Text Message Exchanges between Older Adults With Serious Mental Illness and Older Certified Peer Specialists in a Smartphone-Supported Self-Management Intervention

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Abstract

Objective: To identify the strategies peer specialists use to provide illness self-management support for older adults with serious mental illness (SMI) through text messaging.

Methods: Transcripts of text message exchanges were analyzed between eight older adult participants with SMI who completed the PeerTECH intervention and three older adult certified peer specialists who delivered the 12-week program. Text message analyses explored themes relevant to peer support and health behavior change. Quantitative data comprised frequency of text messages by either the peer or consumer.

Results: Consumers (N=8) had a mean age of 68.8 years (*SD*=4.9) and were mainly women (88%), White (100%), and married (75%). Certified peer specialists (N=3) were all aged 55 years or older, 100% were female, and 66% identified as White and 33% identified as African-American. Overall, peers sent 215 text messages while consumers sent 141 text messages. We identified four themes in the peer specialist-consumer text message exchanges on different aspects of illness self-management, including health behavior change, self-management therapeutic techniques, engagement in health technology, and peer support.

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Conclusions and Implications for Practice: This exploratory qualitative study offers preliminary support that peers are able to use text messages to support the delivery of a peer-delivered home-based medical and psychiatric self-management intervention. Certified peer specialists can potentially provide a range of illness self-management support to older adults with SMI via text messaging. These findings will inform the development of standardized peer text messaging services to augment evidence-based illness self-management interventions for older adults with SMI.

Impact: This study offers preliminary support that certified peer specialists' services can potentially be advanced with the use of text messaging to provide illness self-management support to older adults with SMI.

Keywords

Serious Mental Illness; mHealth; peer support; illness self-management; text messaging

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Since deinstitutionalization of mental hospitals in the 1960s and the successive consumer movement led by former patients in the 1970s, "peer support" has been recognized as a valuable component of consumer recovery[1]. Peer support is not a form of therapy[2]; rather, it is a non-manualized form of social support that is provided by a person living with a mental health condition to others sharing a similar mental health condition to achieve individually identified goals[3]. Peer support interventions delivered in inpatient and outpatient settings have been shown to be feasible and acceptable, with high potential for clinical effectiveness in multiple domains, including hope, sense of personal control, ability to make positive changes, and decreased psychiatric symptoms[4]. Peer support services are typically provided through face to face interactions in clinical settings, the community, or the home[4]. However, the proliferation of mobile health (mHealth) in mental health services has created an opportunity to advance delivery of peer support services beyond traditional approaches. Researchers have used mHealth with peers to promote intervention fidelity, delivery of evidence-based practices, and increase intervention dose without in-person sessions[5]. As researchers increasingly use mHealth to enhance peer services delivery, it will be important to understand how peers interact with technology to optimize peer-delivered interventions. In this study, we examined peers' text messaging strategies to support a home-based integrated medical and psychiatric self-management intervention.

It is estimated that 72% to 93% of people with serious mental illness (SMI), (people with schizophrenia spectrum disorders, bipolar disorder, or persistent major depressive disorder), own smartphones [6,7]. Mobile health interventions using smartphone Apps afford opportunities to promote physical actitivty[8] and assist people with SMI with psychiatric symptom montitoring[9] Peers' role in mHealth services delivery is a largely unexplored service delivery approach. Our prior research has shown peer-delivered interventions enhanced with an App appear feasible, acceptable, and are potentially associated with improvements in psychiatric self-management, self-efficacy for managing chronic health conditions, hope, quality of life, medical self-management skills, and empowerment among adults with SMI and chronic health conditions[5].

Approximately 78% of all mobile phone owners with SMI use text messaging[7]. Initial studies using text messaging for people with SMI have focused on remote symptom monitoring[10], improving functioning[11], delivering appointment reminders,[12] and supporting medication and treatment adherence[13-15]. However, there is little research on the practice of peer to consumer text messaging to support medical and psychiatric self-management among adults with SMI. mHealth could potentially provide support outside of structured clinical environments including real or automated social interactions that are tailored to an individual's goals and delivered through video and audio modalities[16,17].

