. Facilities that offered American Sign Language (OR, 1.3; 95% CI, 1.16-1.43) and non-English language services (OR, 1.3; 95% CI, 1.15-1.44) were more likely to provide telemedicine than facilities that did not. Facilities located in states with payment parity laws (OR, 1.2; 95% CI, 1.11-1.36) were more likely to offer telemedicine than states without.

CONCLUSIONS: Telemedicine availability in mental health facilities has expanded post COVID-19 pandemic, but telemedicine provision has been uneven across organizational and state-level factors. Expansion of regional investments and payment parity might be necessary to ensure equitable provision of telemedicine.

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Taken together, our results offer new insights regarding trends in telemedicine provision among US mental health provider organizations, as well as potential policy considerations to increase the provision of telemedicine for mental health.

METHODS

Data

We used 2 years of data from the Substance Abuse and Mental Health Services Administration's National Mental Health Services Survey (N-MHSS) (2019-2020), which is an annual cross-sectional survey that characterizes the provision of mental and behavioral health services by specialty mental health treatment facilities on the national and state levels.¹⁸ The response rate was 91% in 2019 and 89% in 2020 among eligible facilities. The year 2019 was considered to be before the onset of the COVID-19 pandemic and 2020 after the onset of the COVID-19 pandemic.

We included facilities in the 50 states and the District of Columbia. The primary outcome measure was facilities' availability of telemedicine/telehealth therapy, as measured in a multiple-choice survey question asking, "Which of these mental health treatment approaches are offered at this facility, at this location?" with the response of "telemedicine/telehealth therapy." Covariates included facility type, facility ownership, accepted insurance types, geographic region, and state-level policies.

We included the following standard health care organizational characteristics available in N-MHSS: type of mental health facility, ownership of the facility, whether Medicare and/or Medicaid were accepted, geographic region in the United States, and in which languages mental health services were provided. We included the following facility types: outpatient setting (outpatient mental health facilities, community mental health centers [CMHCs], and certified community behavioral health clinics), inpatient setting (psychiatric hospitals and inpatient psychiatric units of a general hospital), residential treatment facilities, partial hospitalization/day treatment facilities, Veterans Affairs (VA) medical centers, and other settings/multisetting mental health facilities. We also included facility ownership (private for-profit organization, private nonprofit organization, and public agency or department), types of government insurance accepted (Medicaid, Medicare), geographic region in the United States (West, Northeast, Midwest, and South), and language services provisions (services for individuals who are deaf/hard of hearing and services offered in languages other than English).

To understand if state-level policies were associated with the use of telemedicine, we included the following characteristics, consistent with prior work¹⁹: telemedicine payment parity laws, American Telemedicine Association (ATA) performance grade, passage of COVID-19 shelter-in-place ordinances, and number of COVID-19 cases per 100,000 population. We indicated whether states had payment parity laws for telehealth services by 2019.²⁰

TAKEAWAY POINTS

We examine the prevalence of telemedicine services provided by mental health care organizations before and after onset of the COVID-19 pandemic in the United States.

- ▶ Telemedicine availability among mental health care facilities increased between 2019 and 2020, although there is variation across organizational and state characteristics.
- ▶ Our study demonstrates opportunities for policy changes, including payment parity and new incentives, that may encourage equitable distribution of telehealth services to reduce current gaps in the provision of care, especially in the context of the COVID-19 pandemic.

We did not indicate states that introduced payment parity after the onset of the pandemic because of the variability of when it was introduced and the temporary nature of some of these policies. We used grades assigned by the ATA to states based on the quality of the adoption of telemedicine services, which based their grades on 13 indicators related to coverage and reimbursement.²¹ We indicated whether states had shelter-in-place policies updated on April 20, 2020.²² We used historical COVID-19 case volume data on July 30, 2020, which represented the midway point of the 2020 N-MHSS fielding period (March 26 to November 30, 2020).²³ We obtained 2020 state population data from the US Census Bureau.²⁴

Analysis

We used descriptive statistics, χ^2 tests, and multivariable logistic regression analyses to assess telemedicine provision and characteristics of mental health care facilities. We conducted χ^2 tests to characterize differences in the provision of telemedicine between 2019 and 2020 for each category of each organizational characteristic variable. Two multivariable logistic regression models were created. The first model included data from 2019 and 2020 to characterize telemedicine provision across the study period. The second model used only those observations occurring in 2020 to explore associations among our COVID-19 measures—namely, the presence of state shelter-in-place laws and quartiles of state case counts per 100,000 population, and telemedicine provision. All analyses were performed using Stata version 17 (StataCorp LLC).

