Smartphone Ownership, Use, and Willingness to Use Smartphones to Provide Peer-Delivered Services: Results from a National Online Survey

Karen L. Fortuna[1,2], **Kelly A. Aschbrenner**[1,2], **Matthew C. Lohman**[3], **Jessica Brooks**[1,2], **Mark Salzer**[4], **Robert Walker**[5], **Lisa St. George**[6], and **Stephen J. Bartels**[1,2,7]

[1]Dartmouth Centers for Health and Aging, 46 Centerra Parkway, Suite 200, Lebanon, NH 03766, USA

[2]CDC Health Promotion Research Center at Dartmouth, Lebanon, NH, USA

[3]Arnold School of Public Health, Department of Epidemiology and Biostatistics, University of South Carolina, 921 Assembly St, Columbia, SC 29208, USA

[4]Temple University Department of Rehabilitation Sciences, 1700 N Broad St, Philadelphia PA 19121, USA

[5]Massachusetts Department of Mental Health, 25 Staniford St, Boston, MA 02114, USA

[6]RI International, 2701 N. 16th Street, Phoenix, AZ 85006, USA

[7]The Dartmouth Institute for Health Policy and Clinical Practice, 1 Medical Center Drive, Lebanon, NH 03766, USA

Abstract

Assess certified peer specialists' smartphone ownership, use, and willingness to use smartphones to provide peer-delivered services. Certified peer specialist from 38 states completed an online survey. The final sample of 267 certified peer specialists included respondents from 38 states. The majority of certified peer specialists were female (73%; $n = 195$) and Caucasian (79.8%; $n = 213$), with an average age of 50.9 ($SD = 12$) years, range from 21 to 77 years. More than half of the certified peer specialists (82.1%; $n = 184$) were currently working in peer support positions. Of those who reported their mental health diagnoses, 11% reported their diagnosis as schizophrenia spectrum disorder, 22% of respondents reported bipolar disorder, and 23% reported persistent major depressive disorder. Nearly all respondents owned a smartphone (94.8%; $n = 253$), and everyone indicated that smartphones and tablets could enhance the services they deliver. Certified peer specialists reported substantial ownership and use of smartphones, comparable to existing national data. They are willing to deliver smartphone interventions for mental health and physical health self-management, suggesting that smartphones may be an increasingly useful tool for

offering evidence-based care. Without Medicaid mandate, certified peer specialists are naturally trying to enhance peer delivered services with technology. Peer support could act as a mechanism to promote consumer engagement in a smartphone-based intervention. Certified peer specialist own and utilize smartphones, and the majority are willing to deliver technology-based and technology-enhanced interventions using these devices to address medical and psychiatric self-management.

Keywords

Serious mental illness; mHealth; Peer support; Illness self-management

Adults with serious mental illness (SMI), including people with schizophrenia, bipolar disorder, and major depressive disorder represent approximately 4% of the United States population [1]. People with SMI experience 10 to 25 years reduced life expectancy on average compared to the general population [2–5]. Early mortality in persons with SMI is frequently related to inadequate self-management of medical and psychiatric conditions [6]. Integrated self-management interventions have high potential for clinical effectiveness and potential to address early mortality risk factors in persons with SMI [7]. Despite numerous advances in the development of effective behavioral interventions to address this early mortality disparity, existing self-management interventions for persons with SMI require substantial organizational and financial resources, and a highly trained workforce to implement [7].

Emerging self-management interventions for people with SMI have included certified peer specialists as the interventionists. Peers have unique knowledge from their lived experience and status that may lead to beneficial interactions that might enhance the development and application of self-management skills [8]. Certified peer specialists are the largest growing mental health workforce [9]. Furthermore, they have the capacity, time, financing, and appropriate knowledge of self-management to support adults with SMI and chronic health conditions [9]. Emerging evidence indicates peer-delivered self-management interventions lead to improvements in patient activation, self-efficacy, health locus of control, and illness self-management behaviors among people with SMI [10–13]. The largest randomized controlled trial of a peer- delivered self-management program ($N = 400$) found improved physical health and mental health-related quality of life among adults with SMI and comorbid medical conditions compared to usual care [14].

