Community health workers deliver CBT to uninsured Latinx in Baltimore: Evaluation and Lessons Learned in a Pilot Program

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ABSTRACT

Background Implementation of evidence-based interventions to reduce depression among uninsured Latinx patients who are at high risk of depression are rare.

Objectives: Our goal was to evaluate Strong Minds ©, a language and culturally tailored, evidence-based Cognitive Behavioral Therapy (CBT) psychotherapy intervention for mild-moderate depression, delivered by community health workers (CHWs) in Spanish to uninsured Latinx immigrants.

Methods: As part of the pilot, 35 participants, recruited from a free community primary care clinic, completed Strong Minds. Assessments and post-study interviews were conducted. Paired t-tests were used to assess change of depressive symptoms at 3 and 6 months.

Lessons Learned: CHW delivery of depression care to this population was feasible and among those who completed the program, preliminary evidence of depression outcomes suggests potential benefit. CHWs had specific training and support needs related to mental health care delivery.

Conclusions: Further implementation studies of depression care interventions using CHWs for underserved Latinx is needed.

Keywords: depression, Latino mental health, community health worker, psychotherapy

INTRODUCTION

Uninsured Latinx immigrants, many of whom are undocumented, are a vulnerable group who have limited access to mental health care. Latinx immigrants experience multiple psychosocial stressors that increase their risk for depression. They are more likely to have fewer years of formal education, have fewer economic and social resources, experience discrimination and traumatic migratory experiences and are at least twice as likely to lack health insurance.[1-3] Latinx immigrants also experience acculturation stress that include navigating new environments and unfamiliar social demands, discrimination, and language barriers.[4] Some studies indicate that Latinx immigrants are at risk of depression and anxiety disorders due to exclusionary immigration policies after arriving in the United States [5,6]

The lifetime prevalence rate of depression among Latinx follows that of the general population and some studies report higher rates compared to Non Latinx Whites.[7] Despite the various psychosocial risk factors and resource disadvantages common to immigrant groups that increase risk for poor mental health, there is limited mental health care access and use. Latinx immigrants are less likely to get diagnosed or treated for depression compared to the general population.[8,9] A study found that 94% of Latinx adults in Baltimore who screened positive for depressive symptoms indicated that they did not have a primary care physician and 73% were uninsured in the preceding 12 months.[10] Barriers are numerous and include poor health literacy, stigma, lack of knowledge and culturally tailored and language-concordant services.[11] For those who are undocumented, immigration raids by the US government induce fear around seeking healthcare. [1] A survey found that 39% of the undocumented Latinx adult immigrants expressed fear of receiving medical services because of their undocumented status. [12]

To overcome the numerous barriers, interventions tailored to language and cultural needs are needed to increase access. Studies have found that psychotherapy is acceptable to Latinx[13] and Cognitive Behavioral Therapy (CBT) has been offered in Spanish, delivered by community health workers (CHWs) who are from the community and found to be effective in engaging underserved populations.[14] CHWs are often members of communities who speak the language, understand the cultural norms and traditional practices of the target communities and they are used to deliver interventions for various health conditions. [15,16] Studies suggest that CHW skills of rapport building and professionalism can facilitate strong, positive relationships and lifestyle behavior change in the Latinx population. [17]

CHW interventions to improve chronic disease health outcomes such as diabetes and hypertension are common, but implementation of evidence-based psychosocial interventions in the community for depression are rare and have not been implemented in an insured Latinx population.[18,19] The goal of this study is to evaluate and report the lessons learned during the implementation of an ongoing pilot CBT intervention for depression to increase access to mental health care for this population.

Program Implementation

Community Partnership

This project was a collaboration between Center for Health/Salud and Opportunities for Latinos (Centro SOL) and the Esperanza Center. Centro SOL's affiliation to Johns Hopkins started in 2013 when a private foundation stipulated as part of a grant to Johns Hopkins that matching funding be provided by Johns Hopkins to establish a center on Latinx health. The affiliation includes administrative infrastructure within Johns Hopkins, including grants management, human resources, and program evaluation. Similar to other centers at Johns Hopkins, Centro

SOL operates following its own mission, which is to increase access to healthcare for the Latinx community in Baltimore City through expanded clinical services, advocacy, community engagement, and research. Centro SOL is not an independent non-profit.

