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Permalink

<https://escholarship.org/uc/item/2rp6g3g6>

Journal

Community Mental Health Journal, 54(8)

ISSN

0010-3853

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Publication Date

2018-11-01

DOI

10.1007/s10597-018-0282-4

Peer reviewed



Published in final edited form as:

Community Ment Health J. 2018 November ; 54(8): 1172–1179. doi:10.1007/s10597-018-0282-4.

Using electronic health records to enhance a peer health navigator intervention: A randomized pilot test for individuals with serious mental illness and housing instability

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Abstract

Individuals with serious mental illnesses have high rates of comorbid physical health issues and have numerous barriers to addressing their health and health care needs. The present pilot study tested the feasibility of a modified form of the “Bridge” peer-health navigator intervention delivered in a usual care setting by agency personnel. The modifications concerned the use of an electronic personal health record with individuals experiencing with housing instability. Twenty participants were randomized to receive the intervention immediately or after 6 months. Health navigator contacts and use of personal health records were associated with improvements in health care and self-management. This pilot study demonstrated promising evidence for the feasibility of adding personal health record use to a peer-led intervention.

Keywords

peer-delivered; personal health record; serious mental illness; integrated health care; homelessness

Individuals with serious mental illness (SMI) have high rates of comorbid physical health issues, which contribute to their dying an average of 10–30 years earlier than those without mental health disorders (De Hert et al., 2011; Walker, McGee, & Druss, 2015). There are numerous reasons for this health disparity, from issues related to poor access, use, and quality of their health care to a lack of housing complicating their ability to recover from acute diseases or to manage chronic health conditions (De Hert et al., 2011). Several behavioral interventions have shown promise for improving the health and healthcare utilization of individuals with SMI (Kelly et al., 2014a). However, use of electronic personal health records (PHRs) has also recently been shown to improve outcomes for this population (Druss, Ji, Glick, & von Esenwein, 2014).

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Conflicts of Interest: None of the authors have any conflicts of interest to declare.

Individuals with housing instability and SMI are a population at even greater risk for poor health outcomes. Rates of injuries, infectious diseases, and chronic diseases are elevated for those who are homeless and the complexity of their comorbid mental health, substance use, and physical health conditions pose particular challenges for providers (Hwang, 2001; Hwang et al., 2005). These issues often persist even after they are housed (Henwood, Cabassa, Craig, & Padgett, 2013; Padgett et al., 2016), so it is critical to develop health care interventions that are effective for those who are homeless or have a history of homelessness (Gelberg, Gallagher, Andersen, & Koegel, 1997; Redpath et al., 2006). Multiple collaborative and integrated care strategies are being employed to improve the health care for the population of individuals with SMI with some promising results (Cabassa, Camacho, Vélez-Grau, & Stefancic, 2017; Kelly et al., 2014a). One such intervention is the “Bridge”. The “Bridge” is a peer-delivered health navigator model that targets factors that negatively impact health care access, utilization, and outcomes among individuals with SMI (for details see [Brekke et al., 2013; Kelly et al., 2014b]). Briefly, the Bridge consists of four components: (i) Assessment and Planning; (ii) Coordinated Linkages; (iii) Consumer Education; and (iv) Cognitive-Behavioral Strategies to support behavior change and behavior self-management regarding health care. The basis of intervention’s framework is Gelberg, Andersen, and Leake’s (2000) Model for Vulnerable Populations. This model identifies factors that can suppress or facilitate health care service use among those who are homeless and it was adapted specifically for those with SMI. The 6-month intervention consists of a health navigator providing 1:1 coaching sessions, is delivered *in vivo* (field-based), and addresses issues from prevention to management of chronic diseases. The goal of this pilot study was to enhance the Bridge intervention by incorporating use of an electronic personal health record (PHR). This combined intervention was implemented in a mental health agency in an urban setting by agency staff already delivering the Bridge. As such, this study was designed to be relevant to a highly challenging population and to improving usual care in mental health settings.

In a recent randomized controlled trial ($n=151$), the Bridge intervention was effective for increasing visits to, preference for, and the relationship quality with routine care providers, as well as more routine health screenings, and greater consumer confidence about self-managing health care needs over 6 months (Kelly et al., 2017). The intervention also helped to detect chronic diseases and reduce bodily pain. Consumers were encouraged to track their healthcare activities and status in a format suited to them, such as notebooks, binders, or setting phone alerts to remind them of appointments, groups, or to take medications. However, paper record keeping is challenging for those with unstable housing, and it is unclear how feasible it is for them to access and use an electronic PHR.