RESULTS

Table 1 describes characteristics of the facilities in our sample (N = 24,581). Outpatient facilities were the most frequent facility type (63%), followed by inpatient facilities (13%-14%) and residential treatment centers (12%). Most mental health facilities were private nonprofit organizations (61%). About 24% of facilities were in the West, 22% in the Northeast, 25% in the Midwest, and 29% to 30% in the South. Most facilities accepted Medicaid (88%) and Medicare (68%). A majority of facilities offered services in American Sign Language (ASL; 57%-58%) and at least 1 non-English language (73%-75%). Most states scored an ATA grade of B (65%) and did not have payment parity laws in place by 2019 (71%). In 2020, the majority of states had a shelter-in-place law (91%).

TABLE 1. Descriptive Statistics of 2019-2020 Mental Health Care Services Facilities (N = 24,581)

Characteristic	2019		2020	
	n	%	n	%
Facility type				
Outpatient	7867	63.5	7795	63.9
Inpatient	1727	14.0	1621	13.3
Residential treatment	1513	12.2	1447	11.9
Partial hospitalization/day treatment	417	3.4	415	3.4
Veterans Affairs medical center	481	3.9	550	4.5
Multisetting and other	379	3.1	369	3.0
Organization type				
Private for-profit organization	2472	20.0	2555	20.9
Private nonprofit organization	7594	61.3	7377	60.5
Public agency or department	2318	18.7	2265	18.6
Medicaid accepted				
Yes	10,876	87.8	10,671	87.5
No	1508	12.2	1526	12.5
Medicare accepted				
Yes	8371	67.6	8260	67.7
No	4013	32.4	3937	32.3
Region				
West	2921	23.6	2927	24.0
Northeast	2739	22.1	2619	21.5
Midwest	3054	24.7	3063	25.1
South	3670	29.6	3588	29.4
Provides mental health treatment services in American Sign Language for the deaf and hard of hearing				
Yes	7069	57.1	7106	58.3
No	5315	42.9	5091	41.7
Provides mental health treatment services in a language other than English				
Yes	9022	72.9	9181	75.3
No	3362	27.1	3016	24.7
American Telemedicine Association grade				
Grade A	1294	10.4	1303	10.7
Grade B	8058	65.1	7903	64.8
Grade C or below/not applicable	3032	24.5	2991	24.5
Payment parity law				
Yes	3616	29.2	3578	29.3
No	8768	70.8	8619	70.7
Shelter-in-place law				
Full state law	—	—	11,134	91.3
Local but not state law	—	—	475	3.9
No state or local law	—	—	588	4.8

The overall prevalence of telemedicine availability had significantly increased from 2019 (38.2% of facilities) to 2020 (69.0%) (Table 2). For each organizational characteristic variable, there were significantly higher proportions of facilities offering telemedicine in 2020 than in 2019 based on χ^2 tests. There were variations observed in the associations between different non-English languages and telemedicine provided by mental health care facilities (eAppendix [available at ajmc.com]).

Characteristics Associated With Offering Telemedicine Between 2019 and 2020

Table 3 describes results from logistic regression models predicting the odds of telemedicine provision associated with organizational characteristics. Odds of facilities offering telemedicine had increased from 2019 to 2020 by at least 4 times (Table 3). VA and CMHC settings had higher odds of offering telemedicine, whereas inpatient settings had lower odds of offering telemedicine than outpatient settings. Private nonprofit organizations and public agencies/departments had lower odds of offering telemedicine than private for-profit organizations. Facilities accepting Medicaid and/or Medicare had higher odds of offering telemedicine than those that did not. Compared with Western states, Northeastern and Midwestern states had lower odds and Southern states had higher odds of offering telemedicine. Facilities in states with an ATA grade of A or B had higher odds of offering telemedicine than those in states with a lower ranking. Facilities that offered mental health treatment services in ASL or a language other than English had higher odds of offering telemedicine than those that did not. Similarly, those in states with a telemedicine parity law by 2019 had higher odds of offering telemedicine than those without.