Esperanza Center and Centro SOL have been working together to enhance health services for Baltimore's immigrant communities since 2013 when Centro SOL was founded. Esperanza Center is a community-based organization affiliated with the Catholic Charities of Baltimore that provides social, health and legal services to over 12,000 persons annually, most of whom are immigrants from Latin America. The Esperanza Center provides primary medical and dental care to more than 3,000 undocumented immigrants annually and connects patients to mental health and other resources available through Centro SOL's community programs.

In 2019, Esperanza Center and Centro SOL began a collaboration to offer depression care services to uninsured Latinx patients because they recognized a growing need for language-congruent and culturally competent mental health services. Centro SOL sought a culturally tailored, community-based depression care intervention and chose Strong Minds.

The clinical director (KP) of Esperanza Center and the Executive Director (MGV) of Centro SOL and their staff met and communicated regularly to discuss implementation requirements and processes. The executive director at Centro SOL and the intervention team (including CHWs, clinical supervisor and project coordinator) have direct communication with the executive director at Esperanza Center as well as the medical director at the Esperanza Center's community clinic. The Esperanza Center clinic team and Centro SOL's team work together and have regular meetings to ensure the safety of patients and implementation processes.

Decisions regarding the project were informed by the Latino Mental Health Action Network that was comprised of four subcommittees: the Patient, Community, Healthcare Delivery and Evaluation and Dissemination subcommittees (**Figure 1**). Persons with a long-standing collaboration with Centro SOL and identified by organizations serving our target population were invited to join. The members were community members and community and academic-based social and health service providers and researchers. Each subcommittee met regularly and provided feedback on the implementation of the project aims based on their expertise. For example, the patient subcommittee took an active part in providing feedback about the cultural appropriateness of the activities that were part of the stigma campaign. The Healthcare delivery subcommittee advised the Steering subcommittee regarding strategies to address intervention challenges such as recruitment and retention of patients. The CHWs attended and were involved in all stages of the work of the four subcommittees. The committees met quarterly to give input to the Steering subcommittee that made final decisions regarding the direction of the project.

