SPECIAL SERIES
Technology and Mental Health

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Introduction to the Special Series: Applying New Technologies to Extend the Scope and Accessibility of Mental Health Care

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Rapidly developing and affordable information and communication technologies, broadening Internet availability, and increasingly sophisticated capacities for live home-based and mobile broadcasting have transformed how we communicate, work, and learn. The growing potential for technological innovations to transform the scope of psychological interventions and extend the accessibility of evidence-based mental health care for traditionally underserved individuals holds enormous promise. New technologies also offer exciting opportunities to broaden the reach of treatment dissemination efforts to previously unimaginable capacities. As the incorporation of new technologies into clinical practice and training efforts becomes increasingly routine, a new set of ethical, legal, and risk management issues must be carefully considered and as a field we must be cautious against technological innovations and opportunities advancing at a pace more rapid than the development of appropriate consensus guidelines and relevant regulatory standards. This special series (a) addresses key matters of consideration regarding the appropriate, safe, and secure application of technology into mental health care from leading experts in the emerging field of behavioral telehealth, and (b) presents recent efforts that illustrate the promise, potential, and challenges associated with the incorporation of new technologies into mental health care.

T HE public health burden associated with mental illness is staggering. Almost one quarter of the U.S. population has suffered from a mental disorder in the past 12 months (Kessler, Chiu, Demler, & Walters, 2005), and roughly half of the population will meet criteria for a mental disorder at some point during their lifetime (Kessler, Berglund, et al., 2005). These disorders are associated with enormous personal, family, and societal costs (Breslau, Lane, Sampson, & Kessler, 2008; Comer, Blanco, et al., 2011; Kessler et al., 2006; Merikangas et al., 2007; Swendsen et al., 2010), and the very heavy toll of mental health problems is broadened when considering mental health concerns beyond simply diagnosable mental disorders (see Angold et al., 1999). Roughly 30% of youth with severe mood dysregulation do not meet formal criteria for a mental disorder but nonetheless exhibit considerable clinical impairments (Brotman et al., 2006). Relationship problems are linked to tremendous clinical impairments, and childhood adversities (e.g., parental mental illness and criminality, family violence, maltreatment) are associated

with roughly one in four adult-onset disorders (Green et al., 2010). Given the enormous scope and impact of mental health problems, it is encouraging that tremendous advances have been made over the past few decades in the development and evaluation of psychological treatments that can meaningfully reduce symptoms and associated impairments (Barlow, 2008).

Despite the great advances in intervention science, however, gaps persist between treatments in experimental settings and services available in routine practice settings. Regrettably, the vast majority of individuals in need of mental health care are simply not receiving the best of what our science has to offer. In a given year, only 40% of Americans with mental disorders have received treatment in the prior year, and less than one-third of those who do receive treatment are receiving their care from a mental health care professional (Wang, Lane, et al., 2005). Among the minority of affected individuals who do receive care, the median delay in treatment initiation after initial disorder onset ranges from 6 to 23 years across disorders (Wang, Berglund, et al., 2005), and only a small proportion of these individuals receive research-supported services (Weisz, Sandler, Durlak, & Anton, 2005).

These daunting problems in the utilization and quality of mental health services can be attributed in large part to a number of systematic barriers that interfere with the

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availability, accessibility, and acceptability of evidence-based care. Inadequate numbers of mental health professionals restrict care availability. Professional workforce shortages in mental health care, particularly in rural and other remote regions, leave roughly 50% of the population affected by mental illness without a mental health provider in their geographic proximity. Kazdin and Blase (2011) argue that the discrepancy between the number of affected individuals and the number of available providers is so dire that even *doubling* the mental health workforce would yield only a minor improvement in care availability when considered from a broad public health perspective. Transportation barriers further restrict care, as considerable numbers of individuals in need have no way to travel to receive services. For those with mental health services available locally, long wait lists at underfunded clinics slow the speed with which services are delivered. Not surprisingly, psychological treatments have assumed a less prominent role in outpatient mental health care in recent years (Olfson & Marcus, 2010), and those who do receive psychological treatments are not necessarily receiving evidence-based care (Sandler et al., 2005) due to serious problems in the effective dissemination of supported treatments (McHugh & Barlow, 2010). Problems in the availability of quality psychological treatments place increased burdens on the pharmacologic dimensions of care. Not surprisingly, in recent years we have witnessed striking increases in the concerning use of off-label pharmacologic regimens with limited efficacy and safety data being used to manage mental health problems for which well-tolerated psychological treatments have been supported in research settings (Comer, Mojtabai, & Olfson, 2011; Comer, Olfson, & Mojtabai, 2010).

Although evidence-based psychological treatments grounded in strong theory and supported by rigorous controlled trials have undoubtedly helped many individuals, at a population level the great advances in intervention science have had very little of a meaningful public health impact. Despite our efforts, we are in danger of becoming the proverbial tree falling in the woods with no one there to hear it. We must ask ourselves: *Are we making any noise with our work?*

Technological Innovations May Help Overcome Traditional Barriers to Care

Rapidly developing and affordable information and communication technologies, broadening Internet availability, and increasingly sophisticated capacities for live home-based and mobile broadcasting have transformed how we communicate, work, and learn. It is estimated that over three-quarters of U.S. citizens have regular Internet access, with almost all of these individuals having household Internet access (United States Census Bureau, 2011). This is particularly promising given that in 2003 only half of U.S. households had Internet access.

In addition, recent federal commitments have invested several billions of dollars to expanding Internet access to underserved areas, and it has been projected that in the coming years Internet access will show the same household ubiquity traditionally demonstrated for telephones. Mobile technologies have become increasingly affordable each year, and technological literacy has been steadily improving across all demographic groups.

Importantly, technological advances hold tremendous promise for remedying the very serious problems noted above in the broad quality and accessibility of mental health care, and a number of leading telemental health programs are already incorporating new technologies in highly innovative ways to broaden the reach of supported care (see Comer, Furr, et al., 2014; Crum & Comer, in press; Myers, Valentine, & Melzer, 2007; Myers et al. 2010). With technological literacy and Internet availability both rapidly rising (see Chou et al., in press), and rural and low-income Americans among the fastest-growing populations acquiring Internet access, delivery methods drawing on new technologies can transcend geographic barriers to quality care and remotely deliver evidence–based care to affected individuals, regardless of their proximity to an expert mental health facility or the manpower of their local mental health workforce. Moreover, remote technologies have the transformative potential to expand the ecological validity of treatment by reaching clients in the very settings that are most problematic. Rather than having to generalize what has been learned in the clinic to real-world settings, remote technologies allow clients to learn and practice new skills in the very environments in which those skills are needed (see Comer, Elkins, et al., 2014).

Telemedicine refers to the use of electronic media to facilitate real-time interactions for the provision of care usually delivered in person, and remote technologies are already being incorporated across a range of health care disciplines. Given that mental health care relies primarily on verbal communication and visual observation, innovators in clinical psychology are increasingly considering how telemedicine methods may offer transformative opportunities to overcome geographical barriers to care.

The use of telemedicine methods for the delivery of mental health care is still an emerging field, and as such has been referred to by many different names in its infancy—e.g., *behavioral telehealth* (Comer & Barlow, 2014), *telemental health* (Myers & Turvey, 2013), *telepsychology*, and *telepsychiatry* (Myers et al., 2007). Since the first of these terms, *telepsychiatry*, was initially used in 1973 to characterize live consultation services using "interactive television" to connect experts at Massachusetts General Hospital to a remove medical site (Dwyer, 1973), there has been a steady increase in the number of scholarly and empirical papers devoted to the use of remote