Cyberseminar Transcript

Date: February 11, 2019

Series: Spotlight on Mental Health Centers of Excellence

Session: Developing and Initial Testing of a Mobile App Delivering an Evidence-based Weight Management Program to Veterans with Schizophrenia: CoachToFit

Presenter: Amy Cohen, PhD and Rose Rocchio, MBA

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Molly: And with that we are approaching the top of the hour, so at this time I would like to introduce our speakers. Speaking first today, we have Dr. Amy Cohen. She is the Co-Director in the Health Services Unit at VA Desert Pacific Mental Illness Research Education and Clinical Center, known as MIRECC. She is also an investigator for HSR&D’s Center for the Study of Healthcare Innovation, Implementation, and Policy, and an associate research psychologist in the Department of Psychiatry and Biobehavioral Sciences at the University of California in Los Angeles. Joining her today is Rose Rocchio. She is the Director for the Mobile and Web Strategy Education and Research in the Office of Information Technology, also located at University of California in Los Angeles. So without further ado, at this time I would like to turn it over to Dr. Cohen, and Amy, are you ready to share your screen?

Amy Cohen, PhD: I am, thank you.

Molly: Wonderful.

Amy Cohen, PhD: Hello, everyone. Rose and I are really looking forward to speaking to you today about our project, CoachToFit.

Neither Rose nor I have any relationships or conflicts of interest related to the subject matter that is included in this presentation.

So today’s Cyberseminar is part of a Spotlight Series on VA Mental Health Centers of Excellence, which includes the MIRECCs. The MIRECCs have a shared mission and a shared structure to combine education, research, and clinical care into a single program to dramatically reduce the length of time between scientific discovery and implementation. Each MIRECC has a specific distinct specialization and we have collaborative partners both in terms of clinical research and educational experts across the VA.

Now the particular MIRECC that I’m at is the VA Desert Pacific MIRECC. We are dedicated to improving the long-term functional outcomes of patients with serious mental illness, and our MIRECC includes units on Clinical Neuroscience and Genetics, Data, Neuroimaging, Neuropsychopharmacology, Treatment, Health Services, Education, and Dissemination. We are located across three sites in the VA; San Diego, Long Beach, and Los Angeles, and our Director is Stephen Marder. The project I’m presenting today falls solidly in Health Services.

Today’s plan is for Rose and I to speak to you about obesity and schizophrenia and particularly about mobile delivery of such services to the population with schizophrenia and serious mental illness. We’re going to spend the bulk of the time though talking about CoachToFit. This is our project that we developed a mobile app for, and we are going to talk about its initial testing and results.

So schizophrenia is a most common serious mental illness and the disorder can include a number of symptoms, including positive symptoms like hallucinations and delusions, negative symptoms like alogia, which is decreased thought and speech productivity; anhedonia, which is the loss of the ability to experience pleasure; avolition, decreased initiation of goal-directed behavior; and affective flattening, which is speech with little or no change in tone and facial expressions with little or no change, even if they are talking about something exciting or upsetting. These individuals can also have disorganized symptoms, where you can have speech that has often derailments, can be incoherent, and topics might not seem really connected. Along with this disorder we see a lot of cognitive deficits around attention, memory, information processing, and executive functioning. The prevalence of schizophrenia is 1% of the population, but it accounts for 10% of all permanently disabled people and $22 billion annually in healthcare costs across the country.

The good news is that evidence-based practices for schizophrenia and other serious mental illnesses exist. Unfortunately, many times these practices are not available or they’re available and the population doesn’t use them. So what we end up seeing is that in usual care practice, outcomes are much worse than we would expect from the literature. What I and others, many before me, have proposed is that we need to tailor the practices to the symptoms that I presented and the cognitive deficits that accompany this disorder in order for us to get uptake of these services.

So the causes of obesity in those with schizophrenia are from a complex interplay of genetic and familial risk factors, lifestyle factors, illness related factors, and side effects of psychopharmacological treatments. Lifestyle factors include poor diet, inactivity, and alcohol consumption. Medication side effects include weight gain of up to 10 pounds per month. We assess obesity using Body Mass Index, and once we obtain someone’s body mass index, we can categorize it into one of these categories: underweight, normal weight, overweight, or obese.

So there is significantly higher average body mass index in the population with schizophrenia versus controls. The BMI of those with schizophrenia solidly falls in the obese range with a BMI of 32, whereas those in the control population falls in the overweight range of 27. There’s also significantly larger percentage of the population who is obese in those with schizophrenia versus controls. Look at these numbers: 58.5% of the population with schizophrenia is obese, whereas those in the control population, 27.5%.