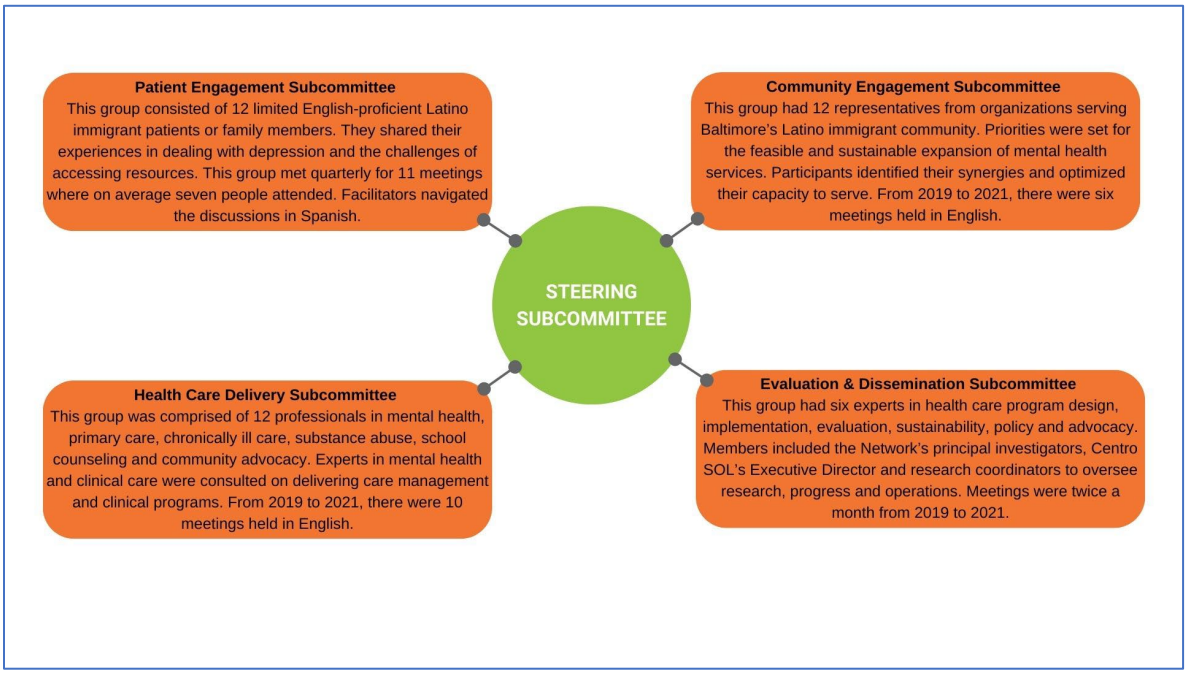

Figure 1. Latino Mental Health Action Network

The Intervention: Strong Minds

Strong Minds is an evidence-based, community-based psychosocial intervention that uses Cognitive Behavioral Therapy, mindfulness exercises and behavioral activation to treat mild to moderate depressive symptoms. It was developed at Massachusetts General Hospital in Boston, Massachusetts for use among patients receiving care within an Accountable Care Organization[20-22] and is different from StrongMinds which is an interpersonal group therapy intervention implemented in Uganda and Zambia. The Strong Minds intervention developed in Boston is designed to (1) increase knowledge about mental health disorders, and their management and treatment, (2) provide strategies for behavioral activation and thought regulation, self-care, assertiveness and communication with healthcare providers, and (3) help the patient to develop a personalized self-care plan. The intervention was presented during the annual conference

organized by Centro SOL in 2019 and was selected by the study team as one of the interventions to address mild-moderate depression among uninsured Latinx individuals.

The program consists of 10 individual, 1-hour sessions delivered by a CHW over a six-month period including two booster sessions if needed. CHWs completed a fidelity checklist after each session. Each session was also audio recorded and reviewed by a clinical psychologist (CS) who held weekly supervisory meetings with the CHW. Clinical oversight was provided by a psychiatrist (JJ). To ensure the safety of patients who express suicidal ideation, a protocol was designed and implemented. This involved an assessment of the suicidal ideation by the CHW using a survey and contacting the clinical supervisor as needed who triaged the situation as appropriate. A psychiatrist was available for consultation as needed. The program was designed to be delivered in person but was delivered remotely due to the COVID-19 pandemic. This study was approved by the Institutional Review Board of Johns Hopkins University.

Recruitment and Training of CHWs

The CHWs were identified from a pool of community members with extensive experience serving the Latinx community. Candidates were interviewed by the Centro SOL executive manager and members of the project team. Candidates were asked to describe their lived experiences with Latinx immigrant families because the candidate's understanding of the challenges faced by Latinx immigrant community were considered integral to their role as CHWs. We interviewed 10 candidates and recruited two, based on criteria such as good communication skills and prior work experience in community settings. One Latina was born in the U.S. and the other immigrated to the U.S. as a young adult. Both were bilingual in Spanish

and English. The CHWs received rigorous intervention training that consisted of didactic and experiential learning and clinical supervision lasting for four to six months (**Table 2**, **Figure 2**).

