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A Survey of Online and Mobile Technology Use at Peer Support Agencies

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Abstract

Objective—Understanding how individuals with mental illness who receive services at peer support agencies use technology can inform the development of online and mobile health interventions tailored for users in these non-traditional mental health settings. The purpose of this study was to assess the use of technology among individuals with mental illness at peer support agencies.

Methods—A survey delivered within peer support agencies (PSAs) in one state assessed technology use among individuals ages 18 and over with a self-identified mental illness receiving services at these agencies.

Results—In total, 195 individuals from 10 PSAs completed the survey. Eighty-two percent of respondents used the internet, with 63% of respondents connected to the internet at the PSAs. Eighty one percent of respondents owned a cell phone, 70% used text messaging, 58% owned smartphones, 61% used mobile applications, and 72% used social media. PSA users under age 55 were significantly more likely to own a smartphone than PSA users age 55 and older. Among internet users, 71% had searched for health information online and 57% had searched for mental health information online

Conclusions—Many individuals who receive services at PSAs have access to online and mobile technologies. These technologies may be leveraged to expand the reach of evidence-based health and mental health programs to individuals in these non-traditional mental health settings. Future

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research should explore the feasibility of intervention strategies that involve PSAs as a resource for linking people with mental illness to online and mobile support for their health and wellness goals.

Keywords

Mental illness; peer support; technology; mobile health; social media

Introduction

Internet and mobile technologies provide a unique opportunity to deliver cost-effective interventions with on demand information and support for health and wellness. Approximately nine-in-ten American adults use the internet, 93% own cell phones, 77% own smartphones, and 79% of adults who are online use popular social media such as Facebook [1–3]. Lower income adults are making gains in technology adoption, though a digital divide between lower and upper income individuals persists [4]. Increasing internet use and mobile device ownership among lower-income adults is generating enthusiasm for the potential to reach vulnerable groups with evidence-based therapeutic tools for health and mental health promotion [5]. Considering the many barriers to receiving evidence-based behavioral interventions, digital technology is a promising solution to reaching the millions of people worldwide with mental illness with potentially cost-effective and accessible interventions to advance physical and mental health [6, 7].

Most prior research on technology use among persons with mental illness in the US has been conducted in outpatient psychiatric clinics and community mental health centers [8–11], where patients are engaged in formal mental health care services. Researchers exploring the potential of technology use in psychiatry have primarily focused on developing evidence-based tools for use in clinical settings delivered by clinical providers to improve mental health diagnosis and psychiatric treatment and rehabilitation [12]. To date surprisingly little attention has been given to the potential for online and mobile technologies to address the health and mental health needs of persons with mental illness in non-traditional mental health settings, such as self-help organizations, consumer-run services, and mental health advocacy organizations.

National estimates indicate that over one million people in the US receive services from self-help and consumer-run organizations that offer complementary and alternative mental health services for individuals with mental illness and their family members [13]. A primary objective of consumer-run services is to promote recovery outcomes, such as quality of life and social and personal functioning, in contrast to treating or preventing clinical features of mental illness [14]. Technology-based therapeutic tools that target constructs such as empowerment, self-efficacy, self-determination, and social connections [15–18] may be particularly appealing in non-clinical peer support settings. A first step in exploring the feasibility of intervening with digital health technologies in peer support settings is to understand how individuals served in these non-traditional mental health settings use online and mobile technologies.

In a prior study we conducted preliminary research on the use of computers and the internet among people with mental illness who were users of peer support agencies (PSAs) [19].

PSAs provide non-clinical mental health services that are augments to, referral sources for, or alternatives to public mental health centers for individuals who self-identify as a person with mental illness. Our survey results showed that over three quarters (79%) of PSA users had gone online in the past year, and 49% were interested in learning more about online forums that provide information and support for mental health issues [19]. The objective of the present study was to expand on our prior work and to conduct a more comprehensive assessment of technology use among PSA users that included use of mobile technologies, such as smartphones, mobile applications, and social media.

Methods

The New Hampshire Bureau of Behavioral Health facilitated a survey of technology use among consumers receiving services at NH Peer Support Agencies (PSAs). NH PSAs are operated by and for people with a mental illness and are designed to promote mental health recovery. PSA services include, but are not limited to: face-to-face and telephone peer support; outreach; monthly educational events; activities that promote self-advocacy; wellness training; after hours warm line; and crisis respite (24 hours, short-term, non-medical crisis program). Thirteen PSAs have contracted with the NH Department of Health and Human Services, Bureau of Behavioral Health to provide services to people with mental illness who are 18 years of age or older and self-identify as a recipient, former recipient, or at significant risk of becoming a recipient of publicly funded mental health services.