So obesity leads to poor outcomes. Many of these are familiar to you, like Type 2 diabetes, coronary artery disease, hypertension, osteoarthritis and chronic pain, dementia, and several cancers. But did you know that obesity in this population also leads to lower medication compliance? Usually this is mediated through feeling very distressed about weight gain, that is what the models show. Also it’s associated with increased psychotic and depressive symptoms, worse clinical outcomes, poorer quality of life, and early mortality. That early mortality can be anywhere from 15 to 20 years early, so this is significant.

So what can we do? So there are really three interventions for obesity in this population. One, change to a different antipsychotic medication with less weight gain potential. Two, augment with a weight loss medication. Or three, provide a psychosocial weight management intervention.

So I want to show you something that we published in 2010. This is a table of the prevalence of problems in patients with schizophrenia and those with no appropriate medication changes. If you look across the X-axis, these are the problems that we looked at: psychosis, extrapyramidal symptoms, tardive dyskinesia, weight, and depression. And if you look on the Y-axis, this is the percent of patients. The black bar are those with the problem and the white bar are those who had no appropriate medication change related to that problem. And given what we’re interested in today, I’d like you to look at the weight. So in 1996, we weren’t looking at this yet, it wasn’t such a serious medication side effect. The second-generation medications were not out yet. But look at 2003. So you have a really high percent of patients with this problem, higher than any other bar, and a matching bar of how many people had no appropriate medication changes related to that problem.

So let’s go back to our interventions. It doesn’t look like number one and number two is really happening. And although those data are from 2010 that were presented in that paper, we found in a recent large-scale VA study with 801 individuals with schizophrenia that only 6% of providers changed patients to a medication with lower weight gain potential. That’s 6% lowered them. Five percent actually switched people to a higher-weight gain potential medication, and 89%, despite all of our education, did not switch the medications. So I would suggest today that we think about providing a very good psychosocial weight management intervention tailored for this population.

So it is also included in guidelines. Individuals with schizophrenia who are overweight or obese should be offered a psychosocial weight loss intervention that is at least three months in duration to promote weight loss. These are from the Schizophrenia PORT Guidelines from Lisa Dixon in 2009.

Now in VA we’re lucky enough to have MOVE! and the problem here is uptake. Less than 5% of overweight Veterans with schizophrenia participate in MOVE!, the VA’s weight management program. And why is that? Well, the VA MOVE! program has numerous handouts, calorie counting, meal diaries. Remember back to the cognitive deficits I talked about early on in this talk; problems with memory, attention, information processing, problems with executive functioning, make these kinds of aspects of MOVE! very challenging for this population. They also tend to dislike group interventions and have travel issues in making it to the VA on a weekly basis.

The good news is that reviews and metanalyses indicate that there are effective psychosocial weight interventions specifically designed for individuals with schizophrenia. In a review of seven randomized control trials, the intervention groups who received these tailored weight interventions were always superior to the control. Individual and group formats were found to be effective. In these trials, the length of the intervention was between three and six months. We saw modest weight loss, on average about six pounds during that period. And although this weight loss might seem very modest to you, without interventions the average patient with serious mental illness or schizophrenia continues to gain weight. And modest weight loss itself has been associated with health benefits.

There are challenges. At the system level, we have limited tracking of outcome data. We don’t have weights necessarily on a weekly basis from these individuals, there is limited space in the hospitals for group interventions. Some clinicians are lacking key competencies to deliver tailored weight interventions for this population, and of course clinicians always have limited time.

Additionally, the patients, as I mentioned before, have the presence of symptoms and cognitive deficits, limited literacy, very limited diet/exercise and cooking knowledge and skills. They are poor advocates for knowing that they need a weight intervention, and again transportation issues.

So I am going to talk you a little bit about mobile delivery of services, and we will start with a poll question.

Molly: Thank you. So for our attendees, as you can see on your screen, we do have the first poll question up. So we would like to get an idea of: How many of the following have you personally used? Smartphone, landline phone, tablet, public computer such as the library, and/or a cellphone that doesn’t have applications. So go ahead and please select the circle right--I’m sorry, your response right there on the screen. And the answer options are 0, 1, 2-3, or 4 or more. And again, just go ahead and click the circle right next to your response on your monitor, and we will wait for those to come through. It looks like we’ve had about a third of our audience reply, so we will give people a little more time. Alright, it looks like we are about 60% response rate, but the answer are still streaming in so we will give people a few more seconds. Okay, I am going to go ahead and close the poll out now and share those results.