Despite the rapid progress of research in the emerging field of mHealth with traditional providers, few studies have incorporated mHealth in peer support services[5]. Peers are viewed as role models who have a shared intimate "lived experience", and they offer access to embedded support networks in the community. Certified peer specialists have professional practice standards, including (1) sharing their personal stories of recovery, (2) facilitating learning among those who they support, (3) learning from people that they support and (4) focusing on the person and encouraging people to achieve what they want in life[18]. Unlike traditional providers, these professional practice standards allow for flexibility in the content of intervention delivery (e.g., text message exchanges) within previously described parameters. Identifying and understanding the potential impact of strategies used by peer specialists to support a home-based integrated medical and psychiatric self-management using text messaging can inform the development of peer-delivered mHealth interventions.

We explored the content of smartphone text message interactions between consumers with SMI and certified peer specialists who were engaged in a 12-week in-person peer-delivered intervention augmented by a smartphone App that incorporated a HIPAA-compliant text messaging feature. The intervention targeted training adults with SMI to self-manage their medical and psychiatric illnesses through providing knowledge and skill development in psychoeducation, behavioral tailoring, coping skills training, and motivational interviewing while also allowing consumers to determine and work toward their own self-management goals at their own pace. Findings pertaining to the feasibility, acceptability, and preliminary effectiveness of this peer-delivered mHealth self-management intervention have been reported elsewhere[5]. The present study seeks to expand on this prior work by identifying strategies that certified peer specialists use to support a home-based integrated medical and psychiatric self-management intervention for older adults with SMI.

Method

Study Design and Participants

The study design and recruitment procedures for PeerTECH has been described in a previously published manuscript [5]. Briefly, ten adults with SMI and medical comorbidity (i.e., cardiovascular disease, obesity, diabetes, chronic obstructive pulmonary disease, hypertension, and/or high cholesterol) aged 60 years and older received the PeerTECH intervention in their homes. Eight of these adults completed the intervention and were included in the current analysis. PeerTECH was delivered by three certified peer specialists augmented with a smartphone application over a period of 12-weeks[16,17].

Peer Training

Training of peers was provided over 4-days by the first author, and included: (1) information about physical and mental health; (2) techniques used in PeerTECH; (3) setting goals and actions steps to achieve goals; (4) delivering PeerTECH sessions using eModules on the tablet; (5) the structure of the weekly sessions; (6) using role-play in teaching self-management skills; and (7) orientation to the smartphone application. Each peer had a 2–3 person caseload and worked a total of 10 hours per week including direct care, text messaging consumers, and supervision. Peers were supervised by a trained peer supervisor for one-hour each week. A verbal informed consent to participant as an interventionist in the PeerTECH study was obtained from peers during the peer training.

Research staff met with potential participants in their home with a certified peer specialist and provided an overview of the study, discussed the voluntary nature of study participation and confidentiality issues. If interested, the potential participant completed the written informed consent and could ask any questions as needed. This study was approved by [blinded for review] Institutional Review Board. After the informed consent was completed with the consumer participant, a peer met with a consumer in their home for one-hour each week over a 12-week period.

Intervention

We adapted an evidence-based medical and psychiatric self-management intervention for older adults with SMI-- Integrated Illness Management and Recovery (IIMR)[19]-- for in-person delivery by a certified peer specialist with the use of guided eModules and a smartphone application designed to complement in-person eModule sessions. The eModules are designed to be reviewed on a tablet side-by-side with a peer and consumer during one-hour, weekly, in-person sessions in a community setting. Each eModule includes videos and experiential learning tasks on psychoeducation and coping skills training (see Table 1).

The smartphone intervention portion was designed to reinforce in-person sessions and to provide support to people in real-world environments. Certified peer specialists were instructed to message consumers a minimum of three times a week. There was no maximum number of text messages required. Text message exchanges were to focus on providing peer support, and following-up on goals and discussions during in-person sessions (e.g., "hope you are doing well on your goals-- journaling and walking"). Peers were permitted to text message at any time throughout the day. All text message content was logged and time/date was recorded. Requirements for text messaging were purposely left unstructured in an effort to examine naturalistic interaction between certified peer specialists and consumers with SMI.