Characteristics Associated With Offering Telemedicine After the Onset of the COVID-19 Pandemic

Compared with the multiyear (2019-2020) model, results from the 2020 model were similar with a few differences (Table 3). In 2020, the lower odds of the Midwest and higher odds of the South providing telemedicine, compared with the West, were no longer significant. In 2020, the higher odds of ATA grade A states offering telemedicine, compared with states with a grade C or lower ranking, were no longer significant. In 2020, the higher odds of states with payment parity laws offering telemedicine, compared with states without, became significant. In 2020, facilities in states with a full state shelter-in-place law had significantly lower odds of offering telemedicine than those in states with no state or local shelter-in-place laws.

DISCUSSION

Using data from a national survey of mental health care organizations, we demonstrated that the prevalence of telemedicine therapy services offered by mental health facilities had increased between 2019—before the COVID-19 pandemic—and 2020—after

its onset. We observed significant variations in telemedicine availability across several state and organizational characteristics, suggesting that there are best practices and lessons learned that should be further clarified to strengthen the equitable delivery of telemedicine and managed care.

Telemedicine availability expanded from 2019 to 2020, coinciding with the onset of the COVID-19 pandemic and the shift away from collocated activities, to avoid viral transmission. CMHC and VA facilities were more likely to offer telemedicine than were outpatient settings, and the observed higher odds of telemedicine provision among VA medical centers and CMHCs relative to outpatient settings may reflect the particular emphasis placed on providing telemedicine to increase access to mental health care by these types of facilities.²⁴⁻²⁶ Nonprofit organizations and public agencies/ departments had lower odds of providing telemedicine than for-profit organizations, which may reflect the limited information technology resources and staffing available of these nonprofit/public organizations to make the transition to virtual care.

Regarding spoken language services, we observed variations among the separate non-English languages offered by facilities and the provision of telemedicine for mental health, but our results for these languages may be underpowered. In the study sample, the sample sizes for many languages spoken by minority groups were small. Considering the inherent challenge of minority groups being small, statistically significant results may be difficult to achieve in national data without concerted efforts, for example, to oversample underserved populations, increase the number of languages administered in surveys, and resource outreach among community organizations to recruit sample participants.²⁷ To improve mental health care access for populations facing language barriers, such as immigrant communities, it is critically important to build the infrastructure that can provide telemedicine services in non-English languages.²⁸

In 2019, facilities in states with ATA grades of A and B had a higher likelihood of offering telemedicine than those with lower grades; however, in 2020, only states with a grade of B, which represented the majority (~65%) of our

TABLE 2. Prevalence of Telemedicine Availability Among Mental Health Care Facilities

Characteristic	2019		2020		χ ² P
	Total (n)	Offers telemedicine (%)	Total (n)	Offers telemedicine (%)	
Sample size	12,384	38.2	12,197	69.0	<.001
Facility type					
Outpatient	3284	41.7	6050	77.6	<.001
Inpatient	519	30.1	782	48.2	<.001
Residential treatment	267	17.7	553	38.2	<.001
Partial hospitalization/day treatment	67	16.1	223	53.7	<.001
Veterans Affairs medical center	446	92.7	540	98.2	<.001
Multisetting and other	148	39.1	265	71.8	<.001
Facility ownership					
Private for-profit organization	2472	33.5	2555	66.7	<.001
Private nonprofit organization	7594	34.4	7377	67.5	<.001
Public agency or department	2318	55.6	2265	76.5	<.001
Medicaid accepted					
Yes	10,876	37.5	10,671	69.3	<.001
No	1508	43.4	1526	66.9	<.001
Medicare accepted					
Yes	8371	41.3	8260	71.2	<.001
No	4013	31.7	3937	64.2	<.001
Region					
West	2921	42.1	2927	72.2	<.001
Northeast	2739	18.3	2619	58.3	<.001
Midwest	3054	39.3	3063	71.2	<.001
South	3670	49.1	3588	72.3	<.001
Provides mental health treatment services in American Sign Language for the deaf and hard of hearing					
Yes	7069	44.1	7106	72.5	<.001
No	5315	30.3	5091	64.1	<.001
Provides mental health treatment services in a language other than English					
Yes	9022	41.0	9181	71.5	<.001
No	3362	30.7	3016	61.2	<.001
American Telemedicine Association grade					
Grade A	1294	44.9	1303	69.8	<.001
Grade B	8058	38.9	7903	69.6	<.001
Grade C or below/not applicable	1294	33.4	2991	67.1	<.001
Payment parity law					
Yes	3616	40.3	3578	71.4	<.001
No	8768	37.3	8619	68.0	<.001
Shelter-in-place law ^a					
Full state law	—	—	11,134	68.3	—
Local but not state law	—	—	475	74.7	—
No state or local law	—	—	588	77.6	—

