American Psychological Association

Professional Psychology: Research and Practice

0735-7028/18/$12.00

2018, Vol. 49, No. 3, 205–219
http://dx.doi.org/10.1037/pro0000188

Survey of Psychologists' Telebehavioral Health Practices: Technology Use, Ethical Issues, and Training Needs

Robert L. Glueckauf
Florida State University

Marlene M. Maheu
Telebehavioral Health Institute, Inc., Cheyenne, Wyoming

Kenneth P. Drude
Dayton, Ohio

Brittny A. Wells
University of Central Florida

Yuxia Wang and David J. Gustafson
Florida State University

Eve-Lynn Nelson
University of Kansas

As telecommunication technologies have become more widely available and affordable, opportunities for psychologists to engage in telebehavioral health (TBH) have expanded greatly. A national sample of 164 professional psychologists completed a 28-item survey focusing on (a) current and anticipated use of telecommunication technologies in delivering TBH services, (b) types of telecommunication modalities currently used in clinical practice, (c) ethical and legal/regulatory concerns related to delivery of TBH services, and (d) educational and training needs for TBH practice. Associations between demographic factors (i.e., age, gender, practice setting, practice region, and years since completion of highest academic degree) and responses on survey items were examined. In descending order, the technologies most commonly used by psychologists were: landline telephone, mobile telephone, e-mail, and videoconferencing. A lower proportion of psychologists working in public settings used landline telephones, mobile telephones, or e-mail to deliver TBH than that of psychologists engaged in independent practice. In regard to respondents' age, the proportion of psychologists delivering TBH collapsed across technologies was substantially higher among respondents 37 years of age or older compared with that of 36-year-olds or younger. Respondents also noted several ethical/legal barriers in providing TBH services, particularly managing emergencies, licensure requirements, and uncertainties about security, as well as confidentiality, Health Insurance Portability and Account Act (HIPAA) compliance, and malpractice insurance coverage. Overall, a substantial discrepancy was noted between psychologists' positive appraisals of

Robert L. Glueckauf received his MS and PhD in clinical psychology from Florida State University. He is Professor in the Department of Behavioral Sciences & Social Medicine at the Florida State University College of Medicine and research director of the Tallahassee Memorial HealthCare Memory Disorder Clinic. His research interests lie in the development and evaluation of telehealth-based interventions for individuals with chronic health conditions and their family care partners, outcomes measurement, and spirituality and health.

Marlene M. Maheu received her MA and PhD in clinical psychology from the California School of Professional Psychology-San Diego. She is founder and executive director of the Telebehavioral Health Institute, Inc. Her areas of professional interest include telebehavioral health professional training and consultation on legal and ethical best practices for telehealth and various technologies.

Kenneth P. Drude received his PhD in counseling psychology from the University of Illinois. He currently serves on the Ohio Board of Psychology and has an outpatient practice in the Dayton, Ohio area. His areas of professional interest include telebehavioral training, practice, policy, and standards.

Brittny A. Wells received her DrPH from the Institute of Public Health at Florida A&M University. She is Assistant Professor of Health Professions at the University of Central Florida. Her research interests focus on investigating how work-related experiences impact health outcomes for Black women.

Yuxia Wang received her MPH from the University of Kentucky. She is currently data analyst in the Department of Behavioral Sciences and Social Medicine at the Florida State University. Her research interests lie in the field of biostatistics, particularly data management and data analysis.

David J. Gustafson received his MS in Experimental Psychology from Florida State University. His research interests focus on program evaluation and measurement, particularly large-scale instrument development and analysis, as well as standard setting at state and national levels.

Eve-Lynn Nelson received her PhD in clinical psychology from the University of Kansas. She is Professor at the University of Kansas Medical Center and directs the University of Kansas Center for Telemedicine & Telehealth. Her research interests focus on the evaluation of evidence-supported, patient-centered approaches in underserved communities, including evaluation of videoconferencing technologies to deliver clinical and educational programming.

We are grateful to David J. Gustafson, who passed away during the course of the study, for his outstanding contributions in designing the survey and data analytic approach. We also thank Linda Jamison for her editorial assistance in preparing this article for publication.

Correspondence concerning this article should be addressed to Robert L. Glueckauf, Department of Behavioral Sciences and Social Medicine, College of Medicine, Florida State University, 1115 West Call Street, Tallahassee, FL 32306-4300. E-mail: robert.glueckauf@med.fsu.edu

TBH and actual implementation, underscoring the ongoing barriers in the adoption of telehealth technologies in practice. Future directions addressed the need for training and education in TBH best practices.

Public Significance Statement

A sample of 164 professional psychologists completed a 28-item survey focusing on (a) their current and anticipated use of telecommunication technologies in clinical practice (also known as telebehavioral health [TBH]), (b) ethical and legal concerns in delivering TBH services, and (c) their specific education and training needs for TBH practice. A substantial discrepancy was found between psychologists' current moderately low TBH implementation levels and their future positive expectations offering such services, underscoring the need for education about ethical guidelines, legal requirements, and models for best practice.

Keywords: telehealth, psychology, ethics, training, practice

Research on behavioral health professionals' knowledge, attitudes, and uses of telehealth has grown in importance and scope over the past decade. Telebehavioral health (TBH) services are likely to play a key role in the evolving health care system, both in meeting the needs of persons with mental health difficulties and in improving efficiency and cost-effectiveness of treatment delivery.

Although most TBH survey studies have incorporated a mixture of professionals from various behavioral health disciplines (Centore & Milacci, 2008; Deen, Withers, & Hellerstein, 2013; Ford, Avey, Deruyter, Whipple, & Rivkin, 2012; Jameson, Farmer, Head, Fortney, & Teal, 2011; Maheu & Gordon, 2000; Simms, Gibson, & O'Donnell, 2011; Wells, Mitchell, Finkelhor, & Becker-Blease, 2007), a smaller, but nonetheless suggestive, group of investigations has focused on knowledge, attitudes, and practice patterns of single professions, such as psychologists (Cooper & Neal, 2015; McMinn, Bearse, Heyne, Smithberger, & Erb, 2011; McMinn, Buchanan, Ellens, & Ryan, 1999; Mora, Nevid, & Chaplin, 2008; Perle et al., 2013; Wangberg, Gammon, & Spitznogle, 2007), social workers (Finn, 2002, 2006), marriage and family therapists (Hertlein, Blumer, & Smith, 2014), and psychiatric residents and fellows (Glover, Williams, Hazlett, & Campbell, 2013). The majority of these studies have been performed using samples of U.S. behavioral health professionals.

In examining the findings of psychologist-specific TBH survey research, demographic and background factors (e.g., age, gender, length of professional career, and theoretical orientation) typically have not correlated significantly with respondents' knowledge and attitudes about the use of telecommunication modalities (e.g., McMinn et al., 2011; Perle et al., 2013). Exceptions include Perle et al.'s (2013) study that showed respondents under 45 years of age (i.e., a combination of licensed psychologists and psychology doctoral graduate students) were more receptive than those 45 years of age and older in the use of TBH interventions as an adjunct to in-person services and as a stand-alone intervention. Mora et al. (2008) found that male psychologists were more likely to endorse the use of e-mail, chat, and teleconferencing with clients than their female counterparts. Furthermore, several studies have shown that psychologists with a cognitive–behavioral orientation reported more favorable appraisals of telepractice than those with a psychodynamic or psychoanalytic perspective (Mora et al., 2008; Perle et al., 2013).

Note also that TBH survey studies have included a variety of psychologist samples across geographical regions, such as American Psychological Association (APA) members primarily involved in independent practice (e.g., McMinn et al., 1999, 2011; Perle et al., 2013) and state psychological association members (Mora et al., 2008). However, comparisons between knowledge and attitudes about TBH between psychologists working in independent practice and public settings and across geographical areas were not performed.

In regard to the use of telecommunication technologies, previous research has assessed which modalities psychologists use or would consider using in their clinical practice (Cooper & Neal, 2015; McMinn et al., 1999, 2011). The most consistent finding across these studies has been the limited use of telecommunication modalities in delivering services to clients. Of those technologies adopted by psychologists in delivering clinical services, synchronous applications (e.g., web-based videoconferencing) were used substantially more often than those asynchronous in nature (e.g., e-mail and texting; Mora et al., 2008; Perle et al., 2013). In contrast, the highest overall rates of technology use were obtained for administrative or nonclinical functions, such as billing and word processing. Although these studies have provided an important "first take," significant gaps persist in our knowledge about the proportion of psychologists who use or intend to use which types of technologies with which client populations.