Smartphones and data plans were provided free of charge or participants could choose to use their own smartphone. Participants were not provided an incentive to send text messages; however, they were provided $20 compensation to complete baseline, one-month, and three-month assessments (total of $60 over entire study duration). These assessments and related findings were described in detail in a previously published report[5]. Briefly, PeerTECH baseline, one-month, and three-month assessments were associated with statistically

significant improvements in psychiatric self-management and improvements were found in self-efficacy for managing chronic health conditions, hope, quality of life, medical self-management skills, and empowerment. For this study, incoming and outgoing text messages were securely stored within the smartphone App database. Data were extracted into an excel worksheet.

Data Analysis

Text message transcripts were analyzed for eight participants and three certified peer specialists that delivered the 12-week intervention. Our analysis of text message data was informed using the "grounded theory" approach[20]. The codebook consisted of *a priori* peer and researcher-driven codes, derived from interviews and inductively derived codes from qualitative data[20]. The first and second author read data and incorporated new codes and operational definitions from transcript coding, a validated approach which allows for multiple perspectives[20]. Codes were assigned to text, grouped, and checked for themes. Thematic analysis was used to summarize themes identified in the text message data[21]. Analyses assessed within group consensus or disagreement. Member checking was employed to validate qualitative results and resolve any incongruent findings. As such, the lead author contacted the participating certified peer support specialists to discuss the key themes that emerged from the data. This approach helped ensure that these findings are consistent with how the certified peer specialists intended to use text messaging to provide peer support and support health behavior change and self-management among consumers. Quantitative data comprised frequency of text messages by either the peer or consumer participant. Frequency data were captured directly from the App. Frequency data were integrated at the conclusion of the study.

Results

Study Sample

Our sample consisted of eight consumer participants and three certified peer specialists.

Consumer Participants—Consumer participants had a mean age of 68.8 years (range=62–77 years; *SD*=4.9) and were primarily women (88%), White (100%), and married (75%). The sample included people diagnosed with major depressive disorder (63%), schizophrenia spectrum disorders (25%), and bipolar disorder (13%).

Certified Peer Specialists—Certified peer specialists were all aged 55 years or older, 100% were female, and 66% identified as White and 33% identified as African-American . All peers completed the [blinded for review] certified peer specialists training [22] and the certified older adult peer specialist training.

Text Message Exchanges

Peers sent text messages to participants' smartphones based on consumers' preference ranging from 8 a.m. and 10 p.m. on weekdays and weekends. Over the course of the 12-week intervention, a total of 356 text messages were sent. Peers sent 215 text messages while consumers sent 141 text messages (see Figure 1). Consumer participants responded to

51% of the initial text messages from peers (as measured by a returned text message within 24 hours).

We identified a final set of 68 codes relating to four themes in the certified peer specialist-consumer participant text message exchanges. Themes covered different aspects of illness self-management for adults with both mental health and physical health needs. The four themes were: health behavior change, self-management therapeutic techniques, engagement in health technology, and peer support.

Health Behavior Change—The first theme consisting of health behavior change included subcategories including responding to help seeking, reinforcement, promoting self-care, and self-efficacy. Most consumer participants referred to a barrier to receiving support (e.g., a consumer texted "for support if feeling down and holidays can be difficult don't feel there is much support just additional stress"). Certified peer specialists or consumer participants regularly reinforced self-management practices discussed during the in-person session (e.g., a certified peer specialist texted "how did the Managing Stress module help you and what can you use in the future to reduce or to manage your stress?"). Self care was frequently encouraged by certified peer specialists. Peers frequently encouraged consumer participants to take care of their mental and/or physical health through participating in meaningful activities (e.g., a certified peer specialist texted "did you think of something special to do for yourself yet?"). Certified peer specialists or consumer participants referred to their self-efficacy in their ability to self-manage (e.g., a consumer participant wrote "also on a personal note, the types of breathing in the video do not work well for me. But I got that covered").