There are few studies of individuals with SMI and electronic PHR. Druss and colleagues (2014) conducted the largest evaluation to date of electronic PHR use by those with SMI. They found that, compared to a usual care group, those who used their PHR increased the number of annual physical exams, vaccinations, total services received, and improved hypertension services. However, PHR participants did not score higher on a measure of patient activation for health care relative to the usual care group. This suggests that access and use of a PHR alone is insufficient to improve self-management. It is possible that an intervention that specifically targets patient activation in conjunction with PHR could lead to

better outcomes. Additionally, the staffing and supports provided in Druss's study are likely beyond the capacities of many agencies. Participants completed a 4-hour computer literacy course, a 1-hour orientation to their PHR, 30-minute follow-up visits as needed, and a study staff member assisted with access during their first 6 months in the intervention (an average of 14.8 support visits with an average 8 hours of support). In the present study, we explored the feasibility of a PHR intervention that offers less intensive PHR supports, such as might be feasible for community mental health centers in practice, when used in combination with the Bridge.

The present study is a randomized pilot test of the feasibility of modifying a peer navigator intervention (the Bridge) to include use of a mental health based electronic PHR system with a homeless mentally ill population. We call the mental health based PHR a *collaborative personal health record* (C-PHR) to distinguish it from PHR maintained by a medical provider. C-PHR is under the collaborative control of consumers with their health navigator. The goal of this pilot study is to test whether use of the C-PHR system is feasible, and if use of C-PHR+Bridge intervention is associated with improved health care, health, and self-management outcomes.

Method

Study setting—The study was initially begun at a single program run by a contracted provider of mental health services in Los Angeles California with an existing full-time health navigator. However, the agency was downsized 5 months after the start of the study, which limited recruitment. A second program at the same site was added with 2 part-time health navigators to boost recruitment. These clinics treat primarily homeless individuals with mental illnesses. Services include psychiatric consultation and medication support, case management, substance abuse counseling, emergency and transitional housing. Program sites provided Full Service Partnership services (a less intensive form of assertive community treatment; see Starks et al., 2017) and health navigation.

Participant recruitment and study design—Clinic staff at the study sites identified 29 study candidates through use of a screening form that assesses if there are unaddressed physical health or healthcare needs and obtained their permission for the research team to contact them (8 declined, 1 did not meet criteria). Twenty participants were recruited for the study from existing mental health caseloads. All participants provided informed consent in accordance with the research protocol, which was approved by university Institutional Review Boards.

All participants were between the ages of 18–65, active recipients of mental health care, and residents in Los Angeles for at least 3 months. Participants could not be conserved, be unable to give informed consent, or be hospitalized at the start of the study. Participants had to have used the internet in the prior year to ensure they had some familiarity with technology and needed to be currently homeless or have a history of homelessness.

Using a computer-generated random number table, participants were randomized to C-PHR +Bridge immediately or to a six-month waitlist with C-PHR+Bridge services provided after

6 months. The waitlist group received case management services only before receipt of the intervention. The full-time health navigator was assigned 15 participants (7 waitlist, 8 immediate treatment) and the part-time health navigators were assigned 5 participants (2 waitlist, 3 immediate treatment). The health navigators had previously trained in the Bridge model through manualized training sessions over 4 days, biweekly group supervision, and coaching sessions while they worked with their first consumer until their certification as a health navigator. Three female health navigators (2 Latino, 1 Caucasian) were provided password protected encrypted iPads with wireless cards and portable scanners. The principal investigator completed multiple training sessions with the navigators to familiarize them with the iPad and the EHR (*range*: 1–4 trainings) and assisted in-person and by phone throughout the study.

Diffusion of the experimental intervention to usual care is a concern during intervention trials. A primary impetus for the intervention's development was that mental health staff reported having insufficient time to address health issues due to competing priorities (Brekke et al., 2013; Kelly et al., 2014b). These challenges remained throughout the study and staff did not report case managers changing their practices to mimic the intervention.

Portal design—We designed the C-PHR system to easily create reports for individual consumers, which could be printed and taken to the doctor's, as well as reports for supervision purposes. The website was login and password protected. Health navigators were only able to see their own caseloads. Participants were encouraged to use the portal on their own, with researchers, or with their navigator. Initially, health information was entered as part of the assessment with the researcher. Health navigators entered most health information thereafter as part of their ongoing work with participants, but participants also entered data. While meeting with participants navigators logged in through their own dashboard, which may have led to an underestimate of participants' portal use.