So it looks like of our 70% of our respondents, 2% selected 0; 7% selected 1; 65% selected 2-3 devices; and 25% selected 4 or more. So thank you to those respondents and Dr. Cohen, I will turn it back to you now.

Amy Cohen, PhD: So it looks like a lot of us are pretty connected, and what I would suggest when you look at these next data is you’ll see how similar you are to the patient population we’re talking about today. So this is a study by Gay et al., published in 2016 but the data is from 2014, so the data is a little old now, surveying 457 individuals with schizophrenia, non-VA. And if you look at the numbers you just produced in your poll, they are very similar to the percent that these individuals talked about. For example, percent using 2-3 devices. Our group said 65%, this group 61%; 4+ devices, we said 25%, this group said 29%. So we are really all connected.

And in terms of this same sample, if you look at 54% had actually a smartphone, this is a phone that could take an app, and 31% had a cellphone without applications. So we are talking about a good 80% of individuals, 80+ individuals, who have a phone who have schizophrenia. We also did a study within VA and another study outside VA looking at cellphone use and this was including 249 individuals with serious mental illness, including schizophrenia but also bipolar disorder psychotic depression. We found a similar number; 86% had a cellphone and of those, 60% had a smartphone.

And we’re all on them all the time. So that study with the 457 individuals with schizophrenia, you will see here they asked them about how often they were on their personal computers and their mobile phones, 85% of them reported being on at least an hour a day, and of those 48% said three or more hours a day. And this in 2014 data, 66% of individuals with schizophrenia said technology will only become a bigger part of their recovery in coming years.

So mental health apps are a very small proportion of the apps that are out there. This is a table published in 2018 by John Torous and colleagues. John is at Harvard and is one of the major individuals doing research on serious mental illness and apps.

So it’s a small percent but it’s a lot of apps. He estimated in a 2017 paper that there are about 10,000 mental health and related apps out there.

Armando Rotondi, who is at the VISN 4 MIRECC, did one of the most important studies in this area recently, to tell us what do we need to do to tailor apps for this population. He found what we need is plain colors, plain icons and graphics. A shallow hierarchy with only one or two levels past the initial screen, so that individuals do not get lost while navigating in the app. Explicit navigational aids to always help them get back to the menu. A simple presentation of choices, maybe one or two simple columns of buttons per page, and very limited amount of text.

There are already some programs out there. This is a program that is free online that you can get either on your desktop or on your phone and it allows you to track symptoms, your sleep, and it’s for individuals with schizophrenia. What I want you to just sort of take in is how muted the colors are and how you’ll notice that they only have nine tiles, so that fits on one simple screen. There is no scrolling.

This is an app developed by Dror Ben-Zeev, who is at University of Washington, he’s also one of the big developers of mobile apps for this population. Again, this is his program Focus, I want you to just notice how simple it is. Muted colors, six easy icons. It is important to see what people are developing out there.

And this growth in the field has been recognized. The American Journal of Psychiatry is one of our most important journals in psychiatry and you’ll see here highlighted on the cover, this was in August 2017: Smartphones for Smarter Care? Self-Management in Schizophrenia.

So MOVE! also has an app called MOVE! Coach, and here are some screenshots from MOVE! Coach. If you had not had a chance to play around with MOVE! Coach, I highly recommend it. It’s an excellent app, but what you’ll notice is a lot of the things that don’t fit what Armando had proposed for us for this population. You see a lot of colors, it goes very, very deep. There are a lot of handouts. There is a lot of reading. And so I would propose that the MOVE! Coach is for many Veterans but not for those who need tailoring for their cognitive deficits.

We were lucky enough to get a grant to develop a weight management app which we called eWellness. This is supported by a VA HSR&D merit grant and the VA Desert Pacific MIRECC and UCLA Mobilize Labs. So what I’ll start by saying is that throughout the grant we called it eWellness, we did a second submission where it got funded, also called it eWellness. We brought that to a focus group of Veterans with serious mental illness and they said no, we do not like that name. They did not know what the “e” was for, they did not like the idea of wellness, that didn’t make any sense to them or resonate with them. And so when we talked with them in focus groups what we found, the words that they really enjoyed were words like coaching, being coached, they liked that idea. They liked the idea of being fit. And together with them we decided to rename the app through development to CoachToFit.

So CoachToFit is a two-year HSR&D merit to design and conduct initial testing of an app to combat obesity in Veterans with serious mental illness; those with schizophrenia, bipolar disorder, schizoaffective disorder. We used a user-centered and agile development process and we involved peer specialists as wellness coaches. We also linked the app to an activity tracker watch and a Bluetooth scale.