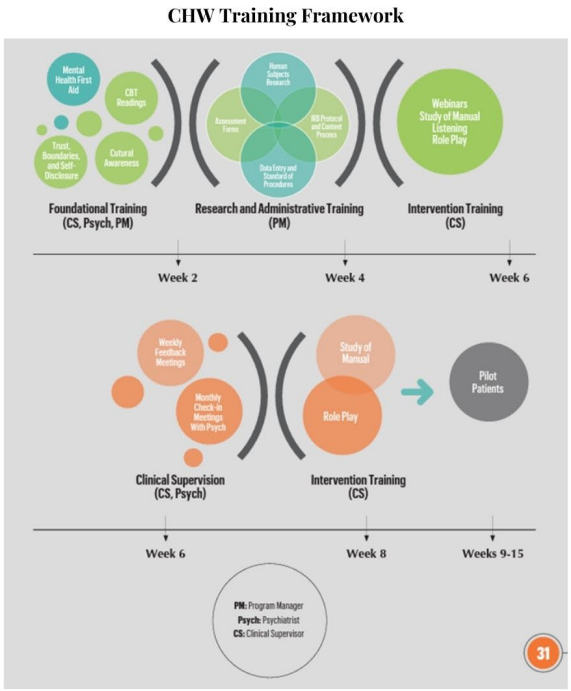

Figure 2. CHW training and supervision

Study Participants

Patients were recruited with the assistance of primary care providers at the Esperanza Center who referred patients with mild to moderately severe depression (Patient Health Questionnaire-9 (PHQ-9) score greater 5 and less than 20). [23] The CHWs screened the patients a second time for depression with the PHQ-9 by telephone. Participants were eligible if they had mild to moderate depressive symptoms, were older than 18 years, identified as Latino/a or from a Latin American country, and spoke Spanish as their preferred language. Those receiving medications were eligible, but those receiving psychotherapy were excluded. The CHWs obtained oral consent from eligible patients. Exclusion criteria included suicidal ideation, post-traumatic stress

disorder, mania or psychosis and active substance abuse. Patients were given incentives to complete the program and received from $60 to $200 depending on the number of sessions completed.

Data Collection

We obtained standard demographic information from patients. Measures that were available only in English were translated into Spanish. The primary outcome was depression as measured by the Patient Health Questionnaire-9. This is an effective and valid tool for diagnosing both major and subthreshold depressive disorder commonly used in primary care settings. [23] We used the Hopkins Symptom Checklist (HSCL-25) to measure change in depression. This instrument measures symptoms of anxiety and depression and has been validated for use among the general population and Spanish-speaking patients.[24] Secondary outcomes included self-efficacy, flourishing and function. The Perceived Efficacy in Patient-Physician Interaction (PEPPI) is a valid instrument in the context of patient physician interactions among older patients. [25] It was used to assess the perceived self-efficacy of the patients in the interaction with their primary doctor. The Flourishing Scale assesses human flourishing in five domains: happiness and life satisfaction, mental and physical health, meaning and purpose, character and virtue, and close social relationships. [26] Lastly, the Disability Assessment Schedule (WHODAS) assesses functioning due to health conditions and is widely used to assess disability among patients with chronic diseases. [27] Assessments were conducted at baseline by the CHWs and at 3 and 6 months by the research coordinator. In-depth interviews were also conducted with a subset of participants to learn more about their experience in the program and how program participation has influenced their lives. Findings from these interviews is forthcoming.

We also collected qualitative program evaluation data. In September 2021, after two years into the program, we interviewed the two CHWs to learn about their experience with the Strong Minds intervention. Interviews were conducted by a medical anthropologist and sociologist not involved with CHW training, supervision, or program delivery. The interview guide followed a semi-structured format and included discussions about the CHW's training, program delivery, relationship with participants, support from the project team members, challenges, and recommendations for improvement. Interviews lasted approximately 1 hour and occurred via Zoom. The interviews were audio recorded with permission from the CHW.

Analytical Approach

Demographic data were analyzed using descriptive statistics. Statistical analysis of measured data was done in Stata using paired t-tests to identify significant differences in the mean scores of the PHQ-9, HSCL, Flourishing Measure, PEPPI, and WHODAS questionnaires at 3 and 6 months compared to scores at baseline. Analysis of quantitative data was carried out with the use of Microsoft Excel and Stata Version 17.1 for Mac. We also conducted audio recorded interviews with CHWs. The recordings were transcribed, reviewed, and discussed by the two interviewers (SG, MM). Following an independent review of the transcripts, the two interviewers discussed the similarities and differences between the CHW responses, and identified key lessons learned that could then be incorporated as improvements in program implementation and training of other CHWs. Qualitative program evaluation data are presented in this article using direct quotes from the CHW, with their permission, to illustrate findings. We also reviewed clinical supervision notes to identify themes about the intervention process.

RESULTS

We provide the results of the evaluation of the Strong Minds intervention and discuss lessons learned below.