Participants and health navigators had access to different portal dashboards (website interfaces). Participants' dashboard had simple hyperlinks that they could click on to view or print a report on their health and healthcare. Participants could not edit information entered by others. Participants could view and print reports of official mental health diagnoses, benefits, clinic-tracked vitals, psychiatric medications recorded and research assessments. Participants could see graphs of a variety of health related self-tracked data such diet, exercise, vitals (e.g., weight, blood pressure), enter immunization and allergy information, and upload documents to their C-PHR. Navigators had access to all the data that their consumers' entered and they could enter, edit, and print all information. Navigators received a technical manual and in-person training for the system. Navigators used the system via an iPad in the field with participants or collaboratively with participants on a computer in the office.

At the intervention site, two computers and a printer were provided for participants. Participants completed at least two in-person one-on-one trainings with researchers on using the portal and were provided with a short manual on computer use, protecting their health information, and use of the portal.

Procedures—All research assessments were completed using the C-PHR system and read aloud by a researcher to improve comprehension of items. The full assessment took approximately 45–60 minutes to complete and all participants received \$15 per assessment. Participants received another \$15 if they completed a short interview about their experiences with the C-PHR after 6 weeks and at the conclusion of the study.

Measures

All measures were selected for parallel comparisons to previous “Bridge” evaluations (Kelly et al., 2017).

Demographic measures—Demographic information on race/ethnicity, gender, age, housing status, and occupational status were reported by participants. Agency mental health records of mental health diagnoses and housing status were retrieved from their electronic mental health records system.

Intervention engagement quality measures—Evaluations of the quality of the navigator relationship with participants were completed with the 12-item short form of The Working Alliance Inventory short version (WAI) upon the intervention’s completion (Hatcher & Gillapsy, 2006). The scale had good reliability in this study (Cronbach’s $\alpha = .85$). After 6 weeks of C-PHR+Bridge, participants were interviewed about their experiences using C-PHR, in terms of usefulness, frequency of access, and suggestions for improvement. This brief interview took approximately 15–20 minutes to complete. Additional training was provided to all participants during this interview if desired by the participants. A follow-up interview about C-PHR was completed at the end of the intervention. Navigators recorded the number and length of in-person contacts and phone calls that made contact.

Health service utilization—The frequency of visits to different types of medical providers in the prior 6 months was estimated using the Health care and Health care Utilization Scale, which was adapted from the UCLA Center for HIV Identification, Prevention, and Treatment Services’ health care and health utilization survey (CHIPTS, 2012). Participants rated the frequency that they visited each type of provider (0=*never*, to 4=*over five times*). For analytic purposes, providers were classified as emergency/urgent care if they were located in an emergency room, rehabilitation, or urgent care facility. Medical providers were classified as routine care providers if they provided services in primary care, specialty care, dentistry, optometry, or alternative medicine. Two scaled means were created for analysis. Preference for seeking initial health care at primary care or other settings, such as emergency rooms was also assessed. To test changes in preferred care locus at 6-month follow-up, participants were coded dichotomously as either retaining/developing preference to primary care or not.

Primary care provider relationship—Participants were asked if they had a primary care provider (PCP). If a PCP was identified, participants rated their satisfaction with them using 13 items from the Engagement with the Health Care Provider Scale (Bakken et al., 2000), with higher mean scores indicating more relationship problems (1= *always* to 4=*never*). The reliability of this scale was excellent (baseline Cronbach’s $\alpha = .96$)

Health screenings—Participants reported if they had had different health screenings since including an annual physical, dental, eye exam, colonoscopy, sexual health, or endoscopy in the prior 6 months or since their last assessment. A count of health screenings was created.

Pain—Participants rated the severity of their pain and how much pain interfered with their functioning within the last week using two items drawn from the SF-12 (Ara & Brazier, 2008). A z-scored overall pain index was created from the two items and had good reliability (baseline Cronbach's $\alpha = .86$).

Health care self-management—The Health Care Efficacy Scale was adapted from the Mental Health Confidence Scale (Carpinello, Knight, Markowitz, & Pease, 2000). Participants rated the frequency they performed tasks related to their health care on their own using a 3-point scale (1=*never* to 3=*more than 5 times*) and a mean score was calculated (baseline Cronbach's $\alpha = .89$). Three subscales were created to reflect domains of self-efficacy: making appointments, communication with the doctor, and completion of after care.

C-PHR—A count of all the log-ins by the participants was recorded within the C-PHR system.