The technology use survey in the present study was administered over a 60-day period starting in July 2016. At the time of the survey there were 1064 active members of the PSAs. PSA leadership and staff invited all participants of the PSAs to complete a 15-question survey. The survey was anonymous and was completed electronically on a web-based platform (i.e. Survey Monkey) using a computer located at the PSA or on paper. This format made it possible to survey members of the PSAs regardless of their current access to or familiarity with using the internet or other technology. PSA leadership and staff provided support to complete the survey if needed.

Survey respondents were asked to report their age and race, and to identify which of the 13 PSAs they belonged to. The technology use survey was adapted from our prior research assessing technology use among individuals with serious mental illness at community mental health centers [10]. Four questions focused on internet use: 1) Do you use the internet? 2) Please tell me about all the ways you connect to the internet choosing from a list of common ways to access it (e.g., home computer, cell phone with internet access, at the peer support agency) 3) Have you ever used the internet to access information about your health? 4) Have you ever used the internet to access information about your mental health? Four questions focused on cell phone ownership and use: 1) Do you own a cell phone? 2) Is your phone a smartphone (in other words, does it let you make telephone calls but also send text and receive emails and texts)? 3) Do you ever use your phone to send and receive text messages? 4) Please tell me from the following list what type of mobile devices you use regularly (e.g., iPhone, Android phone, or other smartphone).

Four questions focused on assessing use of mobile applications: 1) Do you use apps (e.g., for email, music, games, maps, checking the weather)? 2) What is your favorite app? 3) Have you ever used a health or fitness app? 4) Have you ever used a mental health app? Three questions focused on use of social media: 1) Do you use any of these popular sites, check all that apply (e.g., Facebook, Twitter, Instagram, Snapchat, YouTube)? 2) Have you ever searched for information about your physical health on these sites? 3) Have you ever searched for information about your mental health on these sites? The survey did not collect any personally identifiable information and thus was exempt from review by the NH Department of Health and Human Services Institutional Review Board. We followed the guidelines for maintaining the safety of humans subjects as outlined by the Declaration of Helsinki.

Data Analysis

Descriptive statistics were used to characterize the sample and chi-square tests of independence were used to examine whether there was a significant relationship between mobile phone ownership and age. Specifically, we compared cell phone and smartphone ownership among PSA users ages 18 to 54 to users ages 55 and older. We hypothesized that PSA users under age 55 would be more likely to own cell phones and smartphones than PSA users age 55 and older. We also compared participants' online and mobile technology use with findings reported in a prior published survey of individuals with serious mental illness receiving services from community mental health centers in New Hampshire [10], as well as national surveys of the general adult population conducted by the Pew Research Center on internet, smartphone, and social media use [2, 3, 1]. Data analyses were conducted using SPSS version 23.

Results

In 2016, NH PSAs provided services to over 2,300 adults with mental illness. During the 60-day survey period, 195 of the 1064 people participating in peer support services (18%) during the first quarter responded to the survey. PSA survey respondents were predominately White (86%). Only 7% of PSA users were under age 25 years, 32% were age 25–44 years, 53% were age 45–64 years, and 8% were over age 65 years.

Over three quarters (82%) of respondents used the internet, 80% owned a cell phone, 70% used text messaging, 58% owned smartphones, 61% used mobile applications, and 72% used social media. Among participants who owned a smartphone, 59% owned an Android phone, 29% owned an iPhone, and 12% owned another type of smartphone. PSA users under age 55 (n = 112) were significantly more likely to own a cell phone (86% vs. 71%, respectively) than PSA users age 55 and older (n = 65), χ^2 (1, N = 177) = 5.79, p <.05. PSA users under age 55 (n = 112) were also significantly more likely to own a smartphone (67% vs. 43%, respectively) than PSA users age 55 and older (n = 63), χ^2 (1, N = 175) = 9.64, p <.01.

Seventy-one percent of respondents who used the internet had searched for health information online and 57% had searched for mental health information online. Forty percent of respondents who used mobile applications used a health or fitness app and 23%

used a mental health app. Table 1 highlights characteristics of respondents' use of technology, including the different ways they connected to the internet and the social media sites they used. Table 2 shows mobile phone ownership by population density of the cities where the PSAs were located. Mobile phone ownership did not appear to vary by population density of PSA location.