This grant is a true partnership between three groups: Veterans with lived experience with serious mental illness, who know about obesity, disability, and being a Veteran and using Veteran service delivery. Our group here at the MIRECC, who has expertise in serious mental illness, obesity, tailoring services, peer specialists, and of course health services research. And Rose and her group at UCLA, the UCLA Mobilize Labs, who have expertise in mobile development, data capture and visualization, linking devices, the Ohmage server which she is going to talk about, and of course ADA 504 compliance.

In terms of the user-centered design, what did we mean by this? Well, what we mean by this is we used Veterans with SMI through every step of the development process. We started by gathering the VA HSR&D COIN’s Veteran Engagement Group. Our COIN here is the Center for the Study of Healthcare Innovation, Implementation, and Policy. And as I mentioned before, this group along with two other focus groups, really named the app. They also told us about their familiarity with using apps and using their phone and one of the things that they told us was they really did not want it to be stressful. They found a lot of apps to be very stressful and they really didn’t want it to be a competition with other people amongst themselves, they really wanted it to just help them lose weight.

Once we had some initial screens of what the app was going to look like and some initial working app, we did in-lab usability testing with 10 Veterans with serious mental illness, and we gave them specific tasks to try to accomplish with the apps and we kept track of where they got lost and where they had problems. In the room were people from Mobilize Labs, plus content experts from the MIRECC, with each tester.

We also did some experiential usability testing where 37 individuals carried the app for 30+ days while also getting coaching, and we’re going to talk about the results of those in a few minutes.

So now I’m going to hand it over to Rose who’s going to describe a little bit more about the CoachToFit interfaces and app.

Rose Rocchio, MBA: Okay. Hello, everyone. I am going to go through the details of what we ended up building for CoachToFit and deploying. So what you’ll see here is a little diagram that will introduce the CoachToFit interfaces to you. We spent quite a bit of time working on selecting an appropriate watch that would work with both Google Fit and Apple’s Health Kit so that the data could be pulled into the app before being sent up to the data collection hub that we leveraged Ohmage for, which is an open source data repository piece of software. Then we had two different apps; one iOS and one Android, so that was also key and I will talk about that a little bit more. And the other fourth component was a data visualization dashboard for peers that provided real-time data to the peers so that they could provide weekly personalized coaching for the Veterans.

Let me just see if I can advance my slides. Okay. We have a poll question now so I think we are going to put that together.

Molly: Yeah, so for our attendees, as you can see up on your screen we do have the second poll question up. This one you can select all that apply. So we’d like to get an idea: What kind of wearables or sensors have you used? Some of the options are Fitbit watch, Android or Apple watch, Alexa or some other home device, a smart scale, or other. And again just go ahead and select the response right there on your screen. If you are selecting other, feel free to type in to the questions section what that other device is. And it looks like about a quarter of our audience has replied so far, so I’ll give people a little bit more time to get those in. Again, you can select all that apply. Feel free to select more than one. We are at about a 50% response rate so I’ll give people just a few more seconds. Okay, it looks like the answers have stopped streaming in so I am going to go ahead and close the poll out and share those results.

So 48% of our respondents have worn a Fitbit; 18% Android or Apple watch; 23% Alexa or other home device; 11% smart scale; and 27% selected other. And other can also be none. So thank you so much and I will return it back to you now, Rose.

Rose Rocchio, MBA: Alright, so let me just--there we go, show my screen and we will move on to the next. I just wanted to go through that to see what those results were. It’s interesting that Fitbit or a watch that is actually device independent can work with both Android and Apple phones was far and away the selection, the highest selection there. The other thing that’s interesting was only 11% of us had used the smart scale, and that did play out to be a bit more of the complexity when it came to connectivity to the devices.

Okay, so moving on here. So one of the things that was key was the idea that people would use their own devices and not be given a device by the study because people are first of all not very happy to carry a second device, they often forget it, and additionally it is quite difficult to go ahead and learn a different operating system just for the sake of up to a three-month study. So it was important for us to be able to deploy both to the iOS side and the Android Google Play store so that people could their device, their own device that they already have with them and also feel comfortable in that environment.

In addition, another aspect that was important was the iOS side and the Android side often--roughly twice a year--will deploy OS changes which can break this kind of custom development, so by putting these two apps in the store it allowed us to update them should they need a bug fix or something of that sort that would be caused by the OS.

Okay, talking about the CoachToFit app. What you’ll see here is that the design that we worked with in the focus groups, we played toward the muted colors. We went with symbols and tested a few different ones to make sure that they would provide simple navigation with the queues off to the right as you see the little arrow, but actually the users could touch anywhere in those different little bars in the menu so that it would be easy to navigate. We also had color coordination so that they would be feeling like it was a simple app with consistent symbols. We used the feet, as you can see, for checking the steps. We used the scale itself for tracking weight, and the little person who is active symbolized the learning modules, which I’ll get into in a moment.