Analytic plan—We explored if the C-PHR+Bridge intervention was associated with changes in healthcare, health, and self-management in two ways. First, we compared the change scores from baseline to 6-month follow-up between the C-PHR+Bridge and waitlist groups. Second, we combined the pre-intervention and post-intervention scores of both groups and completed within-person comparisons to see whether outcomes improved over time when both groups received C-PHR+Bridge. We used independent t-tests, paired t-tests, and Chi-square tests.

We also explored if the number of navigator contacts, number of portal logins, or housing status (currently homeless or not) were related to the combined within-person outcomes. As the sample size was too small to use multivariate models to test these associations, correlations of the frequencies of navigator contacts and portal use and t-tests of housing status were conducted with the combined within-person treatment change scores. Cohen's *d* was included as an estimate of effect size. As this was a small pilot study evaluating feasibility, we will interpret all two-tailed tests below $p = .10$ as significant and refrain from adjustments for multiple comparisons.

Results

Baseline sample characteristics

The C-PHR+Bridge group was predominantly female (55%) and the waitlist group was 44% female. The mean age of C-PHR+Bridge was 51.64 ($SD=9.37$) and the waitlist group was 49.33 ($SD=10.92$). The race/ethnicities of C-PHR+Bridge participants were 45% biracial, 27% African American, and 27% Caucasian and the waitlist participants were 44% Caucasian, 33% Latino, 11% African American, and 11% biracial. The most common

primary mental health diagnosis for the C-PHR+Bridge group was a mood disorder ($n=9$), followed by schizophrenia ($n=1$), and post-traumatic stress disorder ($n=1$). For the waitlist group, the most common diagnosis was also a mood disorder ($n=7$), followed by schizophrenia ($n=2$). During the study period, 7 participants lived on the street (5 from the C-PHR+Bridge group), 9 lived in supervised housing or temporary shelters (5 from the C-PHR+Bridge group), and 4 had permanent housing (1 from the C-PHR+Bridge group). In the 6 months prior to the study, 25% of the sample had not been to a PCP and 50% had at least one emergency room visit. There were no significant differences in the demographics or clinical factors between these groups at baseline. Two participants in the immediate treatment group did not complete any health navigation activities as they discontinued agency services after completing the baseline assessment.

Intervention character and fidelity

We tabulated in-person and telephone contacts participants had with the health navigator. Participants in the C-PHR+Bridge met with the health navigator an average of 10.11 times ($SD=5.84$; range: 3–23) and had an average of 2.78 phone calls ($SD=3.67$; range: 0–10). During the treatment period for the waitlist group, participants met with the health navigator an average of 10.00 times ($SD=10.38$; range: 2–33) and had an average of 5.67 calls ($SD=5.61$; range: 0–17). Using independent t-tests, there were no significant differences in the number of in-person contacts ($t=.03$, $p=.98$) or phone calls ($t=-1.29$, $p=.21$) that each group received. Nor were there significant differences for in-person contacts between navigators, $F(2,15)=.60$, $p=.56$, or phone call contacts, $F(2,15)=2.23$, $p=.14$. For both groups during the intervention period, there were an average of 10.06 in-person contacts ($SD=8.17$) and 4.22 phone call contacts ($SD=4.83$). Using the WAI, participants rated their relationships with the health navigators highly ($M=6.23$, $SD=.75$) and there were no significant differences for the WAI scores between navigators. The agency's health navigator supervisor, who also evaluated intervention fidelity via biweekly group meetings, provided on-going supervision.

Personal health record use

All participants who met with the health navigator used the portal at least once with the research team. For the full sample, participants logged into the C-PHR system an average of 4.00 times ($SD=2.22$). Participants in the immediate treatment group who completed any study procedures ($n=9$) logged in an average of 4.22 times ($SD=1.72$; range 1–6). Participants in the waitlist group ($n=9$) logged into the system an average of 3.78 times ($SD=2.73$; range 1–9) when they received the intervention.