Turning to legal and regulatory issues, previous survey studies provided preliminary evidence suggesting psychologists have minimal knowledge of laws and regulations relevant to telepractice (Maheu & Gordon, 2000; Mora et al., 2008; Perle et al., 2013). Psychologists reported little or no awareness of laws regulating TBH practices in their home state. They also had limited knowledge about restrictions in providing TBH services to clients located in jurisdictions where they were not licensed to practice.

Next, several studies indicated psychologists were concerned about the ethics of TBH practice (McMinn et al., 1999, 2011; Perle et al., 2013). A repeated and prominent ethical issue was uncertainty about client confidentiality in using telecommunication technologies. Other common concerns included how to manage client crises in the online context and the empirical evidence supporting the efficacy of telehealth services.

Based on these findings, several authors have advocated for training in TBH in psychology graduate programs and continuing education after completing terminal degrees (Callan, Maheu, & Bucky, 2017; McMinn et al., 1999, 2011). Nonetheless, limited information has been garnered ascertaining the education and training needs of psychology graduate students, interns/postdoctoral fellows, and psychologists (Duncan et al., 2013). Designing effective educational programs to ameliorate such shortcomings is predicated on conducting assessments of specific needs and anticipated telehealth practice requirements.

Thus, the primary objectives of the current study were to address limitations in our understanding about the influence of practice settings and region of practice on TBH attitudes and knowledge, the characteristics and proportion of psychologists planning to offer or currently providing TBH services, as well as their educational and training needs and barriers to adopting technologies for delivering TBH services. Furthermore, a comprehensive analysis was performed to examine associations between background factors (i.e., age, gender, primary region of work, primary work setting and years engaging in professional practice since obtaining highest degree) and psychologists' use of telecommunication technologies, types of online services currently provided to clients, TBH education and training needs, and ethical and legal concerns related to the delivery of TBH services.

Method

Participants

Behavioral health professionals from multiple disciplines were recruited using a variety of strategies, including mailings to 209 national and regional/state psychological, social work, and counseling associations. Other recruitment efforts included postings on behavioral health professional listservs, announcements in print publications, and distributing survey information at APA annual conventions. The current study focused exclusively on the responses of a subset of 164 respondents identifying as professional psychologists. Because of survey distribution across multiple settings and media outlets, specific survey response rates could not be calculated.

Standard survey follow-up procedures were not deployed in the current study because all surveys were completed anonymously on SurveyMonkey (2017). However, to enhance sample accrual among psychologists, we manually distributed flyers at three consecutive APA national conventions (i.e., 2013–2015). The URL of the survey was inserted in the narrative of the flyer. We also conducted an e-mail campaign over the same time period requesting APA State Association executive directors to publish brief announcements about the TBH survey study in their respective newsletters. However, we were unable to obtain data on the number of State Associations that published announcements in their newsletters, as well as the frequency of publication by each association.

The current investigation was approved by the Florida State University Institutional Review Board. Respondents were included in the study if they were (a) doctoral-level psychologists in the United States or its territories, and (b) provided clinical or counseling services. To ensure anonymity, participants were not asked to disclose personal information about the specific contents of online services they offered and were assured no personal data would be collected that potentially could identify them, such as e-mail addresses.

Instrumentation

A five-person team of four doctoral-level psychologists and a master's-level program evaluation specialist with TBH expertise across diverse populations and practice settings met monthly for eight sessions to finalize the wording and selection of items within each domain. The 28-item survey instrument focused on five key domains: providers' use of telecommunication modalities; client population characteristics; professional, ethical, and legal/regulatory issues; and telehealth training and practice. Item contents from previous telehealth surveys from the United States and Canada (Centore & Milacci, 2008; Finn, 2006; Finn & Barak, 2010; Menon & Rubin, 2011; McMinn et al., 2011; Mora et al., 2008; Wells et al., 2007) were also examined and modified for use in the current survey instrument.

Procedures

Prospective participants were given a link to the secure online survey located on SurveyMonkey (2017). They initially accessed the informed consent form, followed by an introduction to the survey and the 28-item questionnaire. Participants were told the objectives of the study were to gather information about (a) telecommunication technologies "presently used or intended to use in delivering online counseling," (b) "types of online services currently provided or would consider providing" in the future, (c) "perceptions about training needs in the provision online counseling," and (d) "ethical or legal concerns in the performance of online mental health counseling." The term, *online counseling* was defined as "any type of counseling for mental health, as well as substance abuse, or coaching using telecommunication technologies, such as internet, telephone, videoconferencing, or e-mail."

Participants subsequently received the following instructions, "It is helpful if you answer every item; however, you can skip any item except those marked with an asterisk (*). There are no right or wrong answers to the survey." Note that the required items marked with an asterisk were the two inclusion criteria listed above and seven additional items (i.e., whether they read and understood the informed consent form and agreed to participate in this study, age bracket, gender, profession, primary work setting, primary state or U.S. territory where they worked, and years worked as a mental health service provider since obtaining their highest academic degree).

The online survey took approximately 10 min to complete. The time frame of data collection was January 2013 to December 2016. The researchers subsequently downloaded the data from SurveyMonkey (2017) to Statistical Analysis System Version 9.4 (SAS, 2017) for statistical analysis.

Data Analytic Strategy

Analysis of the findings of the present study was divided into three steps. First, descriptive statistics were calculated on the demographic and background characteristics of survey respondents. These statistics included psychologist's age, gender, pri-

mary region of work (Northeast, Midwest, South, or West), primary work setting (independent or public practice), and years worked since obtaining highest academic degree. The primary regions of work (West, Midwest, Northeast, and South) were derived from the U.S. Census Bureau's regions (U.S. Census Bureau, 2015). Independent practice settings included independent practice, small group practice (two to nine practitioners), and large group practice (10 or more practitioners). Public practice settings consisted of health or behavioral health clinics, hospitals, military and university health care facilities, and the U.S. Department of Veterans Affairs.

A bracketing strategy was used in collecting data on psychologists' age, years worked since obtaining highest academic degree, average hours per week currently spent in online practice, percentage of practice currently delivering online counseling, and percentage of practice participants would like to spend in delivering online services in the future. This survey procedure was employed as a participant time-saving measure and to facilitate statistical analysis. However, an ambiguity emerged in analyzing the age factor. Psychologists' age was grouped originally into the following categories: 18–26, 27–36, 37–46, 47–56, 57–64, and 65 and older. Only one participant fell between the ages of 18 and 26 and most likely was located at the higher end of this age bracket (e.g., 26 years of age). As a result, we opted to place all respondents between 18 and 36 into the bracket, 36 years of age and younger.

The second step of the data analysis was descriptive in nature, focusing on response patterns (e.g., percentage of "yes," "no," or "unsure" responses) associated with the primary content dimensions of the survey. Note that five items contained multiple response options for which 0, 1, or more response categories could be checked. To simplify the analysis of findings from these survey items, only single-response options (e.g., % of psychologists using landline or mobile phone) rather than combined-response options (e.g., % of psychologists using a combination of landline and mobile phone) were calculated.

The third step of data analysis examined associations between participants' background factors and their responses to individual survey items. All chi-square and Fisher's exact tests, except two Likert-formatted items, examined the association of dichotomous or trichotomous endorsements (e.g., yes/no or yes/no/unsure) and the four background factors. Only statistically significant tests of association ($ps \leq .05$) were reported.

Finally, the results of both descriptive analysis of survey item responses and tests of association were organized into four content areas to simplify interpretation. The four content areas were (a) preference and use of telecommunication modalities, (b) age group of clients, (c) professional, ethical, and legal/regulatory issues, and (d) telehealth training and practice.

Results

Sample Characteristics

As shown in Table 1, the largest proportion (63%) of respondents was approximately evenly divided between the 47 to 56 age group ($n = 50$) and the 57 to 64 age group ($n = 54$). Nearly 22% of the sample was between the ages of 36 or younger ($n = 14$) and between the ages of 37 and 46 ($n = 22$). The remaining 15% ($n = 24$) of the study sample was Age 65 or older. There were also substantially more female (59%) than male participants (41%).