Peer services delivery is being advanced with mobile technologies by targeting illness self-management skill development and early mortality in people with SMI. A pilot study found that the combination of peers and mobile health (mHealth) was feasible and acceptable [15]. This pilot led to improvements in psychiatric self-management, self-efficacy for managing chronic health conditions, hope, quality of life, medical self-management skills, and empowerment [15]. Promising evidence suggests incorporating mHealth technologies with peer services delivery may offset the substantial organizational and financial resources needed to implement existing self-management interventions. For example, existing interventions commonly take 1–2 years to deliver [7]; however, the combination of peers and

mHealth reduces intervention duration, yet increases intervention dose through using smartphone app features to reinforce self-management skill development outside of the clinical environment [15, 16]. Smartphone-supported interventions may also have a higher potential for cost effectiveness than in-person only interventions [17]. Increasing smartphone device ownership and Internet use among adults with SMI suggest mHealth approaches may be feasible in this population [4–7]. However, limited research has been conducted on the use of mHealth to facilitate peer-delivered self-management interventions. Despite increasing research regarding integration of mHealth into mental health services interventions [18], it is unclear whether certified peer specialists will use mobile technologies and implement an mHealth-based evidence-based practice [19].

While smartphone ownership has reached between 72 to 93% of people with serious mental illness [20, 21], limited knowledge exists on certified peer specialists ownership, use, and willingness to use mobile technologies to support self-management skill development. The objective of this project was to assess certified peer specialists' personal smartphone ownership and use. Additionally, we explored certified peer specialists' williness to use smartphones to deliver an evidence-based self-management intervention to adults with SMI. The results of this study will help funders, agencies, and programs better understand the feasibility of integrating technology into the certified peer specialist workforce.

Methods

A national online survey was developed with input from certified peer specialists to assess certified peer specialists' smartphone ownership, use, and willingness to use smartphones to provide peer-delivered services to persons with SMI. Two peers reviewed and modified questions to ensure clarity and appropriateness for peer specialist respondents. The 20-item survey assessed whether respondents owned a smartphone ("yes", "no", "don'tknow") and if so, how often they use their smartphone with possible answers including "every day", "almost every day" or "3–5 times a week". Next, they were asked what do they use smartphones for? Possible answers included text messaging, calling family, calling friends, Facebook, video chat, and "other"). Then, they were asked if they were willing to a use smartphones to promote health behavior change with consumers ("strongly agree", "agree", "neither agree nor disagree", "disagree", "strongly disagree"). Then, they were asked if they were willing to text message consumers to promote health behavior change ("strongly agree", "agree", "neither agree nor disagree", "disagree", "strongly disagree"). Finally, participants were asked how could we get consumers to use a smartphone daily to promote health behavior change? Examples of possible non-mutually exclusive answers included "peer support", "family involvement", "medical doctor involvement". The online survey took approximately 20 min to complete.

Qualtrics was used to create the online survey. Inclusion criteria were individuals who completed a state accredited training program that resulted in some type of peer support certification, resided in the United States, and was aged 18+ years. An announcement about the survey with a survey link was advertised on multiple websites that target certified peer specialists and was distributed to certified peer specialists through electronic mailing lists and paper-based newsletters. The survey was available online from February 2018 to April

2018. A total of 289 individuals responded in that timespan. Of these, 22 (<10%) were excluded because they did not complete the survey. The final study sample was 267.

This study was deemed exempt by the institutional review board at [blinded for review]. Respondents read an informed consent statement that detailed the purpose of the study and that their participation was confidential and voluntary. Respondents agreed to participate before proceeding to complete the survey. The data collected did not contain any personally identifiable or sensitive information.

Data Analysis

SPSS version 22.0 was used for all analyses. Analyses were conducted using descriptive statistics (i.e., frequencies and percentages) to assess the demographic characteristics of the sample.