One more other thing to mention is that these devices actually are advanced in ADA 504 compliance, they provide a reasonable--and better than you would on the web--accommodations, and so we could test both of these apps to make sure they would be functional with the various different components of the accessibility of the devices features turned on. Additionally, we did work hard on color contrast and as I mentioned allowed them to be used with those extra components that provide accessibility.

A core piece of the CoachToFit program is the learning modules that are delivered via the app and there are 30 of them. They come in pairs. There’s 15 nutrition and 15 physical activity. I am going to pull these through because they are actually repetitive. Sorry about that.

And then what we want to talk about focusing here is that each of these modules that are delivered, you will see in the first of the images to the right of the text has a picture of the dashboard where the learning is delivered. And each of the modules, once you click on them, have embedded videos, images, they have quizzes like you’ll see on the right. The quizzes are actually adaptive, so if they get it right they would get happy chimes and if they did not get it right then they have a chance to go back and do it again.

In addition, we have a set of reminders that help prompt the users to come back to the app and there’s a reminder on a Monday that will come out that says you have a new learning set of modules, think about doing your learning. And if they accomplish them then they don’t get the one later in the week that would come out on Thursday which would again remind them, read your learning chapters. Something we did differently based on feedback from the first deployment was deliver the modules slightly differently.

So the first deployment we had the modules delivered on a weekly basis, but they were progress based. So if they had not accomplished their first efforts they would have to sort of skip the following week and not get the next set, and that was confusing for them because they’re used to the self-paced type of learning. So in the second deployment we had the learning modules get released every Sunday evening and that way they would show up as sort of a visual to let them know that there was new learning that they could take on. We did not allow them to skip ahead, so skipping different levels, skipping into let’s say the fourth or fifth week without doing the first, but they did have a visual to show that there were more chapters and they could move through those chapters up to the sort of current place where they should be. So they could play catch up, if you will, which was more successful and provided them more satisfaction.

Talking a bit about the learning goals at the end of each chapter there’s the opportunity for the user to select a goal, one of three goals, and they would track progress doing that goal throughout the week and when they would achieve different levels of their goals they would get a success badge. This again had the happy chime, which the participants enjoyed. There were two additional goal-focused reminders and one would come out on Saturday to remind them to get their weekend steps and then another one would come out that was custom set based on when they should put in their weight. So that was something they did on set up when they first got their app installed, and then that way we were able to get more data points.

And then the assessments, we actually went over this, we saw the picture on the last slide, but the assessments again had the visual. So what happens is you see the little stars on the right. We couldn’t provide a video, we actually thought about it, but it ended up being too difficult to put that into a streaming deck here. But there’s a little sort of animation that comes out when the badges are delivered and it sort of added to the celebratory moment of the success badges.

Okay, so a really critical component is the peer dashboard and the dashboard allowed the coach to see where, at a glance, they had left off with the particular participants. They would click on the study ID to get a detailed view which we’ll show you in a moment. A key component here is to let you know that they were taken through a structured call survey that allowed for consistent delivery of the conversation as well as between the calls and between coaches. Although in our deployment we only really had one coach. So you can also see there were color custom--sorry, there are color-coded status efforts on the right that would lead the coach to know whether they were in sort of good standing with taking and their progress, taking of the modules and the progress, or whether they were getting behind or whether they had fallen behind with the red color.

So the tracking of icons was very useful, tracking of outcomes was very useful. In the first deployment we actually did not have this structured survey but in the second deployment that added a lot of consistency and queues for the coach to know where things had gotten to.

Okay, a bit about the detailed user histories. The two charts that you see at the top of the screen on the right how the weight tracking as well as the step count. These are actually both also delivered in the app and so the conversation can allow the coach to have a nice check-in and congratulate them or encourage them on their progress, and it guided their ability to have real-time data and evidence of their progress. So the personalization feature of the dashboard was a nice thing for the coaches. What the participants do not see in the app is the same visualizations that the peers get which shows the participants progress in the chapters, so they will see where they are, which goals they selected. That allows for a good back and forth and support call to get specifically involved with what is going on with the participant.

Further than that I would mention again one of the things that we refined with the second deployment was this delivery of the chapters and I do believe that that was a very positive refinement that we were able to do. Amy will go into the testing results that we came out with.