Table 1
Background Characteristics of Doctoral-Level Psychologists (N = 164)

Respondent characteristics	*n* (%)
Age (years)	
36 and younger	14 (8.54)
37–46	22 (13.41)
47–56	50 (30.49)
57–64	54 (32.93)
65 and older	24 (14.93)
Gender	
Female	96 (58.54)
Male	68 (41.46)
Primary region of work	
Northeast	25 (15.24)
Midwest	59 (35.98)
South	56 (34.15)
West	24 (14.63)
Primary work setting	
Private practice	127 (77.44)
Public practice	37 (22.56)
Years worked since obtaining highest academic degree	
0–10	31 (19.51)
11–20	42 (25.61)
21–30	60 (36.59)
31 or more	30 (18.29)

The most common work setting of psychologists was independent practice ($n = 127$), including independent (one practitioner), small-group (two to 10 practitioners), and large-group (10 or more practitioners) practice arrangements. A minority of respondents ($n = 37$) worked in a public or institutional setting, including behavioral health clinics, hospitals, military or Department of Veterans Affairs, and universities. Regarding region of work, 70% were divided between Midwestern ($n = 59$) and Southern ($n = 56$) states. The remaining 30% of psychologists were approximately evenly split between Northeastern ($n = 25$) and Western ($n = 24$) states. Last, the largest cohort of participants ($n = 60$) completed their highest academic degree 21 to 30 years prior to completion of the telehealth survey. The remainder of respondents had attained their highest academic credential 0 to 10 years ($n = 32$), 11 to 20 years ($n = 42$), and 31 or more years ($n = 30$) prior to completing the survey.

Descriptive Analysis of Survey Item Responses

Preference and use of telecommunication modalities. As shown in Table 2, over half of psychologists (57%) reported 0 hr per week using telecommunication technologies to deliver counseling services. However, a sizable minority (37%) reported deploying online modalities to deliver counseling services an average of 1 to 5 hr weekly, and 5.5% delivered online counseling an average of 6 or more hours weekly. This pattern was replicated in the survey item querying the percentage of psychologists' practice currently delivered online. Fifty-two percent of respondents indicated that none of their current practice was delivered online, 37.5% reported 1% to 9% of their services performed online, and 10% reported 10% to 100% of their practice was delivered using

Table 2
Number and Percentage of Responses on Questions Related to Preferences and Use of Telecommunication Modalities and Age of Clients Served (N = 164)

Survey question	Response options, *n* (%)				
	Very	Moderately	Slightly	Not at all	Missing
How comfortable are you, or would you be, delivering online counseling services?	37 (22.98)	58 (36.02)	37 (22.98)	29 (18.01)	3 (1.83)
How confident would you be providing online counseling services via telehealth technology without an initial in-person assessment?	13 (8.08)	26 (16.05)	30 (18.52)	93 (57.41)	2 (1.22)
	0 (none)	1–5	6 and above	Missing	
How many hours per week on average do you deliver online counseling?	93 (57.06)	61 (37.42)	9 (5.52)	1 (.6)	
	0 (none)	1%–9%	10%–100%	Missing	
What percentage of your practice is currently delivered online?	85 (52.47)	61 (37.65)	16 (9.88)	2 (1.22)	
What percentage of your practice would you like to deliver online?	35 (21.60)	44 (27.16)	83 (51.23)	2 (1.22)	

	Yes	No
Which telecommunications tools have you used in the last year to deliver counseling services at a distance to clients?[a]		
Landline telephone	104 (63.41)	60 (36.59)
Mobile phone	84 (51.22)	80 (48.78)
Chat room or instant message	5 (3.05)	159 (96.95)
E-mail	62 (37.80)	102 (62.20)
Video conferencing	42 (25.61)	122 (74.39)
Online telephone	10 (6.10)	154 (93.90)
Online telephone conferencing service	10 (6.10)	154 (93.90)
Smart phone application ("App")	11 (6.71)	153 (93.29)
Other (e.g., pager)	5 (3.05)	159 (96.95)
None	35 (21.34)	129 (78.66)
Which of the following communication technologies do you consider useful for online counseling?[a]		
Telephone (landline or mobile)	122 (74.39)	42 (25.61)
E-mail	63 (38.41)	101 (61.59)
Video conferencing	119 (72.56)	45 (27.44)
Texting	27 (16.46)	137 (83.54)
None	10 (6.10)	154 (93.90)
What age groups do you currently serve at a distance?[a]		
Adults	91 (55.49)	73 (44.51)
Elderly	15 (9.15)	149 (90.85)
Children	5 (3.05)	159 (96.95)
Adolescents	20 (12.20)	144 (87.80)

[a] Survey question for which respondents were prompted to choose "all that apply."

telecommunication technologies. In contrast, 51% of respondents indicated in the future they would like to deliver online 10% to 100% of their services.

In assessing the extent of technology use, psychologists were asked to endorse the specific "telecommunications used in the last year to deliver counseling services at a distance to clients." Note that no constraints were placed on the minimum number of times they used specific telecommunication modalities. More than half of psychologists reported using landline (63%) or mobile phones (51%) to deliver counseling services during the previous year. A lower percentage of psychologists reported using e-mail (38%) or videoconferencing (26%) for TBH services. Substantially smaller utilization rates were reported for smart phone applications (7%), online telephone (6%), online telephone conferencing services (6%), chat room or instant message (3%), or "other" (e.g., pager; 3%). Last, over one fifth of respondents (21%) reported not using any of the aforementioned technologies over the year prior to completing the survey.

In examining psychologists' perceptions of the usefulness of various telecommunication modalities, respondents' endorsements mirrored their current usage of telecommunication tools (see Table 2), with only one exception. Although a small proportion of psychologists (26%) reported using videoconferencing technology over the previous year, nearly three fourths (73%) of respondents considered videoconferencing useful as a vehicle for service delivery.

Shifting to concerns about the use of TBH, 75% of psychologists were slightly or not at all confident they could provide "online counseling" services without an initial in-person assessment. In a similar vein, they also were evenly divided (32.7% reported "yes," 32.7% reported "no," 34.6% reported "unsure") regarding their beliefs about the "average mental health professional's" capacity to screen effectively at-risk clients using TBH technologies. Although most psychologists (59%) reported they were moderately or very comfortable using telecommunication technologies, a sizable minority indicated they were only slightly (23%) and not at all (18%) comfortable providing TBH.

Age groups of clients served. Respondents specified the age groups (i.e., children, adolescents, adults and elderly) they currently served and how they provided counseling services to them via TBH. Similar to the questions about use of various telecommunication modalities, no limitations were placed on the minimum number of times or proportion of time psychologists used telecommunication technologies in providing online services to each of the four age groups. Over half (55%) of psychologists reported delivering TBH services to adults. In contrast, substantially smaller percentages of psychologists provided such services to children (3%), adolescents (12%) and elderly (9%; see Table 2).

Professional, ethical, and legal regulatory issues. Although most psychologists (80%) considered it ethical for licensed mental health professionals to deliver TBH, only 58% were aware of state and federal laws or regulations governing such activities. Buttressing this finding, over one fourth of respondents (27%) were unsure whether it was legal to provide TBH to clients outside the state in which they were currently licensed. Furthermore, over one third (35%) of respondents indicated it was legal to provide TBH across state lines by calling themselves a "coach" instead of a psychologist. An additional 40% were unsure whether this action was legal. In a similar vein, 72.6% of psychologists reported concerns about licensure issues (see Table 3).

Security, confidentiality and Health Insurance Portability and Accountability Act (HIPAA, 1996) compliance were the primary concerns related to the use of telecommunication modalities (79%). A high percentage of psychologists (74%) were unsure whether their malpractice carrier covered TBH services. Overall, 98% of respondents reported having at least one area of concern related to TBH practice.

Telehealth training and practice. Ninety-six percent of respondents indicated that "mental health practitioners should undergo training about the clinical, legal, and/or ethical issues related to telehealth." A very high percentage of respondents (90%) also reported such practitioners should receive training on technical issues surrounding delivery of telehealth services.

