



The Impact of COVID-19 on Provider Perceptions of Telemental Health

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Abstract

The present study was designed to assess mental health provider attitudes and perceptions of telemental health (TMH) prior to and during the COVID-19 Pandemic, as well as the nature of their TMH utilization. The study aimed to gather information about positive and negative attitudes towards TMH, perceptions and correlates based on the modality of care, and beliefs about the overall effectiveness of TMH as compared to face-to-face care. The current study is part of a larger mixed methods project utilizing a repeated cross-sectional design. An online survey was administered to a sample of 1448 mental health providers and included demographic and professional information, experiences with and perceptions of TMH prior to and during the COVID-19 Pandemic, as well as a brief measure of pandemic-related stress. The COVID-19 Pandemic resulted in an increased use of TMH in the study sample. During COVID-19, providers reported increased agreement with TMH being necessary, important, and effective for care delivery. Providers who primarily used video, compared with telephone, reported that TMH was more useful, satisfying, and effective. While negative attitude towards TMH was predicted only by prior attitudes and belief in TMH effectiveness, positive attitude towards TMH was also predicted by female sex and current level of pandemic related stress. TMH use during the pandemic was predicted by primary use of video platform and previous TMH use. The 2020 COVID-19 Pandemic resulted in increased use of TMH and significantly increased positive perceptions about TMH among mental health providers.

Keywords Telemental health · COVID-19 pandemic · Provider perceptions · Attitudes · Effectiveness

Public Health Significance Statement This study provides important data about the current state of mental health provider perceptions and attitudes about telehealth as a viable method of clinical service delivery. Results indicate that providers have both positive and negative feelings about telemental health. While they reported finding it useful during the COVID-19 Pandemic, they also endorsed some concerns about its overall utility and effectiveness when compared to in-person care. Providers also indicated that telehealth was more satisfying and effective when care occurred primarily using clinical video technology compared with telephone.

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Telehealth and telemental health (“TMH”) have become increasingly popular, resulting in rapid expansion across private and public healthcare systems [1–3]. Due to increased utilization they may be perceived as relatively new modalities of care but have in fact been part of healthcare practice for the past several decades. For instance, the VA has been utilizing different forms of telehealth in its service delivery for several decades and has been a national leader in telehealth utilization and implementation (*for a more detailed history, see [4]*). In fiscal year 2018, about 13% of veterans were receiving some aspect of their care via telehealth [5]. Beyond being an option for routine clinical care, telehealth is seen as a critical resource during emergency responses. During the 2020 COVID-19 Pandemic (*subsequently referred to as “the Pandemic”*), telehealth utilization increased exponentially and has proven essential to the delivery of medical and mental health care [6, 7], allowing for new episodes of care and continuity of care while following physical distancing requirements and safety recommendations for both healthcare providers and their patients. In the VA, telehealth video sessions increased by around 1000% during the COVID-19 Pandemic, going from about 2500 daily telehealth sessions in early March 2020 to nearly 2,500 daily sessions by the Spring of that same year [8].

The nature of a pandemic is likely to increase mental health symptoms and needs across the general population, including patients already in mental health care as well as individuals not previously in care (*see [9, 10] for some examples*). This has so far been true of the COVID-19 Pandemic; in the absence of a cure or vaccine and with a consistent upward trend in positive cases [11], the adverse psychological effects are anticipated to grow, particularly as “the new normal” becomes more long-term in nature [12]. There is also concern that suicide risk may increase in response to the unique stressors of the Pandemic, changes in access to care and potential exacerbation of mental illness [13]. Given these existing and anticipated effects as well as their widespread nature across the population, timely access to reliable mental health care is more critical than ever. Mental health clinicians are not immune from pandemic-related stress and associated negative effects. In this way, the Pandemic may serve as somewhat of an equalizer in the treatment dyad, with mental health clinicians experiencing many of the same stressors and challenges as their patients. Despite this, the mental health workforce will need to rapidly adapt to the changing practice landscape and provide quality mental health care to an increasing number of individuals seeking assistance and symptom relief. Embracing TMH is one way to increase access to care and flexibility to ensure that mental health providers can continue to practice at capacity and provide consistent care as much as they are able.

In general, research has found that TMH services appear to be effective for assessment and treatment across the lifespan (e.g. [14, 15]), and diagnostic spectrum, including conditions like depression [16, 17], anxiety/panic [18], PTSD [19, 20], and substance use [21]. Direct comparisons of TMH to face-to-face care demonstrate that TMH is relatively comparable in terms of overall effectiveness [22, 23]. While the existing empirical base is largely positive, methodological limitations have also been pointed out, including a lack of randomized controlled studies and standardized measures, with outcomes of interest typically focused on (and limited to) satisfaction with, and acceptance of, TMH [23].

Despite several decades of research into TMH and its utility, studies have only recently begun to comprehensively examine how mental health providers view TMH as a modality of care. Provider attitudes are important to study and understand, as they have been shown to influence the adoption and implementation of clinical practices, such as evidence-based treatments [24, 25]. Data on provider perceptions of, attitudes towards, and beliefs about TMH, including the presence of potential biases that may limit their willingness to utilize this

modality in their own practice, remains relatively limited. Existing research has identified attitudes towards TMH as the most important factor in terms of intention to use this modality of care going forward [26].