Patient characteristics

Eighty-eight participants who met inclusion criteria were referred to the intervention and 59 agreed to be screened and enrolled. The mean PHQ-9 score was 7. Seventeen participants dropped out, with reasons that included lack of time or interest and inability to be contacted. To date, 7 are in the process of finishing the program and 35 have completed the program (**Table 3**). Most participants were women (92.3%) and between 41-50 years of age (53.8%). The majority of the participants reported an educational level of 9th grade or less (57.7%). The country of origin for participants was diverse and the countries of El Salvador, Mexico, and Honduras had the greatest representation (42.3%, 23.1%, and 15.4% respectively). Thirty-nine percent of all participants had spent 5 years or less in the United States, while 1 participant (3.8%) had lived in the United States for more than 21 years.

Compared to the PHQ-9 scores at baseline, mean depression scores at 3 months were 6.4 points lower (CI -8.2;-4.6, p-value <0.001), and mean depression scores at 6 months were 3.9 points lower (CI -6.7;-0.99, p-value 0.012) (**Figure 3**). Mean HSCL scores were 8.6 points lower (CI-11.90;-5.23, p-value <0.001) at 3 months and 5.9 points lower (CI -8.95;-2.84, p-value of 0.01) at 6 months compared to baseline. Flourishing increased at 6 months compared to baseline (12.3 units higher at 6 months (CI 4.04;20.63, p-value of 0.007). Functional impairments decreased at 10.6 units at 3 months (10.6 CI 017.7;-3.6, p-value 0.006) and 8.2 units at 6 months

(CI -13.0;-3.4, p-value of 0.003). Mean flourishing scores at 3 months were not significantly different from baseline (**Table 4**).

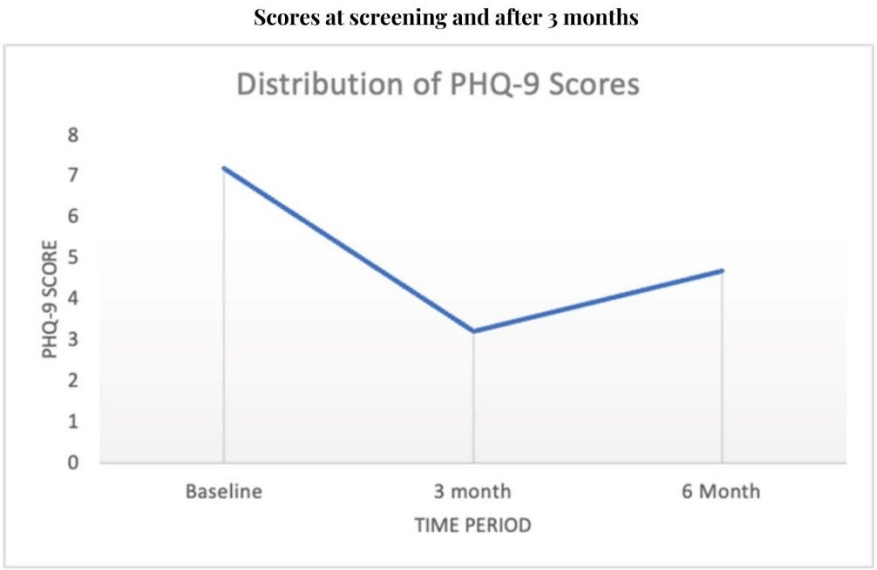

Figure 3. Depression Scores at Screening and 3 Months

Lessons Learned

In addition to quantitative outcomes that showed reduction in depression, interviews with CHWs revealed the need for ongoing training and support of CHW wellbeing, the importance of addressing social determinants of health and establishing effective relationships with patients.

Although the CHWs generally felt prepared to implement the intervention after their training, we learned that introductory mental health training was critical for the CHWs: " I think that was super helpful...just to get a background on what is CBT because, like we don't - we never heard of that so that was really helpful."

As the CHWs began implementing the program, additional training and support were necessary to address challenges as they arose. These additional trainings or supports from the

clinical supervisor, included, for example, communicating without using stigmatizing language, handling suicidal ideation, and grief: "When I was being trained, we didn't know about COVID…things start to come up into sessions about grief and I felt like very unqualified. I didn't feel prepared. And I hadn't learned how to handle that, that was challenging. Then, fortunately, we started doing trainings in grief and trauma on suicide, so that has helped a lot."