Between group comparisons

Using an intent-to-treat approach, we compared change scores between the immediate treatment and waitlist groups. We estimated changes in the preferred locus of care, the frequency of care in routine care settings, the frequency of emergency services, the number of health screenings, relationship quality with their PCP, pain, and self-management. At baseline, there were no significant differences for any dependent variables between study groups. Post-intervention, participants in the C-PHR+Bridge group reported a significantly greater increase in visits to a routine care provider (tx: $M=.62$, $SD=.39$) compared to the

waitlist group using independent t-tests ($M = -.11$, $SD = .45$; $t(16) = 3.80$, $p = .002$, $d = .66$). Participants in the C-PHR+Bridge group also had significantly more health screenings (tx: $M = 2.78$, $SD = 2.59$; w: $M = .33$, $SD = 2.92$; $t(16) = 1.88$, $p = .08$, $d = .41$) and a significantly improved relationship with their PCP (tx: $M = -.84$, $SD = .70$; w: $M = .16$, $SD = .97$; $t(16) = -2.50$, $p = .02$, $d = -.51$) compared to the waitlist group. The total score of self-management behaviors, $t(16) = 1.03$, $p = .32$, $d = .23$, pain, $t(16) = -.48$, $p = .64$, $d = -.11$, and preferred locus of care, $\chi^2(1, 18) = 1.29$, $p = .58$, did not change significantly between the two groups. However, the self-management subscale related to communication with doctors improved significantly for the immediate treatment group ($M = .56$, $SD = .79$) compared to the waitlist group ($M = .03$, $SD = .36$; $t(16) = 2.62$, $p = .02$).

Within group changes for both groups during treatment

When the treatment period for both groups was combined, there were significant improvements in participants' health care access, use, and quality of care. Participants' rated their relationship with their PCP as better ($M = -.77$, $SD = .83$; $t(16) = 3.85$, $p = .001$, $d = 1.04$), had more visits to routine care providers ($M = .41$, $SD = .43$; $t(17) = -4.00$, $p = .001$, $d = -.97$), had more health screenings ($M = 2.94$, $SD = 3.49$; $t(17) = -3.58$, $p = .002$, $d = -.87$), and increased total self-management behaviors ($M = .34$, $SD = .46$; $t(17) = -3.09$, $p = .007$, $d = -1.20$). Emergency room visits ($p = .85$) and pain were unchanged ($p = .45$). At the end of intervention period 94% of participants were connected to a PCP.

Associations of C-PHR and contacts

Due to the small sample size of the pilot, direct comparisons of change controlling for the relative associations of contact with the navigator versus use of the portal were not possible. Instead, we tested correlations of the number of times participants logged into the C-PHR and the number navigator contacts with the mean within-person change outcome scores of the combined treatment scores. As there were high levels of positive skewness and kurtosis for the in-person contacts (skewness = 1.65; kurtosis = 2.66), we recoded the frequency of health navigator contacts into a scaled variable of contacts (0 = 1-5, 1 = 6-10, 2 = 11-15, 3 = 16 or more). Results did not differ from those conducted with the full range count variable.

A higher number of logins to the portal was associated with more visits to routine care providers ($r = .79$, $p < .001$), increased health screenings ($r = .44$, $p < .10$), improvement in total self-management behaviors ($r = .50$, $p < .05$), and improvement in the doctor communication self-management subscale ($r = .42$, $p < .10$). In-person visits were associated with more visits to routine care providers ($r = .79$, $p < .01$), increased health screenings ($r = .41$, $p < .10$), improvement in total self-management behaviors ($r = .65$, $p < .05$), and improvement in the after-care self-management subscale ($r = .50$, $p < .05$).

Housing status

Lastly, as being housed may have impacted the response to the intervention, a series of independent t-tests were conducted between those living on the streets and those in housing (supervised or permanent) and their change mean scores while receiving the intervention (combined across groups). Only two outcomes had significantly different change scores related to housing status. The intervention was significantly more effective at reducing pain

for those who were currently homeless ($M=-.51$, $SD=.36$) versus those who were not ($M=.06$, $SD=.52$; $t(16)=-2.25$, $p=.04$). The intervention was also more effective at improving self-management of after-care by those who were currently homeless ($M=.65$, $SD=.45$) versus those who were not ($M=.15$, $SD=.43$; $t(16)=2.11$, $p=.07$).

Discussion

The development and implementation of integrated and collaborative care strategies for individuals with SMI have been the focus of intensive efforts by policy makers, mental health providers, and general medical providers in recent years but progress remains slow (Ward & Druss, 2017). Individuals who also experience housing instability present an additional set of vulnerabilities and challenges (Hwang & Burns, 2014). There are a growing number of peer-delivered interventions on the patient-level that have been tested (with various degrees of rigor) and those that include components of self-management and peer-delivery show the most promise according to a recent systematic review (Cabassa et al., 2017). The results of this study suggest that intensive 1:1 collaboration with a trained peer health navigator combined with use of C-PHR is a feasible and potentially effective strategy for improving the health care outcomes for individuals with SMI and housing instability. However, it is important to consider that participants accessed the record on a limited basis on their own and in interviews reported a preference to use PHR collaboratively with their navigator rather than on their own. This suggests that PHR will be most likely used and effective when it is part of a broader intervention and that PHR use alone is insufficient to engage this population. However, given the paucity of interventions for those with SMI (Kelly et al., 2014a; Cabassa et al., 2017) and unstable housing (Hwang et al., 2005), establishing the feasibility of this adapted intervention is possibly an important step to improving the health of this high need population.