Self-Management Therapeutic Techniques—The second theme included text messages that were characterized as self-management therapeutic techniques. Peers used empowering text messages to encourage participants to pursue their personalized health and recovery goals that were identified during in-person sessions. This included goal setting, discussions of the interaction between mental health and physical health, and reminders to engage in daily self-management tasks such as watching mindfulness or breathing technique videos, building social supports, and advocating for themselves. Peers were able to monitor completion of daily self-management tasks and physical activity through pedometer readings (e.g., a peer wrote "great to see you in action"). As such, peers used text messaging to follow-up on consumer participants' engagement with the smartphone application (e.g., a peer wrote "glad to see you active on the checklist"). Peers used motivational interviewing techniques via text messaging including responding to change talk, asking open ended questions, providing affirmations, reflections, and summaries (e.g., a peer provided affirmations "as I always have said: You are doing the work. I'm just along for this part of your journey. And It is a pure joy!! To see you doing by leaps and bounds. I'm proud of you").

Engagement in Health Technology—The third theme represented peer specialists' impact on consumer participants' engagement in the intervention and included the subcategories of accountability and scheduling appointments and appointment reminders. Accountability included efforts by the peer to encourage participants to follow-up on in-

person topics related to self-management. This included questions about what activities worked or did not work. Additionally, peers taught consumers how to engage in the text messaging portion of the intervention (e.g., a consumer wrote "I did my first 'SOLO' tonight, THANKS to 'YOU'!!! My first Text Ever!!!"). Peers and consumers frequently used text messaging for scheduling and to coordinate and/or confirm in-person sessions.

Peer Support—The fourth theme was peer support, which included the subcategories of self-determination (i.e., right to determine their own goals), shared knowledge, shared experience (i.e., experiential learning/experiential teaching including psychoeducational resources such as peers sharing their personal experiences with managing diseases. For example, a peer wrote "somebody once told me 'Do you want to be right or do you want to be loved'....I really had to struggle with my un-forgiveness and resentment...I was right but what did that get me ...". An other example reflected reciprocal/mutual support, empowerment. A peer texted "You have the POWER to move forward. It's up to guess who? YOU! You decided who has the power. Are you gonna give to someone else? Or are you in Control of [participant name blinded]? You can't blame anyone YOU have always and will always had the power to keep or give it up!". Shared values and bonding reflecting an attachment or relationship between a participant and a peer was also observed. Bonding included efforts by the peer specialists to encourage participants and vice versa that demonstrated an attachment or a relationship (e.g., a peer wrote "great to spend time with you. happy birthday. I know you enjoyed yesterday, I know you will enjoy today. And you are working on enjoying the rest of your life. you are doing all this for YOU, remember that!!!").

Finally, "social support" included a subset of categories that demonstrated emotional support (i.e., showing empathy, compassion, and concern for another person), informational support (i.e., providing advice, guidance, and feedback), tangible support (i.e., transportation), and companionship (e.g., sense of belonging). For example, text messages reflected peer support when consumers highlighted the value of their relationship with their peer specialist and the importance of receiving support (e.g., a consumer participant wrote to a peer, "you helped me get complete after 42 years. Thank you so much. You are such a caring person and I am thankful we are matched together. I so enjoy being with you").

Discussion

We identified four broad text messaging strategies that certified peer specialists use to support a home-based integrated medical and psychiatric self-management intervention. The four strategies included: health behavior change, self-management therapeutic techniques, engagement in health technology, and peer support. This exploratory qualitative study offers preliminary evidence that peers are able to use text messages to support the delivery of a peer-delivered home-based medical and psychiatric self-management intervention (PeerTECH).