I also want to mention the back-end data hub of Ohmage, which is an open-source data repository for research, and it allows these surveys to be taken both on the apps as well as the web-based environment that the peers are in, and it saves all that data. It tags the data, it timestamps, and it does actually also geotag although we were not plotting or doing any mapping with that data. And so Ohmage also has the ability for the researchers to extract any set of data that they want and leverage it in other statistical packages. So that was also very useful. And with that, I’m going to turn it back over to Amy.

Amy Cohen, PhD: Thank you, Rose. So I’m going to finish up today’s Cyberseminar by talking about the CoachToFit experiential testing and results.

So we enrolled overweight Veterans with serious mental illness who own a smartphone. We did cohorts. So as Rose mentioned, we made some changes between cohorts given the feedback by the Veterans and also by the coach, who had a really nice insight into where our Veterans were getting hung up. I actually supervised the coach so we talked a lot of this through during supervision but we also then made changes. Everybody who was in the experiential usability trial had access to the app, they were given the activity tracker watch, and the Bluetooth scale. They carried it for five to eight weeks and we did pre-and-post quantitative and qualitative assessments. They got weekly peer coaching by phone. There were also changes made between cohorts on the dashboard, given the feedback by the coach.

We enrolled 37 people across both cohorts in total. They were largely male, very typical VA sample, largely had schizophrenia or bipolar disorder, 57 years old, pretty even mix of white and African-American, 40% of them were employed, 28% or less had a high school diploma. Interestingly, although we enrolled they could be overweight or obese, the average BMI for this sample was solidly in the obese range and they were one standard deviation worse than the general population on their global physical health and global mental health scores. Seventy-two percent were carrying Android phones and 28% had Apple iPhones.

So in terms of usability, 57% completed five or more modules. Remember, for the most part people carried this anywhere between five and eight weeks, so that means they were doing about one module a week. We had hoped they would be doing possibly two modules a week, so that is a little bit slower than we had assumed. Ten percent completed no modules. Fifty-one percent repeated at least one module, so that means that they went back and went to a module and went over it again. Ohmage is able to track that so that is a really nice feature of this.

In terms of acceptability, many said that they would like to use it often, it was easy to use, they liked how the app, the watch, and the scale worked together. They felt confident. They didn’t think it was complicated, and they felt like it was made for people like them and many of them mentioned how valuable the coach was.

Now we did exploratory and hypothesis generating analyses of change in weight in steps, since we were not powered to look at these. We used a GLM predicting pounds lost by day and there was a significant weight loss by day with an estimate of nine pounds lost over eight weeks. We also predicted weight lost by day, percent weight lost by day and there was a significant percent loss observed with an estimate of 4.5 lost over eight weeks. We also explored changes in physical activity predicting average daily steps per week. Remember, they’re wearing what would be like a pedometer as a watch, but there was no significant change in steps over eight weeks. This was surprising to us and to the coach that these numbers were not significant on that, but what we realized was that the standard deviation was very large in this group. We had several of our participants were janitors here at the VA and so they were walking a lot and we had a lot of people who were just very, very inactive. But we felt in our hearts, during coaching and stuff and looking at the data, that many people from where they were at when they started did increase their number of steps.

So we’ve come a long way. CoachToFit is the first app to be developed using a user-centered iterative process involving individuals with serious mental illness throughout. CoachToFit uses our incredible VA mental healthcare specialist workforce in a new way, as wellness coaches. CoachToFit considerably lessons the burden on the healthcare system by delivering an intervention remotely, with little clinician effort. In fact, the clinician was only the supervisor of the coach. CoachToFit shows considerable promise both in absolute weight loss and percent of body mass loss in this very small sample.

Many individuals in this sample repeated a learning module, and revisiting a special specific topic at a specific time is not possible in an in-person program, but that ability to do this might be a necessary adjustment to adjust cognitive deficits. There needs to be testing in a larger sample and there needs to be enhancements in order to engage users, since some of our users never engaged and other did fewer modules than we would like.

So let me give you a little teaser about where we think we’re going to go from here. So one thing that came out of the qualitative interviews at the end of the experiential usability testing was the idea that they wanted this leaderboard, which was a big surprise to us, because remember what I said about the initial focus groups. They said we don’t want competition, we don’t want it to be stressful, we don’t want anything like that. So we were sort of surprised when several of them said, hey I’d really like a leaderboard--they didn’t call it a leaderboard. I’d really like a way to see where I fit with the other people. Am I making more steps than them, less steps than them? So we said, no problem, we’ll develop something like that. So this is a prototype of a leaderboard we’re thinking about using. The leaderboard will be based on step count for the rolling previous seven days, so people will be enrolled, given the app, and we’ll follow their steps for seven days and then on the eighth day they’ll be placed on a leaderboard.