Turning to concerns about TBH training and practice, 52% of psychologists reported inadequate skills in managing emergency situations when using online counseling modalities. A substantial minority (39%) also endorsed insufficient TBH training or education, and 24% reported a lack of available telehealth education or training programs.

Last, respondents provided information about their knowledge of current TBH guidelines or standards published by professional associations. Over half of psychologists (55%) indicated they were aware of relevant professional association guidelines. The most frequently identified guidelines were the American Telemedicine Association (15%), followed by American Counseling Association (10%) and American Psychiatric Association (9%; see Table 3).

Associations Between Background Characteristics and Survey Responses

Preferences and use of telecommunication technologies. A statistically significant association was found between psychologists' age and use of landline telephone, $\chi^2(4, N = 164) = 17.01$, $p = .002$. As psychologists' years of age increased, the overall pattern of use of landline telephone concomitantly increased. The proportion of respondents 36 years of age or younger using landline telephone communication to deliver TBH was substantially lower than their counterparts 37 to 46 years old, who, in turn, used landline telephone to provide services in lower proportion than psychologists 47 years of age or above (see Table 4).

A different pattern of associations emerged between psychologists' age and use of e-mail, $\chi^2(4, N = 164) = 11.03$, $p = .03$, online telephone (Fisher's exact test, $p = .05$), online telephone conferencing (Fisher's exact test, $p = .05$), and videoconferencing, $\chi^2(4, N = 164) = 12.34$, $p = .03$. A substantially higher proportion of respondents ages 57 to 64 used these four telecommunication modalities in delivering services than psychologists 56 years of age or younger and those 65 years or older. In contrast, no statistically significant relationships were found between psychologists' age and the use of mobile phone, chat room or instant message, and smart phone applications ("apps") in delivering counseling services.

Last, the relationship between age and delivery of TBH services was examined collapsing across all telecommunication modalities. The proportion of psychologists delivering services differed significantly across age groups, $\chi^2(4, N = 163) = 12.26$, $p = .02$. A substantially greater proportion of psychologists 37 years of age and older provided TBH 1 or more hours per week than that of 36-year-olds and younger.

In regard to gender, only use of online telephone conferencing systems in providing services differentiated significantly between male and female psychologists (Fisher's exact test, $p = .02$). A higher proportion of male practitioners reported using online teleconference system technologies than did female providers.

Turning to work setting, significant associations were found between type of work setting and telecommunication mode. A significantly higher proportion of psychologists in independent practice reported using landline telephones, $\chi^2(1, N = 164) = 4.49$, $p = .03$, e-mail, $\chi^2(1, \mathrm{N} = 164) = 7.25$, $p = .007$, and mobile phones, $\chi^2(1, N = 164) = 11.19$, $p = .0008$, in providing services than did psychologists working in public settings (see Table 4).

In regard to primary region of work, only one statistically significant association was found between region of work and use of telecommunication technologies to deliver services (Fisher's exact test, $p = .04$). Collapsing across all telecommunication modalities, a substantially higher proportion of psychologists in the Northeast and West provided TBH than that of psychologists in the Midwest and South. Finally, no significant relationships were found between years of practice since obtaining final academic credentials and use of distance modalities.

Age groups of clients served. Tests of association were performed between the age groups of clients (i.e., children, adolescents, adults and elderly) provided TBH and psychologists' age. A statistically significant association was found between adults served via telecommunication technologies and psychologists' years of age, $\chi^2(4, N = 164) = 15.65$, $p = .004$. A substantially higher proportion of psychologists between 37 and 64 years of age provided TBH to adults than psychologists 36 years of age and younger and those 65 years of age and older. In contrast, no significant associations were found between the other two age groups (i.e., children and elderly) and psychologists' age in the use of TBH.

In regard to work setting, a significantly higher proportion of psychologists in independent practice reported using technology

Table 3
Number and Percentage of Responses on Survey Questions Related Professional, Ethical, and Legal Regulatory Issues and TBH Training and Practice (N = 164)

Survey question	Response options, *n* (%)				
	Yes	No	Unsure	N/A	Missing
Does your malpractice carrier cover you for delivering online counseling?	22 (13.75)	10 (6.25)	119 (74.38)	9 (5.63)	4 (2.44)
Do you think it is ethical for LICENSED mental health professionals to deliver services online or via other telehealth technologies?	130 (79.75)	6 (3.68)	27 (16.56)	—	1 (.6)
Do you believe it is legal to practice over state lines using telecommunications technology if you call yourself a "coach"?	57 (35.40)	39 (24.22)	65 (40.37)	—	3 (1.83)
Do you think it is legal for licensed professionals to provide services online to someone who is located in a state in which you are NOT licensed?	16 (9.94)	102 (63.35)	43 (26.71)	—	3 (1.83)
Do you think mental health practitioners should undergo any training about the technical issues of telehealth?	148 (90.24)	5 (3.05)	11 (6.71)	—	—
Do you think mental health practitioners should undergo any training about clinical, legal, and/or ethical issues in telehealth?	157 (96.32)	3 (1.84)	3 (1.84)	—	1 (.61)
Do you think the average mental health professional can effectively screen for "at risk" clients (dangerous to self or others) using telehealth technology?	53 (32.72)	53 (32.72)	56 (34.57)	—	2 (1.22)
Are you aware of any state or federal law/s or regulation/s that govern the delivery of counseling services provided online or via other telehealth technologies?	92 (57.50)	68 (42.50)	—	—	4 (2.44)
Are you aware of any guidelines or standards for online counseling and therapy published by these professional associations?[a]					
American Counseling Association	16 (9.76)	148 (90.2)			
American Medical Association	10 (6.10)	154 (93.9)			
American Psychiatric Association	15 (9.15)	149 (90.85)			
American Telemedicine Association	25 (15.24)	139 (84.76)			
Employee Assistance Professional Association	1 (.61)	163 (99.39)			
National Association of Alcoholism and Drug Abuse Counselors	1 (.61)	163 (99.39)			
Not aware of any	91 (55.49)	73 (44.51)			
Other	32 (19.51)	132 (80.49)			
What are your concerns with online counseling?[a]					
Security/confidentiality or HIPAA compliance	130 (79.27)	34 (20.73)			
Equipment costs	35 (21.34)	129 (78.66)			
Licensure issues	119 (72.56)	45 (27.44)			
Lack of personal training or education in this area	64 (39.02)	100 (60.98)			
Lack of available education or training programs in this area	40 (24.39)	124 (75.61)			
Lack of direction from my professional association	40 (24.39)	124 (75.61)			
Lack of supporting research	44 (26.83)	120 (73.17)			
Inability to handle emergency situations	85 (51.83)	79 (48.17)			
Tried online therapy practice and decided it was not for me	4 (2.44)	160 (97.56)			
Don't know how to get started with online practice	17 (10.37)	147 (89.63)			
Don't understand issues involved with online practice	16 (9.76)	148 (90.24)			
Don't have any concerns	3 (1.83)	161 (98.17)			
Don't know how to get started with online practice	17 (10.37)	147 (89.63)			

Note. TBH = telebehavioral health; N/A = not applicable; HIPAA = Health Insurance Portability and Accountability Act.
[a] Survey question for which respondents were prompted to choose "all that apply."