^aShelter-in-place laws were applicable to 2020 only and not 2019.

TABLE 3. Logistic Regression Models Predicting Telemedicine Among Mental Health Care Services Facilities^a

Characteristic	Facility offers telemedicine/ telehealth therapy, odds ratio (95% CI)	
	2019-2020 model	2020 model
Sample size	24,581	12,197
Year		
2019	Reference	—
2020	4.34* (4.09-4.61)	—
Facility type		
Outpatient	Reference	Reference
Inpatient	0.31* (0.28-0.33)	0.22* (0.20-0.25)
Residential treatment	0.29* (0.26-0.32)	0.21* (0.19-0.24)
Partial hospitalization/day treatment	0.45* (0.39-0.53)	0.44* (0.35-0.54)
Veterans Affairs medical center	27.2* (19.6-37.6)	25.2* (13.2-48.1)
Multisetting and other	0.96 (0.82-1.13)	0.79 (0.6-1.0)
Facility ownership		
Private for-profit organization	Reference	Reference
Private nonprofit organization	0.83* (0.77-0.90)	0.80* (0.72-0.90)
Public agency or department	0.84* (0.76-0.93)	0.69* (0.59-0.80)
Medicaid accepted	1.17* (1.06-1.30)	1.29* (1.11-1.49)
Medicare accepted	1.46* (1.37-1.57)	1.26* (1.14-1.39)
Region		
West	Reference	Reference
Northeast	0.41* (0.38-0.45)	0.55* (0.48-0.62)
Midwest	0.83* (0.76-0.90)	0.87 (0.76-1.00)
South	1.18* (1.08-1.28)	1.06 (0.93-1.22)
Provides mental health treatment services in American Sign Language for the deaf and hard of hearing	1.34* (1.25-1.43)	1.29* (1.16-1.43)
Provides mental health treatment services in a language other than English	1.22* (1.13-1.32)	1.29* (1.15-1.44)
American Telemedicine Association grade		
Grade A	1.21* (1.08-1.35)	1.01 (0.86-1.20)
Grade B	1.30* (1.21-1.39)	1.16* (1.04-1.29)
Grade C or below/not applicable	Reference	Reference
Payment parity law		
Yes	1.06 (0.99-1.13)	1.23* (1.11-1.36)
No	Reference	Reference
Shelter-in-place law		
Full state law	—	0.70* (0.55-0.88)
Local but not state law	—	0.92 (0.67-1.28)
No state or local law	—	Reference

*P < .05.

^aControlling for COVID-19 case count quartiles.

sample, had a higher likelihood of offering telemedicine. There may be 2 reasons for this. First, across all ATA grade levels, there was a similar increase in the facilities offering telemedicine in 2020 (67%-70% in 2020 vs 33%-45% in 2019). Therefore, this may suggest that ATA grading may be less relevant in the context of the COVID-19 pandemic, which may have played a large role in shifting facilities' decisions and capabilities to offer telemedicine services. Second, updates to the 2016 ATA grade criteria may be necessary to cover a more recent measurement of states' performance and to encourage equitable delivery of telemedicine. Additionally, similar to a prior study,¹⁹ we observed that facilities in states with shelter-in-place policies and higher COVID-19 case counts were less likely to offer telemedicine than those without shelter-in-place policies and with lower COVID-19 case counts. This raises concerns about the ability of facilities in these states to meet their patients' mental health needs given that telemedicine was less available and in-person care less likely to be an option due to the COVID-19 pandemic.