Similar to the results from an RCT on the Bridge (Kelly et al., 2017), health care use and quality improved in the present study. The domains of improvement found in each study differed slightly, which may reflect the individual needs of each sample rather than differences in the effectiveness of the intervention. Notably, self-management behaviors improved during the course of the intervention of this pilot instead of being detected at 6 months post-intervention in the previous Bridge study. This earlier skill development may reflect a) that participants were allowed more time to work with the navigator for the pilot according to their need; b) the greater deficits of skills of the pilot study's participants at baseline, or c) that access to an electronic portal and the greater number of contacts with more personnel activated participants to engage in self-management behaviors sooner.

The navigator intervention and the use of the C-PHR portal were largely associated with the same outcomes, which suggests either some synergy between both aspects of this intervention or that the C-PHR did not uniquely contribute to the intervention's effectiveness. This merits testing in a comparative effectiveness trial in the future. Given that several participants were living on the streets it is remarkable that they were still able to make progress with their health care and there signs that their improvements were greater than for those in housing. This needs to be further explored in a fully powered trial.

PHR use was much lower in this study than in Druss and colleagues' (2014), which provided more intensive resources and support; however, Druss and colleagues did not find changes in self-efficacy for participants as was found in the present study. The lower rates of PHR access in this study could be attributed to multiple factors. The navigators and consumers often logged into the system to track health information collaboratively, which means that participants viewed their C-PHR information more often than was estimated with the portal log-ins. The system could not track how often a navigator logged into the system to view an individual's records but the navigators logged in several hundred times. Collaborative access to the record may have helped to further reinforce rapport building and activation around health and health care for participants. Organizations interested in boosting PHR use by those with SMI may want to consider investments in collaborative access to record to maximize use of this tool rather than expecting independent use. Collaborative access might mitigate some of the burdens of training and supporting individuals to use C-PHR on their own while still fostering empowerment around healthcare.

One of the strengths of this study is that it was carried out in a usual care setting with existing agency personnel. This lends credence to the potential generalizability and implementation of this combined intervention in typical outpatient mental health care settings. The importance of this cannot be underestimated as one criticism of innovative behavioral health interventions for difficult populations is that they often lack portability from research to usual care contexts (Morris, Wooding, & Grant, 2011; Tierney et al., 2007).

Limitations

Several key limitations should be noted about this pilot. As this was a pilot trial to examine the feasibility of adding the use of C-PHR to an existing intervention, the sample size was small. A fully powered RCT is required to test whether the C-PHR+ Bridge intervention is more effective than the Bridge alone. All outcome data from this study are from self-reports. Lastly, some outcomes were not captured in quantitative measures, but were explored in qualitative interviews that were beyond the scope of this paper. For example, several participants had avoided doctors for years due to anxiety regarding adverse results. Confronting those fears by going to the doctor's office, and, in many cases, learning that their fears were unsupported, relieved them of a burden of anxiety. Future evaluations may benefit from including a measure of medical anxiety.

Conclusions

Individuals with SMI face numerous challenges beyond their mental health that can greatly impact their health and quality of life. In order to meaningfully improve their lives, it is critical to develop comprehensive interventions that address their comorbidities and circumstances. The development of self-efficacy and self-management around health and health care are also important aspects of interventions for those with SMI (Schmutte et al., 2009), as engagement around health is vital to their recovery. The Bridge intervention is an effective peer-delivered intervention to address the physical health and health care needs of individuals with SMI, and the adoption of C-PHR strategies may further strengthen its effectiveness. C-PHR should be considered as a feasible aspect of other interventions that seek to improve health outcomes for SMI and homeless populations.

Acknowledgments

Funding: The funding for this study was provided by the Friends of the Semel Institute for Neuroscience and Human Behavior at UCLA.

This study would not have been possible without the efforts of Holly Kiger, Laura Pancake, Peggy Baddin, Steve Danon, Susan Sabo, and Lou Mallory. We would also like to thank our health navigators Yesenia Santana, Cynthia Lopez, and Margaret Castro.

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