One recent review found that providers generally have positive feelings about TMH while also noting several disadvantages or drawbacks [27]. It is important to note that, while a number of studies have found that satisfaction with TMH is high overall, satisfaction tends to be higher for patients than providers. While provider attitudes about TMH generally increase over time and with use, there is still an overall preference for face-to-face care, with the latter typically rated higher in terms of provider satisfaction [28–30], as are perceptions of task and goal completion and the development of the working alliance [31]. Biases also exist in the current literature base, including publication bias, performance bias, detection bias, attrition bias, and selective reporting bias [27]. It has been stated that TMH research may be inherently biased in assessing mostly providers and patients who have already embraced and are actively using this modality [32]. Providers willing to participate in studies on TMH are typically already using it, feel at least somewhat positively about it, and are likely to continue to use it throughout a study protocol [33, 34]. In contrast, providers who drop out of a study due to negative reactions to TMH or who do not participate in studies because they do not like or use TMH are likely not represented. As with most recommendations for changes in clinical service delivery, implementing TMH across diverse clinic settings has been challenging [35, 36]. Research suggests that at least some clinicians without prior experience in TMH remain skeptical about it as a viable modality of care [33, 37].

The general sentiment in the mental health practice community is that, whether preferred or not, TMH is here to stay [38–40]. It is likely that TMH will remain well-utilized going forward even as the COVID-19 Pandemic begins to resolve [41]. Given the number of advantages to organizations and patients, such as increasing access to care and reducing logistical and economic barriers to participating in mental health treatment, as well as the recent demonstration that TMH can be delivered and disseminated broadly across large and complex healthcare systems, institutions are likely to increase the utilization of TMH going forward. As one example, a recent VA memorandum stated that virtual care should remain an integral part of service delivery following the resolution of the Pandemic, and outlined the eventual goal of having up to 50% of all outpatient mental health care done virtually [41]. With rapidly changing legislation and increased funding for telehealth, continued growth and adoption are anticipated [42].

The COVID-19 Pandemic offers a unique opportunity to assess and compare providers with both prior and no experience in TMH, as well as offer insight into some of the perceived problems with TMH from clinicians who had not routinely adopted it prior to the Pandemic. As TMH is likely to become a regular and routine part of behavioral health care, understanding the perceptions and attitudes of the mental health care work force is of critical importance. It will also be helpful to understand and bridge the science-practice gap pertaining to TMH, if differences exist between provider beliefs and the empirical literature. The present study was designed to gain a better understanding of provider experiences with, and perceptions of TMH prior to, and during, the Pandemic. Specific aims were as follows: 1) describing current perceptions and use of TMH, including attitudes and beliefs about the importance, necessity, and effectiveness of TMH care; 2) describing current challenges in utilizing TMH including clinical and technological concerns, and 3) comparing perceptions about TMH during the Pandemic with a pre-Pandemic retrospective analysis. It was hypothesized that provider experiences, perceptions, and concerns about TMH would vary and include both positive

and negative feelings about TMH. It was also expected that previous experience with TMH would be associated with more positive perceptions of TMH overall, and that the Pandemic would result in more providers viewing TMH as an important, necessary, and effective modality of clinical care. Finally, it was hypothesized that previous experience, attitude towards TMH, and use of video modality would predict current attitude and use of TMH.

Methods

Procedure The present study is part of a larger initiative to understand mental health provider experiences with, and perceptions of, TMH and how these may have changed due to the 2020 COVID-19 Pandemic. A comprehensive survey was designed for this study in order to 1) understand pre-Pandemic and current utilization of TMH and existing challenges and barriers, 2) evaluate provider attitudes and perceptions of TMH prior to, and during the Pandemic, 3) obtain a current snapshot of beliefs and biases about TMH, 4) learn about the role of COVID-19 in the changing landscape of mental health care, and 5) understand what information is needed to aid the mental health workforce in becoming more comfortable and competent with TMH care. This study was reviewed by the Human Subjects Committee at [VA Connecticut Healthcare System] and determined to be exempt from further review. This study was conducted in compliance with the standards of the Internal Review Board of the Veterans Affairs Healthcare System.

Recruitment for the study occurred using targeted email invitations and a snowball sampling technique. Recruitment emails were sent to professional listserves for psychologists and other mental health providers. Emails were sent through VA mental health clinical and administrative listserves, state psychological association listserves, listserves affiliated with the American Psychological Association, as well as other relevant and professional listserve groups. Listserves that reach a national audience were chosen with the goal of recruiting a representative sample. Initial emails inviting mental health professionals to participate were sent in late May 2020 with a follow-up reminder email sent in mid-June. Inclusion criteria was broad: eligible participants needed to identify as a mental health professional and be proficient in English in order to read and complete the survey. All responses were anonymous. Survey recruitment was open for approximately one month from late May–June 2020. The timeline for the survey was intended to capture practice modifications associated with COVID-19, as data collection generally occurred prior to phased reopenings in many states.¹ Mental health providers who elected to learn more about the study were directed to a secure online data collection platform (Qualtrics), where written informed consent was provided followed by the option to participate in the study.