Identifying the current extent of telehealth provision across mental health care organizations, and those organizational characteristics associated with offering telemedicine for therapy, is necessary to contribute to the future of telemental health policy and managed care. First, we showed that state telemedicine payment parity laws are significantly associated with increased odds of providing telemedicine, suggesting that payment parity may continue to be an important determinant of an organization's ability to offer telemedicine services. Additionally, observed geographic variation in telemedicine provision suggests that significant disparities in access to telemedicine exist across the United States, indicating the potential need for regional investments and exploring opportunities to remove barriers for the provision of telemedicine. States and local municipalities may consider investments to expand access to broadband internet service and associated technologies (eg, computers, tablets, smartphones) in order to increase access to telemedicine for residents.²⁹ Several potential policy levers may decrease barriers to financial reimbursement for facilities offering telemedicine, including expanding insurance coverage of telemedicine, covering more types of telemedicine technologies, and improving infrastructure for equitable health care delivery (eg, expanding language services and digital literacy) to ensure that the distribution of telemedicine access is equitable.²⁹

Limitations

Several limitations of this study must be considered. First, we were unable to characterize how telemedicine is specifically used in each facility beyond its use as a treatment approach for mental health, such as what modalities of telemedicine services are offered, to which patients, and when. Similarly, we were unable to measure the volume of clinical care conducted via telemedicine within each facility. Additionally, having more data post 2020 would provide more context about how telemedicine was provided throughout the pandemic, but these data are not yet available. Finally, we were limited in the organizational characteristics that we could

measure, and measures of size, patient population, financial resources, staffing, information technology capabilities, and rurality may be useful in identifying organizational facilitators of offering telemedicine.

CONCLUSIONS

Telemedicine provision expanded in mental health care provider organizations from 2019 to 2020, before and after the onset of the COVID-19 pandemic. However, telemedicine has been delivered unevenly across the United States, depending on such organizational characteristics as where facilities are located or what payments they accept. Inequitable distribution of telemedicine is also associated with state-level policies, particularly whether states have payment parity laws in place, suggesting that reimbursement for virtual visits at the same rate as in-person visits is an effective strategy for expanding telemedicine provision. Opportunities exist to successfully expand telemedicine, such as establishing new minimum standards, incentivizing delivery through payment parity, and promoting language-based services, to overcome historical barriers associated with the inequitable distribution of telemedicine across the United States. ■

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eAppendix. Telemedicine Availability by Languages Offered Amongst 2019-2020 Mental Health Care Services Facilities (n=24,581)

	Facility offers telemedicine/telehealth therapy				p-value
	Yes		No		
Language	n	%	n	%	
Spanish	4,431	18.026	3,735	15.195	0.080
Other American Indian or Alaskan Native Language	17	0.069	9	0.037	0.223
Hopi	20	0.081	1	0.004	<0.001
Lakota	10	0.041	0	0.000	0.003
Navajo	44	0.179	13	0.053	<0.001
Ojibwa	8	0.033	3	0.012	0.200
Yupik	13	0.053	1	0.004	0.003
Chinese	339	1.379	295	1.200	0.999
Japanese	116	0.472	109	0.443	0.563
Korean	145	0.590	138	0.561	0.448
Tagalog	235	0.956	232	0.944	0.168
Vietnamese	167	0.679	182	0.740	0.034
Hmong	122	0.496	60	0.244	<0.001
Hindi	244	0.993	248	1.009	0.081
Arabic	275	1.119	206	0.838	0.100
Farsi	230	0.936	180	0.732	0.282
Hebrew	151	0.614	110	0.448	0.154
Creole	224	0.911	305	1.241	<0.001
French	299	1.216	304	1.237	0.053
German	131	0.533	115	0.468	0.945
Italian	108	0.439	78	0.317	0.208
Polish	95	0.387	111	0.452	0.034
Portuguese	188	0.765	179	0.728	0.385
Russian	274	1.115	263	1.070	0.250
Other languages not listed	326	1.326	300	1.221	0.478