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The Promise of Technology- Based Services for Addiction Treatment Clients Residing in Nonurban Areas

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Dear Editor:

New technologies have significantly expanded strategies to deliver health care services, which is particularly important in nonurban areas where technology can be used to bridge geographic distances. Nonurban areas have been disproportionately affected by the opioid epidemic (Rossen et al., 2013), yet residents in rural areas have fewer opportunities to obtain long-term recovery given the shortage of addiction treatment services. For example, 61% of rural counties in the United States do not have a physician who could prescribe buprenorphine (Andrilla et al., 2017). One study has been conducted on urban patients' use of technology in addiction treatment programs (McClure et al., 2013), and it is unknown whether these findings generalize to nonurban settings. Further, there are no data on patient preferences for using technology in addiction treatment.

To address these methodological and data gaps, a survey was conducted to determine access to and preferences for technology among nonurban clients receiving residential addiction treatment. The survey was conducted as part of a prospective study of a technology-based intervention to improve engagement in continuing care. The survey was administered to 159 clients between February 2014 and June 2016. The survey included information on ownership of computers, tablets, cell phones, and smartphones; access to the Internet; and use of Internet-based forms of communication. It included 17 items on preferences for technology-based services. This study was reviewed by the West Virginia University Institutional Review Board and determined not to be human subjects research.

The majority of respondents were male (53.5%), and the mean age was 35.2 years. Participants self-identified as White (85.6%) and American Indian (12.4%). The majority (62%) of the participants resided in a rural county; none resided in an urban county. Nearly all respondents (95.0%) reported having a cell phone; 84.8% of those had a smartphone. The majority of respondents (72.9%) had a personal computer in their home, and 82.4% had Internet access from home. Nearly all clients (99.4%) reported having ever used the Internet, 96.7% used text messaging, and 88.5% used Facebook. Among participants using these, 91.6% used text

TABLE 1. Preferences for technology-based communications (*N* = 159)

Variable	Very/ somewhat interested (*n*)	Somewhat/ very disinterested (*n*)
Appointment reminders via text message	90.7% (137)	9.3% (14)
Ability to download educational information on addiction	87.7% (135)	12.3% (19)
Reminders regarding prescription refills via text message	84.9% (129)	15.1% (23)
Tracking your symptoms and progress online	83.0% (127)	17.0% (26)
Appointment reminders via phone message	81.0% (119)	19.0% (28)
Smartphone applications related to recovery	79.7% (122)	20.3% (31)
Ability to download treatment forms online	79.2% (118)	20.8% (31)
Peer support group online	77.6% (118)	22.4% (34)
Receiving recovery information via e-mail	75.2% (115)	24.8% (38)
Reminders regarding prescription refills via phone message	75.0% (108)	25.0% (36)
Appointment reminders via e-mail	73.7% (112)	26.3% (40)
Scheduling appointments online	69.1% (105)	30.9% (47)
Reading a recovery blog	67.1% (102)	32.9% (50)
Reminders regarding prescription refills via e-mail	66.0% (99)	34.0% (51)
Receiving recovery information electronically (USB drive, CD-ROM)	63.5% (94)	36.5% (54)
Individual therapy online	65.1% (99)	34.9% (53)
Sharing your electronic medical record with your other health care providers (primary care provider)	61.6% (93)	38.4% (58)
Video podcasts on recovery	59.5% (88)	40.5% (60)
Group therapy online (clinician facilitated)	59.5% (91)	40.5% (62)
Video conferencing to communicate with your clinician/counselor	57.8% (85)	42.2% (62)
Audio podcasts on recovery	54.7% (82)	45.3% (68)

messaging daily, 82.0% used the Internet daily, and 61.1% used Facebook daily. Client preferences for technology-based services are reported in Table 1.

Nonurban addiction treatment clients had greater access to technology compared with those in urban areas. These nonurban clients were more likely to have a mobile phone (95% vs. 85%), use text messaging (97% vs. 79%), have a computer or tablet (73% vs. 58%), and use the Internet

at least weekly (95% vs. 44%) (McClure et al., 2013). Access to the Internet and technology ownership were higher compared with national averages, contrary to research suggesting a greater digital divide in rural areas (Perrin, 2017). Ninety-two percent of respondents reported using text messaging daily; it's not surprising that participants were most interested in using text-based communication for appointment reminders and prescription refill reminders. The generalizability of these findings is limited; however, the methodological approach could be used to determine the appropriateness of and potential patient use of technology-based services. This methodological approach may be used in areas outside the United States, where there are limited addiction services and high use of mobile phones. Although technology access and preferences may not directly translate into use or sustained adoption, they do reflect patient acceptability and a strategy that may be used to bridge services in nonurban areas hit hardest by the opioid epidemic.

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Conflict of Interest Statement

The authors do not have any conflicts to report.

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