Results

The final sample of 267 certified peer specialists included respondents from 38 states. The majority of certified peer specialists were female (73%; $n = 195$). The average age was 50.9 ($SD = 12$) years, range from 21 to 77 years. The majority of respondents indicated they were Caucasian, (79.8%; $n = 213$), followed by black or African American (9%; $n = 24$), Hispanic or Latino (4.5%; $n = 12$), Native American (1.9%; $n = 5$), Asian (1.5%; $n = 4$), Pacific Islander, or Hawaiian Native (.7%; $n = 2$), and "other" (2.6%; $n = 7$). Of which more than half (82.1%; $n = 184$) were currently working as a certified peer specialist. Of those who reported a primary mental health diagnoses ($N = 200$), 22 respondents reported their diagnosis as schizophrenia spectrum disorder (11%), 46 respondents reported bipolar disorder (22.1%), 47 respondents reported major depressive disorder (22.6%), 29 respondents reported post-traumatic stress disorder (13.9%), 27 respondents reported alcohol/substance use disorder (13%), 2 respondents reported personality disorder (1%), and 12 reported "other" (5.8%) (See Table 1).

Smartphone Ownership and Use

Nearly all respondents owned a smartphone (94.8%; $n = 253$). Of respondents who owned smartphones, the vast majority used their smartphone everyday (90.6%; $n = 242$; $N = 249$) or almost everyday (2.6%; $n = 7$). Respondents mainly used their smartphone for text messaging (89.5%; $n = 239$), calling family (84.3%; $n = 225$), calling friends (80.5%; $n = 215$), and social media (67.8%; $n = 181$). Respondents also used their smartphone for listening to music (58.1%; $n = 155$), playing games (41.2%; $n = 110$), video chat (28.1%; $n = 75$), pedometer (19.1%; $n = 51$), and/or going on the Internet (84.3%; $n = 225$) (see Table 2). More than half of the respondents reported they were currently using technology when providing peer delivered services (57.3%; $n = 153$, $N = 252$), including wearable activity trackers (e.g. Fitbit) (5.2%; $n = 14$), smartphones (40.1%; $n = 107$), tablets (16.5%; $n = 44$), telephones (26.6%; $n = 71$), laptop/computers (41.6%; $n = 111$), and DVD player s(5.6%; $n = 15$).

Willingness to Use Smartphones in Peer Services Delivery

All of the respondents (100%) agreed the use smartphones and tablets could enhance peer support services. Most of the respondents indicated they were willing to use smartphones to promote health behavior change with consumers if the smartphone intervention followed the peer code of ethics; respondents reported, "strongly agreed" or "agreed" (89.9%; $n = 187$). Nearly all respondents indicated they were willing to text message consumers to provide peer support; respondents reported, "strongly agreed" or "agreed" (82.2%; $n = 171$). Nearly all respondents "strongly agreed" or "agreed" (89.4%; $n = 186$) a smartphone application that addressed medical and psychiatric self-management training could provide support outside of a doctors' office. Most respondents "strongly agreed" or "agreed" that with training they could deliver a smartphone-based medical and psychiatric self-management intervention (73.6%; $n = 153$).

Engaging Consumers to Use a Smartphone-Based Intervention Daily

Respondents primarily reported peer support (78.3%; $n = 209$) would encourage consumers with SMI to use a smartphone-based intervention. Respondents also indicated text message reminders (26%; $n = 70$) and including a supportive person to deliver the smartphone intervention would encourage consumers with SMI to use a smartphone-based intervention (57.7%; $n = 154$). Other suggestions included helping people with SMI gain a better understanding of how to use technology (63.7%; $n = 170$), using a smartphone application to reinforce peer sessions (61.5%; $n = 128$), encouragement from a medical doctor (44.6%; $n = 119$), encouragement from family (49.1%; $n = 131$), positive changes in their mental health and physical health (58.4%; $n = 156$), or telephone reminders (43.8%; $n = 117$).