Participants Participants consisted of 1448 mental health professionals, the majority of which were psychologists (68.8%) followed by social workers (22.4%), psychiatrists (3.5%), nursing/APRN (2.1%) or other type of provider (3.2%). With regard to employment setting, most (81.6%) worked for Veterans Affairs (VA) followed by 9.1% working in private practice and the remaining 9.3% working in hospital or clinic, academic medical centers, research, or community mental health settings. The majority of the sample endorsed working full-time

¹ State responses to COVID-19 and associated actions (the closing and reopening of services, etc) varied widely by state (see <https://www.usa.gov/coronavirus>). However, the May–June time period closely aligns with an active phase of the pandemic and associated precautions and changes to normal mental health operations.

(91.9%), with 9.5% identifying as advanced trainees in their respective field of study. Participants represented all regions of the U.S., (with at least 1 respondent from 46 states and the largest percentage from California at 9.1%) and Puerto Rico. The majority of the sample self-identified as female (75.6%) and the mean age was 44.0 years old ($SD = 12.1$ years; age range = 22–87 years). Most participants reported living with others (81.0%) and of the 53.7% who endorsed having children, 40.2% indicated that at least one child or grandchild was currently living at home. Over a third of providers reported that they were currently balancing work demands with caring for family members. With regard to race and ethnicity, 84.2% identified as White or Caucasian, 4.7% as Black or African-American, 3.5% as Asian or Asian American, 0.6% as American Indian or Alaskan Native, 0.1% as Native Hawaiian or Pacific Islander, 5.6% as mixed race/other, and 6.4% as Hispanic/Latino/a/.

Measures The present study utilized two measures, one designed specifically for the study and an index of pandemic stress developed during COVID-19. Prior to completing these measures, a brief demographic form was presented to collect information about both personal characteristics and relevant professional information. Demographic information was not required and included fields such as gender identification, racial/ethnicity, sexual orientation, age, relationship status, living situation (including children and/or pets in the home), and state of residence/employment. Professional information included discipline, employment setting, full or part-time work status, licensed or trainee status, and years of employment/practice.

Telemental Health Survey This self-report survey was created by the study authors, who are experienced in survey design. The survey consisted of two parts – provider attitudes and perceptions of TMH prior to the Pandemic (Part 1; a retrospective assessment) and during the Pandemic (Part 2). Across all assessment phases providers were asked about the presence of both positive and negative feelings about TMH, their general attitude towards TMH as a modality of care, and their interest in learning more about and utilizing TMH going forward. Providers were also asked to indicate their agreement with TMH being important, necessary, and effective. This information was assessed in a standard five-point likert scale format, with response choices ranging from “*strongly disagree*” to “*strongly agree*.”

In the pre-Pandemic section of the survey (Part 1), providers were asked about their experience with, training in, and attitudes towards TMH prior to COVID-19. In Part 2 providers were asked about their current utilization of TMH and their degree of choice in offering TMH during the Pandemic. They were also asked if TMH was new to them when the Pandemic began and about the type of training that was provided as they made the shift to TMH. Information was asked about the modality and videoconferencing platforms providers were utilizing and the effectiveness or challenges associated with this. Providers were asked about their level of preparedness overall, feelings of stress with having to make a transition to TMH, as well as what might have been helpful at the time to make the transition more seamless. Questions were asked about how comparable TMH felt to face-to-face care in terms of treatment effectiveness and developing a therapeutic alliance with patients. Finally, they were asked if they received positive or negative feedback about TMH from their patients. A complete copy of the survey is available in [Supplementary Online Material](#) or upon request. The internal consistency within this sample was .82.

Pandemic Stress Index The Pandemic Stress Index (PSI; [43]) is a brief measure of personal impact associated with the COVID-19 Pandemic. The PSI consists of three main questions.

The first question is “what are you doing/did you do during COVID-19 (coronavirus)?” and asks about specific behavior changes that were made (e.g. quarantine, social distancing, workplace changes). The second question is “how much is/did COVID-19 (coronavirus) impact your day-to-date life?” and is rated on a 5-point likert scale. The third question is “which of the following are you experiencing (or did you experience) during COVID-19 (coronavirus)?” and includes a checklist of 20 items ranging from a positive diagnosis, emotional distress, anxiety about COVID-19, substance use, financial stress, stigma, and support. Analysis is item-level as there is not a total score for the measure. Question 3 was analyzed both descriptively and continuously by tallying counts of endorsed items with the premise that a higher count indicates higher stress. A total count (range 0–19) was derived as were three sub-scale counts for items pertaining to the following domains: COVID-19 specific stress and worry (range 0–8), mood related changes (range 0–6), and coping strategy changes (range 0–5). Cronbach’s alpha for this item was .75. As the prior two items in the scale are descriptive in nature and there is no total score, reliability was not computed for the entire scale. As the PSI is a new measure, there is a lack of information about its reliability and validity to date. There is presently one published study using the PSI [43], which includes more information about scale development which was created in response to the COVID-19 pandemic.