They will be placed on a leaderboard with others within 1500 steps of their weekly total. This will lessen the stress because there will be people walking about the same amount as them and we’ll limit leaderboards to 10 users and it will be the same 10 users throughout the carry of the app. Users will be consistently identified by a shape so that they can compare themselves with others but not be otherwise identified. So here you’ll see this, this would be within the check steps menu, a leaderboard, 10 members, total steps. You can see where you are and you would always be the star, or whatever your symbol is, and you could always compare consistently to the diamond and the circle, and things like that.

The other two enhancements we’re thinking about is one is to use a poll mechanism to encourage use of the app. Many of you will think that you get these on apps that you have. For example, there will be a message when users have logged in for a specific number of days in a row, like a streak, but then stop using. So a message might say, hey you’ve logged in for three days in a row, make sure and log in before midnight to keep your streak going. Or, if someone hasn’t logged in, it might say, hey we noticed you haven’t visited the app in a few days, we miss you, come back and learn and check on your step count. So many of us get these in other apps that we have and we’re going to include something like that in this app to add to the reminders that Rose brought up.

We will also--I’m thinking about adding a capacity for the peer coach to send encouraging messages through the dashboard that would appear as a push message on the user’s phone. These text messages would have the CoachToFit logo to indicate its source. So in addition to the reminders we have to take a walk and things like that, they would get messages that would be delivered from the coach and these would be delivered whether or not the app is open.

So Rose and I and both of our teams, as well as Veterans, really felt like we wanted to mention that this work builds on a foundation. We want to thank several people: Armando Rotondi from VISN 4 MIRECC, as I mentioned did some of the early work on what kind of tailoring is needed. Richard Goldberg and Julie Kreyenbuhl from the VISN 5 MIRECC, who actually were the first to develop and in-person weight management program specifically tailored for those with serious mental illness and our work builds on that initial work. I wanted to thank Alexander Young and Noosha Niv, who are in the VISN 22 MIRECC with me, who partnered with myself and Richard and Julie to move their in-person tailored weight program onto a--to be used on a computer, and then we built this app based on those initial foundations.

I want to thank Matthew Chinman, who’s now with the VISN 4 MIRECC but was originally here with me in Los Angeles many years ago, and he really sparked my use of peers in delivering interventions. He was the one who really said this is worthwhile, we’ve got to be doing this, this is where it’s at. And he’s right. And Dan O’Brien-Mazza has supported those efforts of Matt and myself and others for many, many years now, and I appreciate that. Sue Raffa, who is the National Program Director for Weight Management, and she and Lynn are at the National Center for Health Promotion and Disease Prevention. They’ve both been very supportive of our work here trying to develop tailored weight services, and Lynn has been very patient with me to tell me all the different ways that MOVE! is delivered, and helped me think about how I can tailor that. So I’ve appreciated that.

And then of course Deborah Estrin, who’s now a professor at Cornell Tech in New York City, who developed the Ohmage platform which we’re leveraging as part of this project. And lastly, I wanted to thank Julia Hoffman, who was the Director of Mobile Health, until about two weeks ago when she separated from VA, but for several years now she has been my go-to person to talk about mobile health delivery within VA, and I have appreciated that along the way.

I will finish just by showing our CoachToFit team and letting you know you can contact us at [vhawlaCoachtoFit@va.gov](mailto:vhawlaCoachtoFit@va.gov), so that is VHA, the letters are for West L.A., CoachToFit at VA.gov. And we are happy to take questions, comments, recommendations.

Molly: Thank you very much. So we do have a couple pending questions and for those of you that joined us after the top of the hour, to submit your question or comment please use the GoToWebinar control panel located on the right-hand side of your screen. Down towards the bottom you’ll see a question section. Just quick the archive next to the word questions and that will expand the dialogue box and you can then submit your question or comment there. I will get to them in the order that they are received.

The first question: How difficult was it to get permission from VA to use Ohmage?

Amy Cohen, PhD: So that’s a really good question. We presented our app idea to the VA Risk Vision group and everybody has to do that, and they certainly had a lot of questions about data being on the Ohmage server at UCLA versus at VA, and so you probably didn’t notice it but the dashboard does not have any names or any identifying information. It only has numbers assigned by the app. So the coach, who sits at VA, then links that subject ID number to her master list that is behind the VA firewall to decide whose information that is. So there’s no data on the Ohmage server that identifies who the individual is. So that’s how Risk Vision felt comfortable and our privacy officer here felt comfortable with our use of Ohmage.

Molly: Thank you. A comment came in: Amazing accomplishment, thank you. I know people it will positively improve. My brother’s needed this for a while. Thank you for that.