Table 4
Significant Chi-Square Results for Survey Questions Related to Preferences and Use of Telecommunication Modalities and Age Group of Clients Served by Respondent Characteristics (N = 164)

Survey question[a]	Background characteristic	Factor levels	% Affirmative	*p* value
How many hours per week (1 hr or above vs. 0 hr) on average do you deliver online counseling?[a]	Age (years)	36 and younger	14.29	.0155
		37–46	66.67	
		47–56	34.00	
		57–64	50.00	
		65 and older	41.67	
What percentage (1% or higher vs. 0%) of your practice is currently delivered online?	Age (years)	36 and younger	35.71	.0049
		37–46	71.43	
		47–56	32.00	
		57–64	60.38	
		65 and older	37.50	
	Primary region of work	Northeast	66.67	.0175
		Midwest	37.93	
		South	41.07	
		West	66.66	
Which telecommunication tools have you used (yes vs. no) in the last year to deliver counseling services at a distance to clients?				
Landline telephone	Age (years)	36 and younger	21.43	.0019
		37–46	54.55	
		47–56	60.00	
		57–64	77.78	
		65 and older	70.83	
	Primary work setting	Private	67.72	.0341
		Public	48.65	
Mobile phone	Primary work setting	Private	52.27	.0008
		Public	27.03	
E-mail	Age (years)	36 and younger	28.57	.0262
		37–46	27.27	
		47–56	28.00	
		57–64	55.56	
		65 and older	33.33	
	Primary work setting	Private	43.31	.0071
		Public	18.92	
Which telecommunication tools have you used (yes vs. no) in the last year to deliver counseling services at a distance to clients?				
Video conferencing	Age (years)	36 and younger	7.14	.0150
		37–46	40.91	
		47–56	16.00	
		57–64	37.04	
		65 and older	16.67	
Telephone	Age (years)	36 and younger	.00	.0480[b]
		37–46	4.55	
		47–56	2.00	
		57–64	14.81	
		65 and older	.00	

Table 4 (*continued*)

Survey question[a]	Background characteristic	Factor levels	% Affirmative	*p* value
Online telephone conferencing service	Age (years)	36 and younger	.00	.0453[b]
		37–46	4.55	
		47–56	.00	
		57–64	12.96	
		65 and older	8.33	
	Gender	Male	11.76	.0171[b]
		Female	2.08	
Which of the following technologies do you consider useful (yes vs. no) for online counseling?				
Videoconferencing	Primary region of work	Northeast	72.00	.0223
		Midwest	59.32	
		South	80.36	
		West	87.50	
What age groups do you currently serve (yes vs. no) using technology?				
Adults	Age (years)	36 and younger	7.14	.0128
		37–46	45.45	
		47–56	12.00	
		57–64	29.63	
		65 and older	25.00	
	Region of work	Northeast	68.00	.0371
		Midwest	44.07	
		South	53.57	
		West	75.00	
	Primary work setting	Private	62.20	.0013
		Public	32.43	
Adolescents	Primary work setting	Private	14.96	.0477

[a] For online counseling delivery items, hours and percentage of use were collapsed into two categories (1 hr or above vs. 0 hr, and 1% or higher vs. 0%). For telebehavioral health tools, groups served and usefulness items were coded yes–no. [b] Fisher's exact tests were performed instead of chi squares.

when serving adolescents, $\chi^2(1, N = 164) = 4.02$, $p = .04$, and adults, $\chi^2(1, N = 164) = 10.28$, $p = .001$, than that of psychologists in public practice (see Table 4). No significant associations were found between the other two age groups (i.e., children and elderly) and clinician's work setting in performing TBH.

Next, only one significant association was found between region of practice and the age groups of clients served, $\chi^2(4, N = 164) = 8.48$, $p = .04$. Substantially higher proportions of psychologists across the Northeast, South, and West provided TBH to adults than those in the Midwest. No significant associations were found between the other three age groups (i.e., children, adolescents and elderly) and region of practice in conducting TBH. Last, no significant relationships were found between psychologists' gender and years worked since obtaining highest academic degree and the age groups of clients served via TBH.

Professional, ethical, and legal regulatory issues. As shown in Table 5, tests of association were performed between TBH ethical and legal concerns and psychologists' characteristics. A significant association was found between ethical concerns about TBH delivery and psychologists' age (Fisher's exact test, $p = .02$). A substantially higher proportion of psychologists 37 years of age and older indicated the delivery of TBH by licensed providers was ethical compared with that of psychologists 36 years of age and younger. This pattern was replicated in comparing the responses of psychologists who endorsed "unsure" about the ethics of TBH practice. A substantially higher proportion of psychologists 36 years of age or younger reported uncertainty whether licensed professionals should engage in TBH practice than that of psychologists 37 years of age or older.

A significant correlation was obtained between awareness of TBH laws/regulations and respondents' years of age, $\chi^2(4, N = 160) = 11.17$, $p = .02$. A substantially higher proportion of psychologists between 37 to 64 years of age reported being "aware of telehealth laws and regulations" at the state and federal level than both psychologists Age 36 or younger and 65 or above. A statistically significant relationship also was found between TBH licensure concerns and age of respondents, $\chi^2(4, N = 164) = 12.32$, $p = .02$. In contrast, a substantially higher proportion of psychologists Ages 37 and older endorsed licensure concerns in delivering TBH services than that of psychologists 36 years of age and younger (see Table 5).

Turning to work setting, a significant relationship was found between malpractice insurance coverage and work setting (Fisher's exact text, $p = .03$). A similar proportion of independent practice and public sector psychologists endorsed "yes" on having malpractice insurance coverage. A different pattern emerged for psychologists who were "unsure" about their malpractice coverage in providing TBH. The proportion of psychologists in independent practice endorsing "unsure" was substantially higher than that of psychologists in public settings. Finally, no statistically significant relationships were found among survey items assessing professional, ethical, and legal regulatory concerns about TBH practice and psychologists' gender, primary region of work, and years worked since obtaining highest academic degree.

TBH training and practice. A significant association was obtained between psychologists' concerns about lack of direction from their professional association in conducting TBH and psychologists' gender, $\chi^2(1, N = 164) = 7.69$, $p = .006$. A signifi-

Table 5
Chi-Square Results for Survey Questions Related to Professional, Ethical, and Legal Regulatory Issues and Telehealth Training and Practice by Respondent Characteristics (N = 164)

Survey question	Respondent characteristic	Factor levels	% Affirmative	*p* value
Does your malpractice carrier cover you for delivering online counseling (yes vs. no vs. unsure)?[a]	Primary work setting	Private	13.01	.0304[b]
		Public	16.22	
Do you think it is ethical for LICENSED mental health professionals to deliver services online or via other telehealth technologies (yes vs. no vs. unsure)?	Age (years)	36 and younger	57.14	.0239[b]
		37–46	90.48	
		47–56	76.00	
		57–64	87.04	
		65 and older	75.00	
Are you aware of any state or federal law/s or regulation/s that govern the delivery of counseling services provided online or via other telehealth technologies (yes vs. no)?	Age (years)	36 and younger	41.67	.0247
		37–46	66.67	
		47–56	68.00	
		57–64	59.26	
		65 and older	30.43	
What are your concerns with online counseling (yes vs. no)?				
Licensure issues	Age (years)	36 and younger	35.71	.0151
		37–46	81.82	
		47–56	76.00	
		57–64	70.37	
		65 and older	83.33	
Lack of available education or training programs in this area	Gender	Male	47.92	.0055
		Female	26.47	
Lack of direction from my professional association	Years worked since obtaining highest academic degree	0–10 years	43.75	.0087
		11–20 years	9.52	
		21–30 years	23.33	
		31 or more years	26.67	

[a] For the malpractice and ethics items, the response categories were "yes," "no," or "unsure." For the concerns about online counseling, response categories were either "yes" or "no." [b] Fisher's exact tests were performed instead of chi squares.

cantly higher proportion of female psychologists reported concern about lack of direction from their professional associations for using TBH than that of male psychologists.

Of those who reported concern about lack of education or training in TBH, a significantly higher proportion of psychologists practicing between 0 and 10 years reported concern about lack of education or training in TBH than those with 11 or more years of practice since obtaining their highest academic degree, $\chi^2(3, N = 164) = 11.66, p = .009$ (see Table 5). No significant relationships were found between respondents' concerns about TBH training and the remaining background factors (i.e., psychologists' age, gender, primary region of work, and work settings).

Discussion

The key findings from the descriptive statistics of survey items and tests of association are discussed first, organized according to the four primary item content domains (i.e., preference and use of telecommunication modalities; age group of clients served; professional, ethical, and legal regulatory issues; and telehealth training and practice). Next, the methodological limitations of the current study are described, followed by future directions for research on psychologists' use of TBH technologies, their ethical and legal concerns, and needs for telehealth training and practice.

Preference and Use of Telecommunication Modalities

The majority of survey respondents (57%) did not use telecommunication technologies to deliver psychological services. Thirty-seven percent of respondents provided TBH services 1 to 5 hr per week and the remaining engaged in TBH practice for 6 or more hours per week. In descending order, the technologies used by psychologists were landline telephone (63%), mobile telephone (51%), e-mail (38%), and videoconferencing (26%). Substantially lower endorsement rates were reported for other telecommunication modes, such as smart phone applications, online telephone, online telephone conferencing services, chat rooms, or instant messaging.