Results

Data Analysis Data was analyzed using the SPSS v23 statistical program. G*Power was used to conduct a power analysis which determined that the planned analyses were adequately powered to observe at least medium effects [44]. All responses were screened and analyzed for missing data prior to running analyses and cases with more than 5% missing data were removed. Of the total cases ($n = 1519$), 4.7% ($n = 71$) had greater than 5% missing data and thus were excluded, yielding 1448 responses that were included in subsequent analyses. Outliers, pertinent for the fill-in responses, e.g., age, were identified using boxplot graphs and removed. Statistical assumptions including normality of distribution and homogeneity of variance, were checked using the Shapiro-Wilk test and/or QQ plot as appropriate. Race was collapsed into a binary variable (white and non-white) to obtain adequate power. For all analyses, a p value of $<.05$ was used as the benchmark for statistical significance. Descriptive statistics, including means, standard deviations and frequencies, were utilized to describe the sample. Group differences regarding provider attitude and use of TMH prior to the Pandemic compared to during the Pandemic were analyzed using dependent t -tests. Multiple linear regression models were used to examine the predictive value of TMH attitudes, experience and pandemic-related stress on current TMH attitude and usage.

Pre-Pandemic: Experience Using TMH

Prior to the Pandemic, 35.4% of providers denied having experience using TMH while 64.6% endorsed prior experience using TMH. A similar percentage endorsed receiving formal training in TMH (65.4%) and 79.0% of providers reported receiving information (e.g. logistics, technology) about using TMH. When asked more specifically about usage, a smaller proportion of providers reported exclusively (3.0%) or regularly (10.3%) using TMH in clinical practice, compared with the majority who endorsed using TMH rarely (23.7%) or

only with select clients to accommodate a specific need or preference (52.8%). There were no significant sex or age differences observed regarding prior TMH experience; non-white respondents endorsed greater TMH usage compared with white respondents, $t(169.94) = 2.39, p < .05$.

Pre-Pandemic: Attitudes towards TMH

There was some variability in reported attitude towards TMH prior to the Pandemic which is illustrated in Table 1. Across the whole participant group, 44.8% strongly agreed that TMH was necessary pre-Pandemic but only 31.1% strongly agreed that they had interest in learning about and utilizing TMH in their clinical practice before the Pandemic. Similarly, about a third of respondents strongly agreed that TMH was an effective method of providing psychological services pre-Pandemic, while only 16.3% strongly agreed that it was *as effective* as face-to-face service delivery. Prior to the Pandemic, 31.4% endorsed liking TMH and viewed it as a viable care option, while 20% of providers endorsed ambivalence towards using TMH, and 14% reported no interest in TMH at all. When assessed by sex, females felt significantly more positively towards TMH compared with males, $t(1363) = -3.187, p < .01, Mdif = -.24, CI = -.39- -.09$.

During the Pandemic: Experience Using TMH

During the Pandemic, the majority of respondents reported regularly using TMH to deliver clinical care with 51.1% endorsing ‘always using,’ 27.7% endorsing ‘almost always using,’ and 86.2% reporting that using TMH is now required as part of their job and/or due to state mandates or recommendations. Notably, 31.1% of providers reported that their first use of TMH was in response to the shift to virtual care because of the Pandemic. The majority (80.5%) also reported receiving formal training in TMH before their first use and 92.2% reported receiving specific information regarding logistics and technology. Females endorsed

Table 1 Provider attitudes towards using TMH prior to the COVID-19 pandemic

Response options	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
Prior to the pandemic, I had positive feelings about TMH	25.6%	29.9%	22.2%	17.2%	4.7%
Prior to the pandemic, I had negative feelings about TMH	4.5%	23.1%	20.2%	22.2%	29.7%
Prior to the pandemic, I was interested in learning about and utilizing TMH	31.1%	31.9%	17.1%	12.7%	7.2%
Prior to the pandemic, I felt that TMH was important	45.9%	36.4%	13.4%	3.1%	1.3%
Prior to the pandemic, I felt that TMH was necessary	44.8%	36.3%	13.0%	4.7%	1.2%
Prior to the pandemic, I believed TMH was an effective method of providing psychological services	33.1%	39.3%	14.6%	10.7%	2.2%
Prior to the pandemic, I believed TMH was <i>as effective</i> as face-to-face service delivery	16.3%	27.8%	11.6%	28.3%	15.9%

using TMH significantly more frequently compared with males, $t(1341) = 3.05$, $p < .01$, $M_{diff} = .22$, $CI = .08-.36$.