Figure 1 shows participants reported rates of internet, text messaging, and social media use compared to a survey of individuals with serious mental illness at community mental health centers and national surveys of technology use in the general adult population conducted by the Pew Research Center. Respondents with mental illness receiving services at PSAs and community mental health centers reported lower rates of smartphone ownership when compared to the general population. However, rates of other online and mobile technologies among PSA service users are comparable to adults in the general population.

Discussion

The objective of this study was to assess how individuals with mental illness who are PSA service users in one state use online and mobile technologies. Current knowledge about how people with mental illness use technology is based largely on research conducted with individuals recruited from clinical mental health treatment settings. However, over one million people with mental illness across the US participate in non-clinical self-help and consumer-run and consumer-controlled organizations [13]. The present study was a preliminary step in assessing the potential promise and possible challenges of disseminating scalable online and mobile technologies for promoting the health and well being of persons with mental illness in non-clinical peer support settings.

We found that most PSA users have access to online and mobile technologies, and report use of technology that is comparable to adults in the general population. These data are consistent with findings from prior surveys of technology use among adults with serious mental illness in formal mental health care treatment settings [20, 10, 21], which suggests that there may be comparable access to technology among individuals with mental illness who receive services at either PSAs or formal clinical settings. This is valuable insight because it suggests that emerging digital interventions aimed at supporting the health and mental health of individuals living with mental illness may have more widespread reach than previously considered, with potential applicability across both formal and informal settings.

While we found that smartphone ownership was lower among persons with mental illness compared to adults in the general population, this gap does not appear to be as wide among younger age groups given that sixty-seven percent of PSA users under age 55 reported owning a smartphone. These data add to mounting empirical evidence supporting the promise of using online and mobile technologies to reach individuals with mental illness, and provide a novel contribution by suggesting that online and mobile technologies may also be promising approaches for reaching those who receive services in non-traditional mental health settings.

There are many potential benefits of the internet as a source of information and support that are consistent with the philosophy and spirit of peer support services which embrace empowerment, shared decision making, and peer exchanges of information and social support [22]. We found that 71% of PSA respondents who used the internet had searched for health information online and 57% had searched for mental health information online. Thus, online health and mental health information-seeking behavior was moderately high among PSA service users, suggesting that online interventions that address health and mental health may be appealing to PSA consumers. While the Internet is the single largest source of information worldwide, the quality of health and mental health information online varies between sources [23]. In the future peers may play an important role in helping one another effectively use online health and mental health information sources and gain access to evidence-based online and mobile interventions that support health goals and promote well-being.

Social media is increasingly used as a platform for people with mental health conditions to share their illness experiences or seek advice from others with similar lived experiences with mental illness [24]. In the present study 72% of PSA respondents used social media: 77% used Facebook and 82% used YouTube. These rates are comparable to use of social media among persons with SMI reported in prior studies [10]. Research by our group and others has explored naturally occurring peer support among persons with mental illness on social media platforms [25, 26] and the feasibility and preliminary effectiveness of interventions that leverage social media to facilitate peer support for health behavior change in this population [24, 15, 27]. The majority of respondents (85%) to a survey of Twitter users who self-identified as having a mental illness expressed interest in mental health programs delivered through social media, especially to promote overall health and well-being (72%) and for coping with mental health symptoms (90%) [28]. There is significant potential for using social media as a platform for connecting PSA users who wish to engage in mutually beneficial support for accessing evidence-based health and mental health interventions.

Future research exploring the potential to intervene with online and mobile health technologies in PSAs and other consumer-operated services will need to consider the role of peers in the design, delivery, and evaluation of such interventions. Individuals often turn to peer support services seeking non-clinical, non-hierarchical and reciprocal support for recovery goals outside of or in addition to traditional mental health services. A challenge for the field will be to design effective ways to implement evidence-based health promotion and mental health interventions in PSAs and other consumer-operated services that acknowledges and leverages established peer relationships based on trust, respect, and mutual support. Peer navigators have played a role in helping people with mental illness gain access to formal health and mental health care services [29–31]. A peer technology navigator model implemented in PSAs may be useful for linking persons with mental illness to evidence-based online and mobile interventions in these non-clinical mental health settings. Future research should seek input from peer support stakeholders, including leadership, staff, and members, on feasible and desirable roles for peers in the delivery of technology based interventions to promote the health and well-being of persons with mental illness.