Discussion

A national online survey of certified peer specialists found high rates of technology use and willingness to use technology to provide an evidence-based intervention among certified peer specialists. Certified peer specialists reported ownership and use of smartphones comparable to that of the general population. Certified peer specialists reported being willing to utilize smartphone-based self-management interventions for people with SMI, suggesting that smartphones may be an increasingly useful tool for offering evidence-based care. Certified peer specialists are currently using technology services delivery. Peer support could act as a mechanism to promote consumer engagement in a smartphone-based intervention.

Certified peer specialists reported ownership and usage of smartphones comparable to that of the general population-95% compared to 77% respectively [22]. Smartphone ownership has reached between 72 to 93% of consumers with SMI [20, 21]. Consumers are also willing to be involved in smartphone-based interventions that target improving their physical health and mental health [21, 23, 24]. Smartphones potentially offer an untapped opportunity to deliver peer-led self-management interventions that extend beyond professional service delivery settings. In which, peers could potentially deliver self-management services

virtually without in-person meetings. Of which, could potentially offset organizational and financial burden of both peer and professional services delivery.

Without Medicaid mandate, certified peer specialists are naturally trying to enhance peer delivered services with technology. Like professional services providers, it appears that certified peer specialists understand the benefits of using technology in services delivery. However, they may not be providing peer-delivered and technology-supported evidence-based practices. There are concerns among professional mental health providers about peers' capacity to deliver evidence-based practices [25]. This is because most of their work is centered on providing a non-manualized form of social support to bring about personal change [25]. Potentially, with the use of technology and pre-determined algorithms and videos embedded in smartphone Apps, smartphone-based self-management interventions could guide peers in fidelity adherent delivery of evidence-based practices. Promising evidence indicates that a smartphone-based intervention appears to be an increasingly useful device for fidelity-adherent peer-delivered care. For example, a pilot study, N =8, found that certified peer specialists are providing evidence-based integrated self-management training with the assistive use of guided eModules (i.e., guided web-based curriculum) augmented by a smartphone application (PeerTECH) [15]. Emerging data from pilot studies and the findings in this report indicate support for further research on the effectiveness and implementation of peer evidence-based illness self-management interventions.

Certified peer specialists reported that "peer support" could act as a mechanism to promote consumer engagement in smartphone-based interventions. This is consistent with qualitative findings that indicate the importance of peer support in improving medical and psychiatric self-management skill development [16, 26, 27]. There are five general categories of peer support: (a) knowledge or advice; (b) lived experience; (c) emotional such as messages of concern or empathy; (d) social support; and (e) practical support such as offering goods and services to a person [8]. Research that indicates that adults with SMI who have greater social support experience high rates of recovery, fewer symptoms, increased use of medical services, and improved well-being [28, 29]. Among peer-delivered integrated illness self-management interventions "peer support" has not been examined as a potential mechanism of behavioral change [7]. Potentially, peer support can also act as a potential mediator in the causal pathway from intervention exposure to changing health behaviors and clinical outcomes.

This study is not without limitations. First, we are unable to verify that respondents were certified peer specialists. However, since there was not an incentive for participation the likelihood of recruiting ineligible participants was reduced. Second, since this was an online national survey only people with Internet access could complete the survey. This could potentially produce biased survey results (i.e., those who have access to the Internet or own and use smartphones might be more interested in an online survey on technology use). Future research should determine whether there is a bias. Nonetheless, these results suggest that at least among those who own smartphones, they are interested in using them in their work with peers. Additionally, we are unable to determine an accurate response rate as the online survey was sent to a minimum of 1500 certified peer specialists; however, we do not know how many people opened the email and read the contents. Despite limitations in the

response rate, reach and scalability are advantages of using online surveys allowed us to capture data from 38 states. Finally, mental health diagnoses were self-reported and may be inconsistent with the participants' formal diagnoses. However, to be a certified peer specialists does not require a specific diagnosis of a SMI; rather, certified peer specialists must be in recovery from any mental health condition.