Technology and Preparedness

Most providers endorsed that the transition to TMH was at least ‘somewhat stressful’ (62.5%) and the following factors were endorsed as contributing to this experience of stress: rapid transition to TMH, having to use an unfamiliar modality, learning new technology, worry about how TMH would affect provider-client rapport, and learning how to deliver care using TMH. Just over half of respondents reported primary use of a VA video platform to conduct TMH services, which aligns with the composition of the participant group as the majority were VA affiliated. A small proportion of respondents (11.6%) reported using a non-VA HIPAA compliant platform and 21.6% reported that telephone was their primary modality of TMH service delivery. With regard to technology effectiveness, providers indicated that their primary platform was: extremely (21.1%), very (43.6%), moderately (29.2%), slightly (5.1%) or not at all (1.0%) effective for TMH delivery. Responses regarding technology connectivity were similar: 20.2% reported ‘excellent’ connection, 47.1% ‘good’ connection, 26.1% ‘average’ connection, 5.7% poor connection and 0.9% reported terrible connectivity. In terms of technology preparedness, a small minority felt ill-equipped to use TMH (5.4%) whereas the majority reported (94.6%) endorsed feeling at least somewhat prepared to use TMH from a technology perspective. The vast majority of respondents (94.8%) also felt at least somewhat prepared to use TMH from a psychotherapy perspective. With regard to perception of service delivery normality using TMH, 57.1% felt they could deliver care normally and 42.9% did not. Providers endorsed that retrospectively, having more clinical experience using TMH (41.7%), having more information about the efficacy of TMH (31.8%), and having more formal training in TMH (33.5%) would have been helpful prior to transitioning to TMH during the Pandemic.

During the Pandemic: Attitudes towards Using TMH

Consistent with pre-Pandemic responses, females endorsed a significantly more positive attitude towards TMH compared with males, $t(442.70) = -3.40$, $p < .01$, $M_{diff} = -.25$, $CI = -.39 - -.10$, and were more inclined to describe TMH as *effective* as face-to-face clinical service, $t(467.70) = -4.43$, $p < .001$, $M_{diff} = -.40$, $CI = -.58 - -.22$. Table 2 depicts provider attitudes across the whole sample regarding TMH use during the Pandemic. Overall, most providers endorsed some level of agreement that TMH is necessary, useful, and important and endorsed generally positive feelings about using it. Most providers (83.8%) felt that their working alliance with clients using TMH was at least somewhat similar to face-to-face or usual delivery of care, with 30% reporting that the alliance felt ‘very similar’ across modalities. When using TMH, 18.2% reported ‘always’ being able to establish a strong alliance compared with 29.0% who reported ‘always’ being able to maintain the alliance. The method in which remote care was delivered made a significant difference in terms of the working alliance. When comparing respondents who primarily used a video platform to those who primarily used the telephone to deliver care, the similarity to face-to-face work and ability to establish and maintain working alliance were rated significantly more positively by those who primarily used video, all p 's $< .001$. Providers who primarily used video platforms also perceived TMH to be significantly more useful, satisfying, and equivalent to face-to-face care compared with

Table 2 Provider attitudes towards using TMH during the COVID-19 pandemic

Response options	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
I have positive feelings about TMH	44.8%	35.7%	9.7%	7.0%	2.7%
I have negative feelings about TMH	3.5%	15.9%	16.7%	25.1%	38.8%
I am interested in learning more about and utilizing TMH going forward	51.1%	29.0%	12.9%	5.1%	1.8%
I feel that TMH is important	75.4%	21.3%	2.2%	0.6%	0.5%
I feel that TMH is necessary	77.0%	19.4%	2.4%	0.7%	0.5%
I believe that TMH is an effective method of providing psychological services	53.5%	34.8%	6.7%	4.0%	1.0%
I believe that TMH is as effective as face-to-face service delivery	23.3%	35.8%	10.3%	19.1%	11.5%

providers who primarily used telephone, all p 's < .001. Across the whole participant group, 41.5% rated TMH by video platform as 'very effective' compared with only 12.2% who gave TMH by telephone the same rating.

During the Pandemic: Patient Feedback

With regard to patient feedback, 42.3% of providers reported receiving only positive feedback about TMH from their patients, 10.3% reported receiving only negative feedback about TMH from their patients, 41.2% of providers reported receiving mixed (both negative and positive) feedback and 5.3% stated they had not received any feedback about TMH. A sizeable proportion (64.0%) reported that they have had at least one client who declined to receive care via TMH. A majority (83.1%) of providers indicated that irrespective of specific positive and/or negative feedback, their clients seemed to appreciate the availability of TMH during this time.

Changes in TMH Attitudes and Usage

There was a significant shift in attitude and use regarding TMH when comparing current responses with the retrospectively reported pre-Pandemic responses. Repeated measures MANOVAs were utilized to assess differences with regard to these core variables. There was a statistically significant difference in positive and negative attitudes towards TMH, $F(2, 1293) = 209.50$, $p < .001$; Wilks' Lambda = .76, $\eta^2 = .25$. Pairwise comparisons revealed significant changes for both positive and negative attitudes, with a mean difference of $-.58$, $p < .001$ (CI = $-.64 - -.52$) for positive attitude and a mean difference of $.29$, $p < .001$ (CI = $.23-.35$) for negative attitude towards TMH when comparing pre-Pandemic responses with current responses. A statistically significant difference in effectiveness of TMH, necessity of TMH, belief that TMH is as effective as face to face care, and use of TMH was also observed, $F(4, 828) = 261.84$; Wilks' Lambda = .44, $\eta^2 = .56$. Pairwise comparisons revealed significant changes across all variables included in this model, all p 's < .001. Results suggest that attitudes toward TMH became significantly more positive and providers felt more strongly that TMH is important, necessary and effective during the Pandemic.