Limitations

The present report provides a snapshot of technology use among people with mental illness who use PSA services in non-clinical mental health settings in one state. The results should be interpreted with caution. PSA users who do not use technology or do not like it may have not completed the survey. Nonresponse bias among PSA users can negatively impact both the reliability and validity of survey study findings. Although PSAs are designed and funded to support people with diagnoses of mental illnesses, to maintain anonymity in our survey we did not obtain information about respondents' mental health diagnoses or symptoms. Additionally, this survey was completed on computers or by paper located at the PSA. It is possible that respondents' experience with computers and the internet is not representative of the entire population of people with mental illness who use peer support centers. However, since the survey could be completed either on paper or via computer, it is unlikely that respondents were more or less likely to be computer and Internet users than those who did not complete the survey. Finally, we did not explore privacy and security concerns among survey respondents even though these concerns may be a barrier to implementing online and mobile interventions at PSAs. Despite these limitations, the current study provides preliminary insight about technology use among people with mental illness who attend peer support agencies.

Conclusions

Many individuals who receive services at PSAs report having access to online and mobile technologies. Online and mobile technologies may be leveraged to expand the reach of evidence-based health and mental health promotion programs to individuals in these non-clinical mental health settings. Peers may play an important role in helping one another effectively use online health and mental health information sources and gain access to evidence-based technology interventions that support health goals and promote wellness. Future research should explore the feasibility and acceptability of intervention strategies that involve PSAs as a resource for linking people with mental illness to online and mobile interventions.

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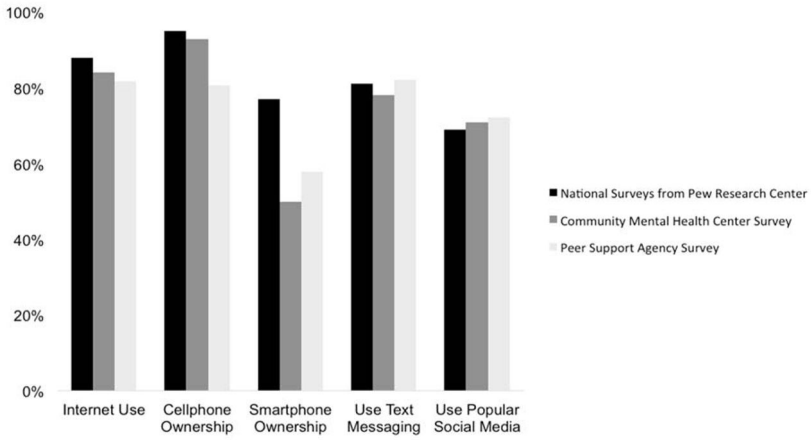

Figure 1.

Technology Use Among PSA Respondents Compared to General Population and Community Mental Health Centers[a,b]

[a]Data was obtained from a sample (n=70) of people living with serious mental illness surveyed in community mental health centers [10]

[b]National survey data was obtained from the Pew Research Center reports on Internet, smartphone, and social media use [2, 3, 1]

Table 1

Characteristics of PSA Users' Technology Use

Survey Responses	**Participants n (%)**
Ways respondents access internet among the 156 (82%) respondents who used the Internet	
Peer support agency	96 (62%)
Cell phone	90 (58%)
Personal computer	84 (54%)
Library	55 (35%)
Tablet computer (e.g., iPad)	41 (26%)
Workplace	38 (24%)
Family or friend's computer	34 (22%)
Mental health agency	12 (8%)
School	6 (4%)
Senior center	4 (3%)
Types of social Media use among the 141 (72%) respondents who used social media	
Facebook	109 (77%)
Twitter	16 (11%
Instagram	21 (15%)
Snapchat	17 (12%)
YouTube	115 (82%)
Linkedin	20 (14%)
Tumblr	5 (4%)
Pinterest	28 (20%)
WhatsApp	5 (4%)
Google Plus	52 (37%)
Reddit	4 (2%)
Myspace	1 (0.7%)

Table 2

Mobile Phone Ownership by Population Density of Peer Support Agency Location

NH PSA Location	(N)	Population Density (per SQMI)	Cell Phone Ownership	Smartphone Ownership
			%	%
Claremont city and Lebanon city	36	312	82.4%	73.5%
Conway town, Carroll County	37	326	75.7%	51.4%
Laconia city, Belknap County	24	404	91.7%	66.7%
Keene city, Cheshire County	16	621	86.7%	71.4%
Concord city, Merrimack County	20	630	85.0%	55.0%
Rochester city, Strafford County	4	653	75.0%	75.0%
Portsmouth city, Rockingham County	12	1,268	50.0%	11.1%
Derry town, Rockingham County	13	1,430	84.7%	46.2%
Nashua city, Hillsborough County	12	2,722	70.0%	45.5%
Manchester city, Hillsborough County	9	3,148	77.8%	77.8%