Although the respondents' overall use of telecommunication modalities was moderately low, over half (51%) indicated they would like to deliver 10% to 100% of their services online in the future. Buttressing the prospects of increased utilization of TBH technologies, 73% of psychologists considered videoconferencing useful as a tool for service delivery. Of particular note is the number of respondents using e-mail to deliver psychological services over the past year (38%). This estimate has increased sharply since the 2008 APA practice survey reported 9.8% of psychologists used e-mail for clinical purposes (Michalski, Mulvey, & Kohout, 2010).

Despite the growth in telecommunication use, significant discrepancies emerged between actual implementation of TBH services and psychologists' positive appraisals of their usefulness in clinical practice. This finding is consistent with previous studies outlining barriers to provider use of telehealth (Brooks, Turvey, & Augusterfer, 2013) and is particularly important in light of mounting pressures from federal agencies on behavioral health providers to adopt technology in value-based purchasing (Smith, Myers, Sederer, & Berezin, 2016) and pay-for-performance models (Stewart, Lareef, Hadley, & Mandell, 2017), both of which rely on telecommunication technologies to decrease costs and improve efficiencies.

Three possible explanations for these discrepancies may account for the limited uptake of TBH training by psychologists. First, the inflection point for telehealth adoption had not been reached at the time of completion of the TBH survey. Current leaders of health care reform have judged telehealth a viable option for curtailing the growth of health care costs. This expectation is reflected by the upward trend in adoption of telehealth by employers, hospitals, and health care plans, as well as the introduction of multiple, federal health care reforms with core telehealth components (Simon, 2017; Wicklund, 2017).

Second, insurers and state licensing boards in other health disciplines (e.g., nursing) have recently begun to require certification in telehealth. Such activity is putting pressure on clinicians who are untrained to document their expertise. In a related vein, the Association for State and Provincial Psychology Boards released PSYPACT in 2015. The goal of PSYPACT to facilitate the practice of telepsychology and temporary in-person psychology across jurisdictions (PSYPACT, 2017). APA has endorsed PSYPACT's proposal to coordinate state licensing boards with a model act for interjurisdictional practice and telepsychology, along with requirements for professional training. As PSYPACT garners endorsements from state psychology boards across the country, psychologists' priorities in obtaining TBH training are likely to increase.

Third, a lack of identified competencies may have left psychologists guessing about the specific skill sets and risk management procedures required for TBH practice. Under such conditions, it is not surprising survey respondents may have been reluctant to pursue TBH training opportunities. Note, however, that a recent development may help in reducing this ambiguity. Several articles specifying the competencies for TBH practice have been published over the past few years (e.g., Hilty et al., 2015, 2017; Johnson, 2014; Maheu et al., 2017).

Age Groups of Clients Served

The majority (55%) of respondents indicated they had provided TBH services to adult clients. In contrast, substantially smaller percentages of psychologists provided TBH to children (3%), adolescents (12%), and elderly (9%). This discrepant pattern of results may be attributable to two factors: (a) discretionary income to obtain TBH services, and (b) convenience in accessing such services. First, adults in the United States between 21 and 64 report higher annual incomes than other age groups, thus providing discretionary funds to obtain TBH from psychologists. This age cohort also may be more receptive to such services because of increased exposure and normalization of TBH in the work place, particularly the incorporation of telehealth-based employee assistance programs. Second, adults are likely to prefer the convenience of TBH services, particularly elimination of travel time to health care settings and greater control of the session environment (e.g., in-home service delivery; Luxton, Nelson, & Maheu, 2016; Maheu, Pulier, Wilhelm, McMenamin, & Brown-Connolly, 2004).

Although adults represented the highest user group of TBH in the current survey, the utilization pattern of TBH services across age groups is likely to change over the next few decades. With the aging of adults born from 1946 through 1960, the percentage of

technology-savvy older adults receiving online psychological services is expected to increase substantially. The older generation comprises one of the fastest growing sectors of the U.S. population purchasing health-care-related technology and services (Brenner, 2013; Desilver, 2013).

Professional, Ethical, and Legal Regulatory Issues

In examining psychologists' responses to survey items related to TBH professional, ethical, and legal/regulatory concerns, three issues merit special attention. First, over half (52%) of respondents reported inadequate skills in managing crisis situations in the context of online practice. Handling emergencies, such as suicide risk and child abuse, is one of the core competencies of practicing psychologists, requiring specialized knowledge and skills for effective TBH. Psychologists new to online practice may be unaware of the necessity for obtaining background information about how and when to develop a proper informed consent procedure. They also may be uninformed about the need to establish a safety net of resources and emergency contact information in the communities of clients they serve. This lack of clarity about legal and regulatory requirements for such issues is problematic in light of the growing number of psychologists who currently use or plan to incorporate videoconferencing in their practices.

A second major concern focused on ethical issues related to security, confidentiality, and HIPAA compliance in the use of telecommunication technologies. Seventy-nine percent of respondents endorsed items suggesting concerns about security, confidentiality, and HIPAA. Although these ethical issues were noted across all age groups, a substantially greater proportion of psychologists 36 years of age and younger felt unsure about TBH ethical requirements compared with their counterparts 37 years of age and older. These findings underscore the need for doctoral and postdoctoral programs to expand their ethics curriculum, incorporating TBH within the framework of essential readings and illustrative vignettes.

A third key concern centered on ambiguities and misinformation about licensure and regulatory issues. Forty-two percent of psychologists reported that they were unaware of any state or federal laws or regulations governing telepractice over state lines. Twenty-seven percent of psychologists indicated they were unsure whether it was legal to provide TBH services to clients *outside* the state(s) in which they were licensed. Furthermore, 35% of respondents erroneously believed it was legal to provide TBH across state lines by identifying themselves as a coach instead of a licensed psychologist. Although it is unclear to what extent psychologists selectively identify as coaches or psychologists to conduct TBH across state lines, this practice is both unethical and illegal. Further research is required to determine the prevalence of dual identification (i.e., licensed psychologist and health coach) and to what extent this dual identification influences TBH practices across state lines.

In addition to regulations governing interstate practice, psychologists reported uncertainty about malpractice insurance coverage. A large majority of respondents (74%) were unsure whether their current malpractice carrier covered delivery of TBH. This finding suggests that a substantial proportion of psychologists currently practicing TBH may be unaware of potential liability risks and the specific action steps to remedy this information gap. Professional associations (e.g., APA) should consider providing information about TBH liability coverage by major insurance companies to protect their members from unanticipated financial losses.

TBH Training and Practice

Two major themes emerged in examining the pattern of survey findings on TBH training and practice: (a) inadequate preparation of early career psychologists, and (b) uncertainties about uptake of continuing education among practitioners. A substantially higher proportion of early career psychologists (i.e., 0 to 10 years in practice) reported concern about lack of education or training in telehealth than that of psychologists falling within the middle to late career range (i.e., 11 or more years of practice). This finding underscores the importance of educating faculty members of psychology pre- and postdoctoral training programs about the need to prepare their students for TBH practice (Callan et al., 2017). Early career psychologists should be conversant with peer-reviewed research supporting the incorporation of TBH into standard clinical practice and receive hands-on training with telecommunication modalities (Luxton et al., 2016; Maheu et al., 2004). This is especially important in light of the federal government's commitment to increase access to and uptake of behavioral health services. TBH is a key mechanism for accomplishing this goal. Thus, it is incumbent on pre- and postdoctoral psychology training programs to equip students with the knowledge and skills they require to function effectively in our evolving health care system.

Turning to continuing education of practitioners, a contradiction emerged between the sizable minority of respondents (39%) endorsing insufficient personal training or education in TBH and the availability of APA-sponsored workshops at national conferences, federal agency resources, and expert online training courses. APA has offered continuing TBH education symposia and workshops at national conferences dating back to 1995. APA also has provided webinars and other training opportunities for psychologists. Furthermore, a plethora of training resources are available to practitioners, ranging from those produced by large federal entities (e.g., United States Health and Human Services, Substance Abuse and Mental Health Services Administration, and Telehealth Resource Centers) to national and state professional associations, as well as specialized private training organizations available online (e.g., Telebehavioral Health Institute). Nonetheless, the widespread availability of training resources has not translated into positive appraisals of adequate professional training and education in TBH.