Pandemic-Related Activities and Stress

The vast majority of respondents (93.1%) felt as though the COVID-19 Pandemic was impacting their day to day life at least ‘moderately.’ Most of the sample (99.6%) endorsed practicing social distancing and 22.3% reported engaging in isolation or quarantine at some point during the Pandemic. About two-thirds (68.4%) were working from home, with roughly 20% reporting working more hours and 10% reporting working less. Providers endorsed a variety of stressors related to the Pandemic, which fell into the following three domains: 1) COVID-19 specific worry or stress, 2) mood related changes, and 3) coping strategy changes. With regard to COVID-19 specific worry or stress the following were endorsed: worry about friends and family (92.0%), fear of contracting COVID-19 (75.1%), receiving a COVID-19 positive diagnosis (1.4%), fear of giving COVID-19 to someone else (74.8%), confusion about COVID-19 (45.9%), not having enough basic supplies (24.6%), personal financial loss (35.4%), and COVID-19 related stigma or discrimination (11.4%). The mean for this domain was 3.70 ($SD = 1.36$; range = 0–8). With regard to mood related symptoms, the following were endorsed: frustration (81.4%), boredom (52.6%), loneliness (39.6%), increased anxiety (67.9%), increased stress related to balancing family and work demands (52.8%), and increased depression (40.0%). The mean for this domain was 3.59 ($SD = 1.52$; range = 0–6). Finally, regarding changes to coping strategies the following were endorsed: increased alcohol or other substance use (19.6%), changes to normal eating patterns (54.9%), changes to normal sleeping patterns (48.3%), leveraging greater emotional or social support (83.6%), and getting financial support from others (7.7%). The mean item count for this domain was 2.2 ($SD = 1.02$; range = 0–5). Across all domains, the total mean was 9.13 ($SD = 3.34$; range = 0–19). Most respondents (83.6%) endorsed feeling as though they were contributing to the greater good by taking measures to prevent themselves or others from getting COVID-19.

Prior to running the following regression models, the independent variables were examined for collinearity. Results of the variance inflation factor suggest that the assumption of multicollinearity were not violated. Correlation and multiple regression analyses were conducted to examine the relationship between current TMH attitudes and use and the following potential predictors: sex, prior positive feelings about TMH, prior negative feelings about TMH, prior use of TMH, prior TMH training, current primary TMH platform (video or telephone), and current pandemic-related stress (PSI total score). The first model, using the enter method to predict positive attitude towards using TMH, found that sex (identifying as female), prior positive attitude, prior negative attitude, prior belief that TMH is effective and current level of stress explained a significant amount of the variance. The second model, predicting negative attitude towards using TMH, only found that prior positive and negative attitudes and prior belief in the effectiveness of TMH contributed significantly to the model (Table 3). Primary platform, race, prior use and training were not significant in either model. Using the same predictors and the enter method, only primary platform (in favor of video) and prior use of TMH significantly predicted current TMH use. No other variables significantly contributed to the model (Table 4).

Discussion

The current study provides an important touchpoint about provider usage of and attitudes towards TMH care amidst a global pandemic that has rapidly increased TMH use across mental health treatment settings. The study also served to capture the perspective of providers who may not traditionally be represented in TMH studies due to a previous lack of interest in or utilization of

Table 3 Summary of multiple regression analysis predicting TMH attitude during the pandemic

Dependent variable	<i>R</i>	<i>R</i> ²	<i>R</i> ² change	<i>F</i>	Independent variables	Standardized beta
Model 1. Positive attitude towards TMH	.63	.40	.40	52.34***	Primary platform	.04
					Sex	.06*
					Prior use	.03
					Prior training	.01
					Prior positive attitude	.35***
					Prior negative attitude	-.13**
					Prior effective belief	.21***
					Current stress	.07*
Model 2. Negative attitude towards TMH	.61	.37	.36	46.06***	Primary platform	-.02
					Sex	-.04
					Prior use	.00
					Prior training	.01
					Prior positive attitude	.15**
					Prior negative attitude	.64***
					Prior effective belief	-.10*
					Current stress	-.06

* $p < .05$ ** $p < .01$ *** $p < .001$

TMH in their clinical practice. The providers who were surveyed reported a notable increase in TMH use during the Pandemic, with more than half of the sample exclusively using TMH during this time. Nearly a third of providers reported using TMH for the first time in response to the Pandemic. While most clinicians indicated that they felt adequately prepared to use TMH from both a technological and treatment perspective, they also reported that more information about TMH, more exposure to TMH, and specialized training in TMH would have been helpful. Using TMH during the Pandemic was predicted by prior TMH use as well as using clinical video technology for service delivery.