Peers provided reinforcement to complete self-management tasks, and promoted self-care and self-efficacy through text messaging. These strategies align with accepted theories of human behavior and health behavioral change [7]. There has been little research on the use of

peer-delivered text messaging to support medical and psychiatric self-management health behavior change with older adults with SMI. Older adults with SMI are a rapidly growing population with high rates of chronic illness that is associated with impaired functioning and early mortality[23–25], primarily due to chronic health conditions[23]. Self-management skills such as medication management and stress reduction can help to improve physical and mental health outcomes[26]. Peers could potentially use text messages to support health behavior change among older adults with SMI by offering support in completing self-management tasks.

Self-management therapeutic techniques were a common topic in peer and consumer text message exchanges. Both peers and older adults with SMI were willing to share their difficulties with completing daily self-management tasks, try new coping strategies (e.g., mindfulness, guided breathing techniques), build social supports, and advocate for themselves. Self-management skills developed during in-person sessions (i.e., in a controlled environment) appear to have been independently practiced when encouraged by peers' text messages. While older adults have sensitivity to potential age-related changes with respect to memory and attention [27] mastering new skills can be difficult. Peer text messaging around self-management therapeutic techniques appears to have acted as a reinforcement to independently practice self-management skills.

Certified peer specialists' used text messaging to promote participant engagement in self-management activities and behavioral change. Despite the proliferation of mHealth interventions for people with SMI, mHealth interventions are often impacted by low engagement among people with SMI [28, 29]. The addition of a support person in the delivery of mHealth interventions can potentially increase initial and sustained engagement in health behavioral change activities [30]; however, it is not known who or what role the support person should have in the intervention. Initial studies using text messaging for people with SMI have focused on clinician-delivered remote symptom monitoring[10], support functioning[11], deliver appointment reminders[12] as well as medication and treatment adherence[13–15]. With further development and validation, peers in combination with mHealth appears promising for promoting participant engagement in self-management activities and behavioral change.

Peers demonstrated a unique relationship with consumer participants that were grounded in principles of peer support, including mutual support, mutual respect, understanding, affection, trust, and companionship. This type of interpersonal relationship is more commonly experienced between friends or family members, and not typically between a service provider and a consumer. For example, relationships documented between consumers and clinicians through text messaging demonstrated consumers were interested in discussing techniques for coping with mental health symptoms and health behavior change[31]—not relationship building. The impact of social ties between peers and consumers on health outcomes is well known. Examining the mechanistic effect of social ties may elucidate social networks that can potentially support the objectives of peer-delivered self-management interventions.

In interpreting these findings, it is important to consider the limitations of this study. First, it is not known if we met saturation. Customarily, qualitative interviews are conducted until

there is saturation of data (i.e., saturation means that researchers reach a point in their analysis that sampling more data will not lead to more information related to their research questions[32]). By drawing from "grounded theory design" [20], saturation would generally occur with 20–30 participants total[33]; however, the sample size was small as the primary study was conducted to assess feasibility. It is important to note that findings cannot be generalized; however, the themes identified can be used to guide the development of peer support text messaging services as an adjunct to evidence-based interventions. Further, we were unable to stratify our data by demographic characteristics due to the sample size. For example, one peer had a Masters degree in social work, and their advanced educational background likely influenced their delivery of services. Second, peers met in-person with consumer participants over a 12-week timeframe; thus, in-person follow-up discussions from text messages are not reported. Third, the sample included a heterogeneous group of people with psychotic disorders and mood disorders that predominately was comprised of people with major depressive disorder. Fourth, the consumer participants in this study were all receiving mental health services. Therefore, our findings cannot generalize to individuals with serious mental illness not enrolled in care or without access to mental health services. Peer-delivered services using widely available mobile technology may hold promise for reaching and supporting individuals with serious mental illness who are reluctant or unable to seek traditional services. This is also an important area for future inquiry. Finally, the results elucidate common text message themes between certified peer specialists and consumers with serious mental illness; however, it is not known if the peer to consumer text message exchanges can improve self-management and other clinical outcomes. A future study with adequate power and a suitable comparison condition is necessary in order to isolate the impact of text message support on health outcomes.