Two possible explanations are offered to account for these inconsistencies. First, it is possible that psychologists are aware of training and education inadequacies in TBH but have placed a low priority on acquiring competencies in this domain of practice. As noted previously, they may not have perceived the marketing advantages of TBH because of both lower insurance reimbursement and private payer demand for such services.

Second, survey respondents may not have been members of APA or other national organizations, and as a result, they may have received little exposure to information about TBH training resources. As Sladek (2011) asserted, most licensed professionals no longer become members of national or state professional associations. This trend suggests the need for alternative methods in broadcasting continuing education opportunities, such as state regulatory boards (Hilty et al., 2017), web-based continuing edu-

cation outlets, graduate education, and professional training institutions (Callan et al., 2017; Luxton et al., 2016; Maheu et al., 2004).

Limitations and Future Directions for Research

The primary limitations of the present study were the disproportionate number of respondents working in independent practice settings, lack of information about race/ethnicity and community characteristics, small sample size of early career psychologists, and reliance on close-ended questions. First, 77% of survey respondents indicated their primary work setting was independent or group independent practice, whereas the remainder (23%) provided psychological services in public organizations (e.g., health or behavioral health clinic, hospital, military or veterans affairs facilities; see Table 1). This finding was inconsistent with the general employment pattern of psychologists providing clinical services across the United States. The 2015 APA Survey of Psychology Health Service Providers (Hamp, Stamm, Lin, & Christidis, 2016) reported the primary work setting of the majority of psychologists (55%) was located in the public domain (e.g., educational institutions and hospitals).

Note, however, that the largest *single* sector of primary work employment of psychologists consisted of private independent and group practice. Forty-five percent of U.S. psychologists provide direct service in independent practice settings (Hamp et al., 2016). Further supporting the external validity of the current investigation, no differences were found on gender between TBH (58.5% female) and APA (59.2% female) survey respondents. Nonetheless, caution should be exercised in generalizing the results of the present study, particularly the uses of and preferences for telecommunication technologies, to the overall cohort of practicing psychologists in the United States.

A second shortcoming of the current study was the failure to include survey items identifying psychologists' race/ethnicity and community of residence. The former was inadvertently omitted during the construction of the survey. This substantial error was discovered too late in the data collection process to be remediated. Psychologists' community of residence (e.g., urban, suburban, and rural) was also excluded to limit the time and effort required to complete the survey. It is possible the use of TBH may have been differentially associated with race/ethnicity and type of community in which respondents resided. Future research on the relationship between psychologists' characteristics and incorporation of TBH in clinical practice will include these variables.

Third, the number and percentage of the subsample of respondents 36 years of age and younger (i.e., early career psychologists) was small ($n = 14$; 8.5%). The recruitment strategy of the present study was to cast a broad net across state associations and practice organizations. The incorporation of sample stratification on the variable of age was considered impractical for the purposes of this initial TBH practice survey. However, the percentage of the current survey's early career subsample was similar to that of early career psychologists in the 2015 APA survey (i.e., 5.4%), thus lending credibility to the generalizability of the findings (see APA, 2016). This is particularly the case for tests of association between psychologists' age and their use of telecommunication technologies and concerns about TBH education and training.

Fourth, the survey instrument relied exclusively on a closed-ended, rating-scale format. This approach was used to increase the probability of obtaining a reasonable sample size and completion of a large proportion of the survey items. Although both these goals were obtained, ambiguities emerged in interpreting differences between psychologists' use of telecommunication technologies in clinic practice and their deployment of specific telecommunication modalities. For example, on Item 22 of the survey, 57% of psychologists reported an average of 0 hr per week using telecommunication technologies to deliver counseling services, whereas on Item 9, more than half of psychologists endorsed using landline (63%) or mobile phones (51%) to deliver counseling services during the previous year. It appears likely psychologists' average number of hours per week using telecommunication technologies in clinical practice was moderately low. However, specific technologies, such as landline or mobile phones, may have been incorporated in clinical practice to supplement in-person services. Thus, the framing and wording of technology use items may have led to different response patterns.

Future directions for research include replication of the study with a larger sample of respondents and modification of the survey methodology. First, a nationwide telephone survey is recommended to assess the reliability of the current findings and to test for changes in the psychologists' use of and preference for telecommunication technologies and client populations served online as well as professional practice and education and training concerns. Second, the survey methodology should be modified to permit the incorporation of open-ended questions. Such items will gather more fine-grained descriptive information on time spent in TBH practice, the range of technologies deployed and their level of usage, as well as psychologists' ethical, regulatory, and legal concerns in the use of technology and needs for education and training. Third, future research is needed to enhance knowledge about two important issues: (a) the relationship between practitioners' knowledge about TBH ethical, legal, and regulatory issues and the extent of telecommunication technology use, and (b) the best methods for ensuring psychologists obtain the competencies required for effective TBH practice.

Final Note

The findings of the current study underscore the need for educational institutions and their faculty members to provide training opportunities to integrate TBH at both the graduate and postgraduate levels. Early career psychologists and experienced practitioners need to be knowledgeable about the technological, logistical, ethical, and regulatory requirements of TBH. They also require hands-on training with telecommunication tools that match the needs and preferences of the populations they serve (Gifford, Niles, Rivkin, Koverola, & Polaha, 2012; Luxton et al., 2016; Maheu et al., 2004). Opportunities to bridge the gap between the behavioral health needs of the public and limited access to professional services are rapidly expanding, and TBH is a potential solution. Psychologists need to prepare themselves to accomplish this important goal.

References

American Psychological Association. (2016). 2015 APA survey of psychology health service providers. Retrieved from http://www.apa.org/workforce/publications/15-health-service-providers/report.pdf

Brenner, J. (2013). The first cell phone call: Excerpt from "Networked: The New Social Operating System." Pew Research Center. Retrieved from http://www.pewinternet.org/2013/04/03/the-first-cell-phone-call-excerpt-from-networked-the-new-social-operating-system/

Brooks, E., Turvey, C., & Augusterfer, E. F. (2013). Provider barriers to telemental health: Obstacles overcome, obstacles remaining. *Telemedicine and e-Health, 19,* 433–437. http://dx.doi.org/10.1089/tmj.2013.0068

Callan, J. E., Maheu, M. M., & Bucky, S. F. (2017). Crisis in the behavioral health classroom: Enhancing knowledge, skills, and attitudes in telehealth training. In M. Maheu, K. Drude, & S. Wright (Eds.), *Career paths in telemental health* (pp. 63–80). New York, NY: Springer. http://dx.doi.org/10.1007/978-3-319-23736-7_5

Centore, A., & Milacci, F. (2008). A study of mental health counselors' use of and perspectives on distance counseling. *Journal of Mental Health Counseling, 30,* 267–282. http://dx.doi.org/10.17744/mehc.30.3.q871r684n863u75r

Cooper, S. E., & Neal, C. (2015). Consultants' use of telepractice: Practitioner survey, issues, and resources. *Consulting Psychology Journal: Practice and Research, 67,* 85–99. http://dx.doi.org/10.1037/cpb0000015

Deen, S. R., Withers, A., & Hellerstein, D. J. (2013). Mental health practitioners' use and attitudes regarding the Internet and social media. *Journal of Psychiatric Practice, 19,* 454–463. http://dx.doi.org/10.1097/01.pra.0000438184.74359.88

Desilver, D. (2013). Texting while driving may be common, but it's illegal in most states. Pew Research Center. Retrieved from http://www.pewresearch.org/fact-tank/2013/11/15/texting-while-driving-may-be-common-but-its-illegal-in-most-states/

Duncan, A., Nelson, E., Maheu, M., Glueckauf, R., Drude, K., & Gustafson, D. (2013). *Technology training in psychology internships*. Poster presented at the Association of Behavioral and Cognitive Therapies, Nashville, TN.