In line with existing research on innovation adoption and implementation (e.g. [45, 46]), it is important to understand provider perceptions of TMH, as attitudes are likely to influence future utilization in important ways [26]. It is also interesting to consider how somewhat forced use of TMH during the COVID-19 Pandemic may contribute to shifts in provider attitudes, as perceived behavioral control is a known element of the theory of planned behavior [47]. Pre-Pandemic provider attitudes were somewhat mixed, with just over half of providers indicating generally positive feelings about TMH. Nearly a third of providers endorsed the presence of negative feelings,

Table 4 Summary of multiple regression analysis predicting TMH use during the pandemic

Dependent variable	<i>R</i>	<i>R</i> ²	<i>R</i> ² change	<i>F</i>	Independent variables	Standardized beta
TMH use	.27	.07	.07	6.32***	Primary platform	-.16***
					Sex	-.04
					Race	-.03
					Prior use	.13**
					Prior training	.03
					Prior positive attitude	-.10
					Prior negative attitude	-.05
					Prior effective belief	-.05
					Current stress	-.00

* $p < .05$ ** $p < .01$ *** $p < .001$

and only a minority viewed TMH as a viable modality for clinical service delivery. Despite these mixed feelings, there was high endorsement for believing that TMH was important, necessary, and effective, though relatively low endorsement for providers believing that TMH was *as effective* as face-to-face care.

During the Pandemic, the majority of providers endorsed positive feelings about TMH, though a sizeable minority continued to also endorse negative attitudes. Most providers saw TMH as important, necessary, and effective, with a small minority not viewing TMH as an effective option. Providers indicated that they received both positive and negative feedback about TMH from their patients. These findings are generally consistent with research demonstrating satisfaction with TMH across both patients and providers [22, 48], though the present study may have captured more negative sentiments by explicitly asking about them. Providers who primarily used video found TMH to be more useful, effective, and equivalent to face-to-face care than those who primarily used the telephone.

Some interesting preliminary findings also emerged regarding demographic factors, with female providers reporting more TMH use during the Pandemic and more positive attitudes towards TMH overall. It is somewhat difficult to interpret this finding without additional information. It is possible that women may have responded more flexibly during the Pandemic, which would be consistent with research showing that women displayed more cognitive flexibility in response to an artificial stress-induction condition [49], though further research would be needed to investigate this possibility.

Most providers experienced the working alliance as at least somewhat similar to face-to-face care, though only a minority felt that they were always able to establish or maintain a strong alliance. This is consistent with previous research showing that providers may hesitate to use TMH due to concerns about the alliance [50–52], as well as studies that find that patients tend to give higher ratings of the alliance during TMH than providers [53]. However, there are a number of studies that support the notion that the working alliance can be developed and maintained over TMH [51], and can even be comparable to face-to-face care [54]. Importantly, the technology and connectivity problems that can and do occur in TMH care have been demonstrated to negatively impact perceptions of the alliance [37, 55, 56], highlighting the importance of optimizing technology to support TMH service delivery.

Most providers also endorsed some degree of pandemic-related stress pertaining to COVID-19. They endorsed negative impact across domains, including COVID-19 specific worry or stress and changes in their mood or coping strategies/behavior. Given the known negative impacts of stress generally and the potential for stress in one life domain to affect another [57] it is possible that dealing with COVID-19 may have altered provider receptivity to a new modality of care or even influenced their perceptions of their clinical practice, including how effectively they believed they were working at the time.

Consistent with previous work which has suggested that provider attitudes may be related to their level of exposure to TMH and that acceptance of this modality may increase with use [27], there were significant changes across the core dependent variables of the study due to the increased utilization that occurred as a result of the Pandemic. Large effects were found for an increase in positive feelings about TMH and believing that TMH is important and necessary. There was also a positive shift in terms of beliefs about TMH effectiveness, representing a medium effect. Small effects occurred for increased beliefs that TMH is as effective as face-to-face care as well as a reduction in negative feelings about TMH. Positive attitudes towards TMH were predicted by a number of factors, including female sex, pre-Pandemic positive attitudes, prior beliefs that TMH was effective, less pre-Pandemic negative attitudes, and lower levels of pandemic-related stress.

Despite a marked increase in utilization and positive shifts in provider attitudes towards TMH, some negative feelings persisted. While 57% of providers felt that they could deliver care normally using TMH, 43% of providers did not, and nearly a third of providers reported feeling that TMH was not as effective as face-to-face care. Overall, video was viewed more positively than telephone care, impacting both beliefs about treatment effectiveness and the quality of the alliance. This is consistent with the extant literature base on TMH effectiveness, which has largely investigated video care. Research on telephone-only TMH is currently in its infancy, and studies have typically focused on short-term and structured interventions as well as comparing telephone-care to treatment-as-usual or waitlist controls (e.g. [58, 59]). Direct comparisons have also found superior performance for video [60], which is consistent with current practice guidelines promoting video as the standard of care for TMH treatment [41].