To our knowledge, this is the first national survey of certified peer specialist's technology use and their willingness to use technology for health behavior change. These findings are an important contribution to advance the integration of technology into this emerging workforce. Certified peer specialist own and utilize smartphones, and the majority are willing to delivery interventions delivered via these devices to address medical and psychiatric self-management. Continuing development and evaluation of peer-delivered smartphone-based interventions for people with SMI is of great importance to advance services delivery beyond non-manualized, unstructured interventions to evidence-based mHealth interventions.

Funding

Biography

Karen L. Fortuna, PhD is a Ruth L. Kirschstein National Research Service Award T32 Training Post-Doctoral Fellow in Geriatric Mental Health Services Research at Dartmouth Centers for Health and Aging. Her primary research interest is service delivery strategies for older adults with serious mental illnesses and chronic health conditions.

Kelly A. Aschbrenner, PhD, is an Assistant Professor of Psychiatry at the Geisel School of Medicine at Dartmouth College. Her research focuses on social processes that influence health behavior change addressing obesity and smoking in people with serious mental illness. She is particularly interested in leveraging technology to facilitate social support for healthy eating, exercise, and smoking cessation in peer and family networks.

Matthew C. Lohman PhD, MHS is an Assistant Professor of Epidemiology at the University of South Carolina, Arnold School of Public Health. His research areas include examining the role of mental health disorders in predicting adverse health outcomes and health service utilization among older adults, depression management in home health care, and identifying predictors and occurrence of suicide in long-term care settings.

Jessica M. Brooks, PhD, CRC is a Postdoctoral Research Fellow working in the Department of Psychiatry at the Geisel School of Medicine at Dartmouth within the multi-site fellowship program funded by the Ruth L. Kirschstein National Research Service Award program. Her research interests involve chronic pain, depression and other mental health disorders, peer services, disability prevention, health promotion, and geriatric mental health interventions.

Mark Salzer, PhD is a Professor and former founding Chair of the Department of Rehabilitation Sciences at Temple University. He has also been the Principal Investigator and Director of the Temple University RRTC on Community Living and Participation For People with Serious Mental Illnesses, a Rehabilitation Research and Training Center (RRTC) funded by the National Institute on Disability, Independent Living, and Rehabilitation Research, since 2003.

Robert M. Walker, BA, MS, CPS, COAPS is the Peer liaison for the Massachusetts Department of Mental Health and is a person with lived experience of a mental health diagnosis. Mr. Walker is the Massachusetts representative to the National Association of State Mental Health Program Directors Older Persons Division, and the Chairperson of the Interagency Elder Mental Health Collaborative.

Lisa St. George, MSW, CPRP, is the Director of Recovery Practices at RI International and RI Consulting. With over 34 years of social work experience, Lisa is a leading expert in developing recovery-focused systems. Ms. St. George has provided leadership and start-up of many recovery programs in Arizona, California, and New Zealand. She has supervised and developed effective and sustainable peer workforces for more than 20 programs and over 600 peer support workers.

Stephen J. Bartels, MD, MS is Professor of Psychiatry, Community and Family Medicine, and of The Dartmouth Institute for Health Policy and Clinical Practice; and a Geriatric Psychiatrist. He directs the Dartmouth Centers for Health and Aging, is PI for a Centers for Disease Control Prevention Research Center aimed at reducing cardiovascular risk in persons with SMI and in primary care, and is R01-funded from NIMH including an RCT comparing telehealth and integrated self-management coaching for persons with SMI and comorbid health conditions and a randomized implementation study comparing two approaches to implementing health promotion for persons with SMI in 48 mental health organizations across the nation.

References

1. Kessler RC, Chiu WT, Demler O, et al. Prevalence, severity, and comorbidity of twelve-month DSM-IV disorders in the national comorbidity survey replication (NCS-R). Arch Gen Psychiatry. 2011;62:617-27.