Finn, J. (2002). MSW student perceptions of the efficacy and ethics of internet-based therapy. *Journal of Social Work Education, 38,* 403–419. http://dx.doi.org/10.1080/10437797.2002.10779107

Finn, J. (2006). An exploratory study of email use by direct service social workers. *Journal of Technology in Human Services, 24,* 1–20. http://dx.doi.org/10.1300/J017v24n04_01

Finn, J., & Barak, A. (2010). A descriptive study of e-counsellor attitudes, ethics, and practices. *Counselling & Psychotherapy Research, 10,* 268–277. http://dx.doi.org/10.1080/14733140903380847

Ford, T., Avey, J., Deruyter, J., Whipple, J. L., & Rivkin, I. (2012). Providers' voices on telebehavioral health: Survey of an outpatient counseling agency in Alaska. *Psychological Services, 9,* 316–317. http://dx.doi.org/10.1037/a0026154

Gifford, V., Niles, B., Rivkin, I., Koverola, C., & Polaha, J. (2012). Continuing education training focused on the development of behavioral telehealth competencies in behavioral healthcare providers. *Rural and Remote Health, 12,* 2108.

Glover, J. A., Williams, E., Hazlett, L. J., & Campbell, N. (2013). Connecting to the future: Telepsychiatry in postgraduate medical education. *Telemedicine and e-Health, 19,* 474–479. http://dx.doi.org/10.1089/tmj.2012.0182

Hamp, A., Stamm, K., Lin, L., & Christidis, P. (2016). 2015 APA survey of psychology health service providers. American Psychological Association Center for Workforce Studies. Retrieved from http://www.apa.org/workforce/publications/15-health-service-providers/report.pdf

Health Insurance Portability and Account Act of 1996, Pub. L. No 104–191, 110 Stat. 1936 (1996). Retrieved from https://www.gpo.gov/fdsys/pkg/PLAW-104publ191/pdf/PLAW-104publ191.pdf

Hertlein, K., Blumer, M., & Smith, J. (2014). Marriage and family therapists' use and comfort with online communication with clients. *Contemporary Family Therapy: An International Journal, 36,* 58–69. http://dx.doi.org/10.1007/s10591-013-9284-0

Hilty, D. M., Crawford, A., Teshima, J., Chan, S., Sunderji, N., Yellowlees, P. M., . . . Li, S. T. (2015). A framework for telepsychiatric training and e-health: Competency-based education, evaluation and implications. *International Review of Psychiatry, 27,* 569–592. http://dx.doi.org/10.3109/09540261.2015.1091292

Hilty, D. M., Maheu, M. M., Drude, K., Wall, K., Long, R., Hertlein, K., & Luoma, T. (2017). Telebehavioral health, telemental health, e-Therapy and e-Health competencies: The need for an interprofessional framework. *Journal for Technology in Behavioral Science, 2,* 171–189. http://dx.doi.org/10.1007/s41347-017-0036-0

Jameson, J. P., Farmer, M. S., Head, K. J., Fortney, J., & Teal, C. R. (2011). VA community mental health service providers' utilization of and attitudes toward telemental health care: The gatekeeper's perspective. *The Journal of Rural Health, 27,* 425–432. http://dx.doi.org/10.1111/j.1748-0361.2011.00364.x

Johnson, G. (2014). Toward uniform competency standards in telepsychology: A proposed framework for Canadian psychologists. *Canadian Psychology, 55,* 291–302. http://dx.doi.org/10.1037/a0038002

Luxton, D., Nelson, E., & Maheu, M. (2016). *A practitioner's guide to telemental health: How to conduct legal, ethical, and evidence-based telepractice*. Washington, DC: American Psychological Association. http://dx.doi.org/10.1037/14938-000

Maheu, M., & Gordon, B. L. (2000). Counseling and therapy on the Internet. *Professional Psychology: Research and Practice, 31,* 484–489. http://dx.doi.org/10.1037/0735-7028.31.5.484

Maheu, M. M., Drude, K., Hertlein, K., Lipshutz, R., Wall, K., Long, R., & Hilty, D. M. (2017). An interprofessional framework for telebehavioral health competencies. *Journal for Technology in Behavioral Science, 2,* 190–210. http://dx.doi.org/10.1007/s41347-017-0038-y

Maheu, M. M., Pulier, M. L., Wilhelm, F. H., McMenamin, J. P., & Brown-Connolly, N. E. (2004). *The mental health professional and the new technologies: A handbook for practice today*. Mahwah, NJ: Erlbaum.

McMinn, M. R., Bearse, J., Heyne, L. K., Smithberger, A., & Erb, A. L. (2011). Technology and independent practice: Survey findings and implications. *Professional Psychology: Research and Practice, 42,* 176–184. http://dx.doi.org/10.1037/a0022719

McMinn, M. R., Buchanan, T., Ellens, B. M., & Ryan, M. K. (1999). Technology, professional practice, and ethics: Survey findings and implications. *Professional Psychology: Research and Practice, 30,* 165–172. http://dx.doi.org/10.1037/0735-7028.30.2.165

Menon, G. M., & Rubin, M. (2011). A survey of online practitioners: Implications for education and practice. *Journal of Technology in Human Services, 29,* 133–141. http://dx.doi.org/10.1080/15228835.2011.595262

Michalski, D., Mulvey, T., & Kohout, J. (2010). 2008 APA Survey of psychology health service providers. APA Center for Workforce Studies. Retrieved from http://www.apa.org/workforce/publications/08-hsp/report.pdf

Mora, L., Nevid, J., & Chaplin, W. (2008). Psychologist treatment recommendations for Internet-based therapeutic interventions. *Computers in Human Behavior, 24,* 3052–3062. http://dx.doi.org/10.1016/j.chb.2008.05.011

Perle, J. G., Langsam, L. C., Randel, A., Lutchman, S., Levine, A. B., Odland, A. P., . . . Marker, C. D. (2013). Attitudes toward psychological telehealth: Current and future clinical psychologists' opinions of internet-based interventions. *Journal of Clinical Psychology, 69,* 100–113. http://dx.doi.org/10.1002/jclp.21912

PSYPACT. (2017). Psychology Interjurisdictional Compact (PSYPACT). Retrieved from http://www.asppb.net/index8cc9.html?page=PSYPACT

SAS. (2017). SAS (Version 9.4). Retrieved from https://www.sas.com/en_us/software/stat.html

Simms, D. C., Gibson, K., & O'Donnell, S. (2011). To use or not to use: Clinicians' perceptions of telemental health. *Canadian Psychology, 52,* 41–51. http://dx.doi.org/10.1037/a0022275

Simon, J. (2017). Large employers revamping health care cost reduction strategies. Retrieved from https://www.plansponsor.com/news/benefits/

Sladek, S. L. (2011). *The end of membership as we know it: Building the fortune-flipping, must-have association of the next century*. Washington, DC: ASAE Association Management Press.

Smith, T., Myers, R., Sederer, L., & Berezin, J. (2016). How value-based payment arrangements should measure behavioral health. Health Affairs Blog. Retrieved from http://healthaffairs.org/blog/2016/11/29/how-value-based-payment-arrangements-shouldmeasure-behavioral-health/

Stewart, R. E., Lareef, I., Hadley, T. R., & Mandell, D. S. (2017). Can we pay for performance in behavioral health care? *Psychiatric Services, 68,* 109–111. http://dx.doi.org/10.1176/appi.ps.201600475

SurveyMonkey. (2017). Retrieved from https://www.surveymonkey.com

U.S. Census Bureau. (2015). Geographic terms and concepts – Census divisions and Census regions. Retrieved from https://www.census.gov/geo/reference/gtc/gtc_census_divreg.html

Wangberg, S. C., Gammon, D., & Spitznogle, K. (2007). In the eyes of the beholder: Exploring psychologists' attitudes towards and use of e-therapy in Norway. *CyberPsychology & Behavior, 10,* 418–423. http://dx.doi.org/10.1089/cpb.2006.9937

Wells, M., Mitchell, K. J., Finkelhor, D., & Becker-Blease, K. A. (2007). Online mental health treatment: Concerns and considerations. *CyberPsychology & Behavior, 10,* 453–459. http://dx.doi.org/10.1089/cpb.2006.9933

Wicklund, E. (2017). Congress is coming at CMS from all angles with telehealth bills. Retrieved from https://mhealthintelligence.com/news/congress-is-coming-at-cms-from-all-angles-with-telehealth-bills

Received September 10, 2017
Revision received March 3, 2018
Accepted March 8, 2018 ■