Limitations There are a number of limitations to the current study. With the 2020 COVID-19 Pandemic serving as the impetus for the study, all pre-Pandemic ratings were retrospective in nature. Retrospective assessment introduces some potential for misremembering or other bias, and it would have been preferable to have had existing data to compare to responses during the Pandemic. It is also possible that the actual necessity of TMH use in some cases may have influenced provider perceptions. Providers who were “forced” to use TMH in situations where they may otherwise not have may have developed artificially positive feelings about it by virtue of wanting to believe that they were providing comparable and effective care. As the majority of the study sample endorsed pandemic-related stress across multiple domains, it is also possible that navigating this additional stress impacted provider openness to a new clinical service modality and influenced their perceptions in a negative way. The study sample consisted primarily of White females. While this generally mirrors the demographic makeup of the mental health profession [61], a more diverse and representative sample would have been preferable. Given the relatively low frequency of racial or ethnic minority identities, it was necessary for purposes of obtaining adequate statistical power to collapse the group into white or non-white respondents, which has the potential to minimize or miss important differences. Though efforts were made to recruit evenly across the mental health profession, the sample also consisted mainly of psychologist providers with other mental health disciplines somewhat underrepresented; thus findings may not generalize to the mental health field as a whole. Among mental health practitioners, providers’ theoretical orientations and sense of roles and responsibilities vary widely and may influence use of and attitude towards TMH. We offer this as an important area for future research. Another limitation in generalizability is due to the majority of respondents being employed by the VA, as the VA has promoted TMH use nationally across its healthcare systems in addition to offering the trainings and resources necessary for TMH use. VA clinicians may therefore not be representative of mental health clinicians in non-VA practice settings. While efforts were made to obtain an equivalent non-VA sample, a larger sample of community clinicians would have been preferable and allowed for direct comparisons. Finally, given a relative lack of existing measures of pandemic-related stress, the measures utilized were new and fairly unvalidated. Using a new measure always introduces some level of uncertainty, and more in-depth psychometric analysis is warranted. Despite these limitations, the study nevertheless offers important information about provider perceptions of TMH and is fairly representative of a white, female VA provider sample. Future research should investigate more diverse and representative samples and obtain more information about provider perceptions and attitudes, with a focus on identifying specific barriers and challenges to implementing TMH into routine clinical care.

Clinical Applications As TMH is likely to become a routine part of clinical care beyond the Pandemic, a deeper understanding of the clinical issues that occur using this modality, such as risk assessment, will be of paramount importance to investigate and consider [13]. The current study highlights the importance of exposure to TMH in promoting continued utilization and shaping provider perceptions. The data also suggest that video may be perceived as more equivalent to face-to-face care in terms of intervention effectiveness, the therapeutic relationship, and provider acceptance of TMH. While there are likely appropriate uses for telephone-only care, this option should be used judiciously until more is known about its effectiveness and limitations. The data also point to the need for increased information and training, as well as room for improvement in terms of technological platforms and connectivity. Maximizing internet bandwidth and ensuring up-to-date devices and video platforms that providers and patients can both use easily will likely improve sustained use and acceptance of TMH care. Blended care models also offer an opportunity to address provider concerns and promote flexible care options for patients. For example, initial assessments could occur in-person whenever possible to allow for a more thorough intake and the benefit of initiating the working alliance in person, with some (or all) of follow-up care provided virtually, as indicated. All-or-nothing models are unlikely to be helpful to institutions or providers, and blended care models should be available and investigated to understand how they may help to resolve some of the concerns about increasing TMH use. Institutions should also consider how best to support providers in continuing to integrate TMH, including creating ways to easily disseminate and receive treatment materials and incorporate measurement-based care into routine practice.

The COVID-19 Pandemic appears to have had at least some influence on provider perceptions of TMH. Results from the present study suggest that this shift has largely been positive; however, negative attitudes and concerns, particularly with regard to clinical and technological issues, clearly remain. While TMH is an important option for mental health care delivery, it is unlikely that TMH will be the right choice uniformly for all patients in all situations. More information about provider experiences with, beliefs about, and resistances to TMH will be needed as we move forward in the changing practice landscape exponentially accelerated by COVID-19. It will be important to educate providers and eliminate both barriers and biases to implementing TMH into routine clinical care. However, healthcare administrators, leaders, and public officials also need to carefully consider the reactions and concerns on-the-ground among mental health clinicians. Bidirectional feedback will be critically important in merging the science-practice gap on this issue, and drawing on the expertise of our mental health workforce can help to develop clinically-informed guidelines about the conditions in which TMH is appropriate and when this is not clinically indicated or preferred. Working together, we can discover the most conducive conditions to TMH care and thoughtfully improve clinical service delivery as we navigate the new normal of mental health care.

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Declarations This study and its procedures were performed in compliance with the tenets of the Declaration of Helsinki.

IRB Approval This study was reviewed and approved by the Human Subjects Committee of the VA Connecticut Healthcare System VA Medical Center.

Informed Consent Informed consent was obtained from all individual participants included in the study.

Data Transparency The dataset for this study is not stored in a data repository. However, the dataset for this study is fully accessible and will be made available upon request. Please email the corresponding author to obtain the data.

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