2. Walker ER, McGee RE. Druss BG. Mortality in mental disorders and global disease burden implications: a systematic review and meta-analysis. JAMA Psychiat. 2015;72:334-41.

3. Druss BG, Zhao L, Von Esenwein S, Morrato EH, et al. Understanding excess mortality in persons with mental illness: 17-year follow up of a nationally representative US survey. Med Care. 2011;49:599-604. [PubMed: 21577183]

4. Colton C, Manderscheid R. Congruencies in increased mortality rates, years of potential life lost, and causes of death among public mental health clients in eight states. Prev Chronic Dis. 2006;3:1-14.

5. Mortensen PB, Juel K. Mortality and causes of death in first admitted schizophrenic patients. Br J Psychiatry. 1993;163:183-9. [PubMed: 8075909]

6. Parks J, Svendsen D, Singer P (eds) Morbidity and mortality in people with serious mental illness. Alexandria, Va, National Association of state mental health program directors medical directors council, 2006.

7. Whiteman KL, Naslund JA, DiNapoli EA, et al. Systematic review of integrated general medical and psychiatric self-management interventions for adults with serious mental illness. Psychiatr Serv. 2016;67: 1213-55. [PubMed: 27301767]

8. Salzer MS, Mental Health Association of Southeastern Pennsylvania Best Practices Team. Consumer- delivered services as a best practice in mental health care and the development of practice guidelines. Am J Psychiatr Rehabil. 2002;6:355-82.

9. Myrick K, Del Vecchio P. Peer support services in the behavioral healthcare workforce: state of the field. J Spec Pediatr Nurs. 2016;39:197-203.

10. Bartels SJ, Aschbrenner KA, Rolin SA, et al. Activating older adults with serious mental illness for collaborative primary care visits. Psychiatr Rehabil J. 2013;36:278-88. [PubMed: 24219769]

11. Goldberg RW, Dickerson F, Lucksted A, et al. Living well: an intervention to improve self-management of medical illness for individuals with serious mental illness. Psychiatr Serv. 2013;64:51-7. [PubMed: 23070062]

12. Lawn S, Battersby MW, Pols RG, et al. The mental health expert patient: findings from a pilot study of a generic chronic condition self-management programme for people with mental illness. Int J Soc Psychiatry. 2007;53:63-74. [PubMed: 17333952]

13. Druss BG, Zhao L, von Esenwein SA, et al. The health and recovery peer (HARP) program: a peer-led intervention to improve medical self-management for persons with serious mental illness. Schizophr Res. 2010;118:264-70. [PubMed: 20185272]

14. Druss B, Singh M, von Esenwein SA, et al. Peer-led self-mangement of general medical conditions for patients with serious mental illnesses: a randomized trial. Psychiatr Serv. 2018;69(5):529-35. [PubMed: 29385952]

15. Fortuna KL, DiMilia P, Lohman M, Bruce M, Zubritsky C, Halaby M, Walker R, Brooks J, Bartels SJ. Feasibility, acceptability, and preliminary effectiveness of a peer-delivered and technology supported self-management intervention for older adults with serious mental illness. Psychiatr Q. 2017;89(2):293-305.

16. Fortuna KL, Naslund JA, Aschbrenner KA, Lohman MC, Storm M, Batsis JA, Bartels SJ. Textmessage exchanges between older adults with serious mental illness and older certified peer specialists in a smartphone-supported self-management intervention. Psychiatr Rehabil J. 2018 10.1037/prj0000305.

17. Iribarren SJ, Cato K, Falzon L, et al. What is the economic evidence for mHealth? A systematic review of economic evaluations of mHealth solutions. PLoS One. 2017;12:e0170581. [PubMed: 28152012]

18. Whiteman KL, Lohman M, Bartels SJ. Peer and technology supported integrated medical and psychiatric self-management intervention for older adults with serious mental illness. Psychiatr Serv. 2017;68:420. [PubMed: 28366124]

19. Fortuna K, Bruce ML, Bartels SJ. A community-engaged research approach to the development and implementation a peer-delivered mobile health intervention for older adults with serious mental illness. Psychiatr Serv. 2017;68(4):420. [PubMed: 28366124]

20. Ben-Zeev D, Davis KE, Kaiser S. Mobile technologies among people with serious mental illness: Opportunities for future services. Admin Pol Ment Health. 2013;40:340-3.