Amy Cohen, PhD: Thank you so much for saying that. That keeps us going.

Molly: The next question: I’m sorry if I missed this, but what were the credentials of the coach who worked with your participants? Were they a mental healthcare professional?

Amy Cohen, PhD: That’s a very good question and you didn’t miss it. We didn’t specify it. But our coach is an individual who has lived experience with serious mental illness through being a family member of someone with serious mental illness, and the person is a Veteran as well.

Molly: Thank you. That is our final pending question at the time. While we wait for more to come in, do either of you have any further comments or concluding comments you’d like to make?

Amy Cohen, PhD: I think Rose can speak as well, but I would just like to thank everybody who tuned in today and if this sparked any ideas or ways that you feel like we could make it better, we would love to hear from you. And I do feel like those of us who are trying to deliver mobile health, it’s a small but strong group and I have appreciated help from those people along the way.

Rose Rocchio, MBA: I will second that, as well as also add that it really does make our day when we hear people saying that they think that this is going to be useful for those we’re trying to serve, and so thanks again for that comment. We appreciate the feedback.

Molly: Another person wrote in: Do you have any publications describing this work or further resources we could look at?

Amy Cohen, PhD: So I’ll say two things about that. So the experiential trial just finished and I’ve actually been shopping around to see if anybody would publish this small sample, and so we are writing it up and hopeful that someone will take it. The other thing is if you download the slides, I have several pages of references there from studies that led to this study and supporting the data that I presented earlier, so there are publications there that would be helpful, including the work by Richard Goldberg and Julie in the in-person and then the work by Alex, Noosha, and myself, and Richard and Julie, to try to present it through the internet, so there are references to that in the reference pages.

Molly: Another question came in: The mean age of your sample was upper 50s. Have you considered any strategies to increase engagement with young people with serious mental illness in their weight management interventions?

Amy Cohen, PhD: So we did not necessarily try to get the 50s, in fact we thought that the pilot would do much better with young folks, but it just happened to be that these were the first people who we ended up recruiting who had phones and who were overweight or obese, but certainly we’re very interested in a larger trial that would actively recruit individuals who are younger. I think part of the issue of course is that when people are first ill, when they are young, they’re really trying to stabilize their psychotic symptoms and they are less worried about their side effects. So I think that might have been part of the problem in recruiting the younger folks.

Molly: Thank you. Let’s see, the next question, it looks like we have a comment. This is from the person expressing thanks. They noted that their brother was an at EPA Superfund site and exposed to toxins and developed schizophrenia and his weight has been an issue due to meds, so they do appreciate your efforts which guide on what to keep on track of [unintelligible 53:35] and the weight wasn’t an issue before the meds and that’s a known side effect, so thank you. And I think you mentioned some videos that you wanted to get out to the audience, is that correct? Because I could definitely get those in a follow up email if you have links to those.

Amy Cohen, PhD: We do have a video actually showing the app live. I don’t know Rose, do you want to have that available that people could see that?

Rose Rocchio, MBA: Sure, so we could put that, we could put out the PDF--not the PDF but the PowerPoint version that then has the live video.

Amy Cohen, PhD: Video embedded.

Rose Rocchio, MBA: That would be fine. Sure.

Amy Cohen, PhD: Okay.

Molly: Okay, we’ll discuss offline the best format to get it out in, but yeah, I just wanted to make that known to the attendees that we will be sending you some follow up materials. This session has been recorded and you’ll get a follow up email with a link leading to that recording, so we will see if we can find a way to also make the video available as well.

Amy Cohen, PhD: Great.

Molly: I think that is the last question for now, but we have a few more minutes. I know I asked you before, but do you ladies have anything else you’d like to add before we wrap up?

Amy Cohen, PhD: No.

Rose Rocchio, MBA: No, I think we’re good.

Molly: Well thank you so much for coming on and lending your expertise to the field and of course thank you to our attendees for joining us today. As I mentioned, this session has been recorded and you will receive a follow-up email with a link leading directly to the recording and the handout, so feel free to share those with any of your colleagues that might be interested. With that I am going to ask the attendees to stick around for just a second. I am going to close out the meeting and a feedback survey will populate on your screen, so take just a moment and fill out those few questions. It shouldn’t take long, but we look closely at your responses and it helps us to improve our presentations and the program as a whole, so we appreciate your feedback. So once again, a big thank you to Dr. Cohen and to Rose Rocchio. We appreciate your expertise and we will see you at the next HSR&D Cyberseminar. Have a great rest of the day, everyone.

[ END OF AUDIO ]