Despite these limitations, this is the first study to our knowledge that has explored the content of text message exchanges between peers and consumers with serious mental illness in the context of an integrated medical and psychiatric self-management intervention. Our findings demonstrate that certified peer specialists appear to use text messages to promote health behavior change and engagement in health technology, provide peer support and self-management therapeutic techniques. Peer supported text messaging could potentially impact effectiveness of self-management interventions, augment the capacity of peer supported services, and increase certified peer specialists reach beyond traditional service delivery mechanisms.

Acknowledgments

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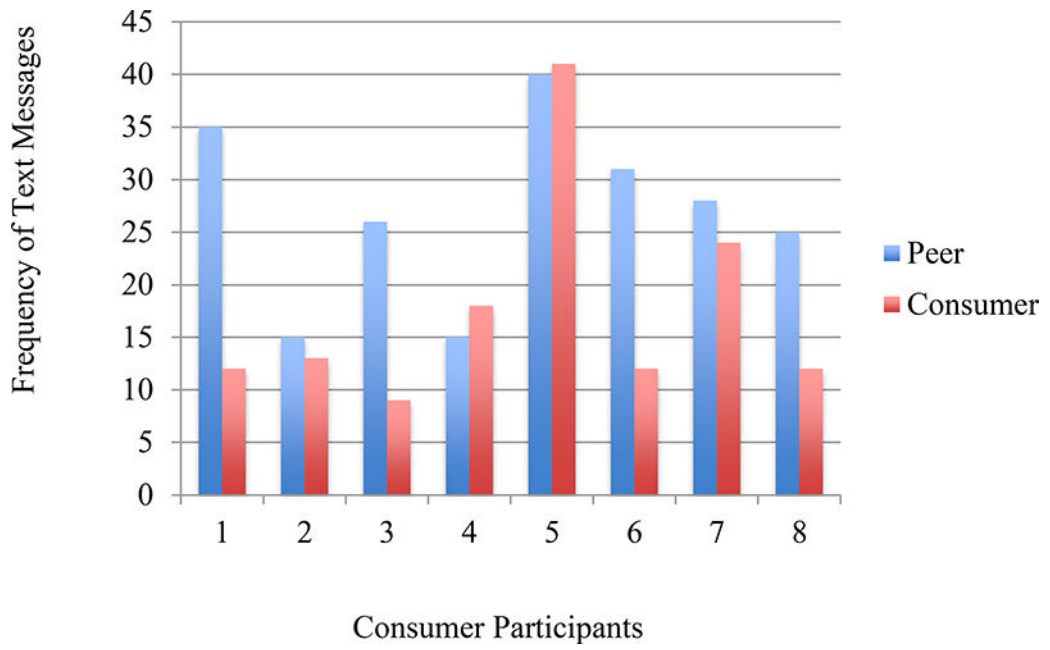
Figure 1.
Aggregated Frequency of Consumer Participant and Peer Text Messages over the 12-week Intervention Period

Table 1.

PeerTECH eModule Sessions

Session 1 & 2 Identifying Your Recovery and Wellness Goals: Setting recovery and health goals and strategies to achieve goals and orientation to the smartphone application;

Session 3 &4 Psychoeducation: Psychoeducation on SMI and medical illness;

Session 5 Stress Vulnerability and Illness: Causes of mental illness and factors that influence its course;

Session 6 Building Social Supports and Recovery and Wellness: How to build social supports;

Session 7 Medication Adherence Strategies: Behavioral tailoring and motivational techniques for medication adherence;

Session 8 Psychiatric and Medical Relapse Prevention: Identify warning signs and develop a relapse prevention plan;

Session 9 Coping with Psychiatric Symptoms and Health-related Stress and Solving Problems: Establish a method managing symptoms;

Session 10 Coping with Stress, Chronic Pain and Medical Symptoms: Identifying stressors that exacerbate symptoms and strategies to cope with stress;

Session 11 Medication Misuse: Addressing medication misuse and the effects on symptoms and functioning; and

Session 12 A Guide to Navigating the Mental Health and Medical Healthcare System: Accessing mental health and medical health services and making informed decisions.