21. Naslund JA, Aschbrenner KA, Bartels SJ. How people with serious mental illness use smartphones, mobile apps, and social media. Psychiatr Rehabil J. 2016;39:364-7. [PubMed: 27845533]

22. Mobile Fact Sheet. Avilable from: http://www.pewinternet.org/fact-sheet/mobile/, 2018.

23. Firth J, Cotter J, Torous J, et al. Mobile phone ownership and endorsement of mHealth among people with psychosis: a meta-analysis of cross-sectional studies. Schizophr Bull. 2015;42:448–55. [PubMed: 26400871]

24. Ben-Zeev D, Kaiser SM, Brenner CJ, et al. Development and usability testing of FOCUS: a smartphone system for self-management of schizophrenia. Psychiatr Rehabil J. 2013;36:289–96. [PubMed: 24015913]

25. Solomon P Peer support/peer provided services underlying processes, benefits, and critical ingredients. Psychiatr Rehabil J. 2004;27:4.

26. Fortuna KL, Naslund JA, Storm M, et al. Certified peer specialists and older adults with serious mental illness' perspectives of the impact of a peer-delivered and technology-supported self-management intervention. JNerv Ment Dis. 2018 10.1037/prj0000305.

27. Fortuna KL, Storm M, Aschbrenner KA, et al. Integration of peer philosophy into a standardized self-management mobile health intervention. Psychiatr Q. 2018 10.1007/s11126-018-9578-3.

28. Calsyn RJ, Winter JP. Social support, psychiatric symptoms, and housing: A causal analysis. J Community Psychol. 2002;30:247–59.

29. Thomas EC, Muralidharan A, Medoff D, et al. Self-efficacy as a mediator of the relationship between social support and recovery in serious mental illness. Psychiatr Rehabil J. 2016;39:352–60. [PubMed: 27845532]

Table 1

Sociodemographic characteristics of study participants (N = 267)

Characteristic	n (%) or mean (SD)
Age, years	
Mean (*SD*)	50.9 (12)
Range	21–77
Sex, n (%)	
Female	195 (73)
Race, n (%)	
Caucasian	213 (79.8)
Black/African-American	24 (9)
Hispanic or Latino	12 (4.5)
Native American (1.9%; n = 5),	5 (1.9)
Pacific Islander, or Hawaiian Native	2 (.7)
Other	7 (2.6)
Mental health disorder, N = 200 n (%)	
Major depressive disorder	47 (22.6)
Schizophrenia Spectrum Disorders	22 (11)
Bipolar disorder	46 (22.1)
Post-Traumatic Stress Disorder	29 (13.9)
Alcohol/Substance Use	27 (13)
Personality Disorder	2(1)
Other	12 (5.8)

Table 2

Smartphone ownership and use among study participants ($N = 267$)

Characteristic	n (%) or mean (SD)
Smartphone Owner	
Yes	253 (94.8)
No	14(5.2)
Smartphone Use	
Text messaging	239 (89.5)
Going on the Internet	225 (84.3)
Calling family	225 (84.3)
Calling friends	215 (80.5)
Social media	181 (67.8)
Listening to music	155 (58.1)
Playing games	110 (41.2)
Video chat	75 (28.1)
Pedometer	51 (19.1)
Current technology use for work as a certified peer specialist, $N = 252$	
Fitbit	14 (5.2)
Smartphone	107 (40.1)
Tablet	44 (16.5)
Telephone	71 (26.6)
Laptop/Computer	111 (41.6)
DVD player	15 (5.6)