Through this process, we witnessed the challenges faced by the CHWs with regard to their own mental health and wellbeing. One of the CHWs had extensive experience working in the community in a CHW role and discussed her previously developed ability to separate her role as a CHW and her personal life. Despite this, the CHW was impacted by participating in this program. As an example, she described a situation in which a participant decided to drop out of the program: "That day, I felt so bad...because I thought that I was doing my best for them…When she text me that I was about to cry, I was like no, no, no this can't be possible. She really needs the program...I was so devastated." Individual sessions with the clinical supervisor became instrumental in helping the CHWs not only to deliver the intervention effectively, but also to discuss their own mental health and wellbeing: "I would tell [the clinical supervisor] like, 'hey I had this session, I'm like triggered by something' and she helped me work through it and sent me to resources and stuff."

The social needs of the patients also impacted the CHWs mental wellbeing and over time they learned to develop boundaries regarding their role in assisting patients outside of the program. "People have many challenges with food, with money… I had some participants that they didn't have glasses…" In the CHWs previous roles, addressing these challenges was a priority: "This is different.…I can find you job, I can do this for you, here is the number. But this

has nothing to do with the [Strong Minds] program." To meet this need, case management services were added, and participants were referred to available services.

The CHWs had to get comfortable establishing boundaries within their roles in the Strong Minds program and allowing case management to assist the patient. The CHWs would at times share basic information for resources when able, given their extensive knowledge of the local community, but had to be clear to themselves and their patients about what they could personally do: "[Patients] would text like 'Oh my son needs a job' or 'Hey can you help me figure this out, my daughter needs a doctor's appointment'…stuff like that we had to manage more careful…You want to set those expectations like this is, this is not really [my role]." This separation of roles was challenging at times and the importance of a well-functioning case management referral system for CHW and patient wellbeing was highlighted.

Discussion

Programs that use CHWs to deliver an evidenced-based intervention for depression to specifically uninsured Latinx persons are limited. Our preliminary evaluation of a CBT intervention for depression delivered by CHWs to depressed, uninsured Latinx persons demonstrated feasibility and preliminary evidence of reduction in depressive symptoms. We used an intervention developed in Spanish for the Latinx community in partnership with a free community primary care clinic and recruited CHWs who are culturally embedded and community-oriented to optimize engagement and feasibility.

CHWs are an accepted workforce that has been utilized to deliver mental health services to underserved groups to improve access and health equity. [15] They represent a workforce that is increasingly part of healthcare teams and is being trained to provide mental health services. A

small number of studies have shown feasibility and acceptability of using CHWs to deliver mental health care in Latinx communities, although the delivery of evidence-based CBT individually by CHWs is rare. [28] CHWs perform a wide range of activities from intervention delivery involving social support and case management to consultation in mental health research. Additional evidence in mental health that demonstrates an effect on outcomes is needed, however. Description of training and supervision are often lacking as is the methodological rigor of existing studies. [29] Furthermore, there are challenges to implementation such as issues with infrastructure, and 'turf' issues with existing staff in the clinic that may pose barriers to implementation in the community. [30]

While the program provides unmet psychotherapy needs for the Latinx population, we note the limitations of this evaluation. The majority of patients enrolled in the Strong Minds program were women so results cannot be generalized to men. The scope of the program to date has been limited with two community health workers and the evaluation did not include a comparison group. The program will continue to provide mental health services, and a future evaluation that includes a larger sample of patients will strengthen the evidence base.

Our study showed the importance of understanding the unique mental health training and supervisory needs of CHWs who are a group with a range of experience and skills. Our study suggests that training in basic mental health concepts, in addition to training in the intervention itself, may be helpful for CHWs, especially those without prior training in mental health. Ongoing education that extends beyond initial training on topics such as relationship building skills and topics such as suicidality and intimate partner violence may be relevant depending on the population served. CHWs may also require emotional support and debriefing as well as training in self-care, to deliver the mental health interventions effectively.[31]

CONCLUSION

In this study, we found that implementation of an evidence-based CBT-based intervention to address mild depression for uninsured Latinx immigrants delivered by CHWs is feasible and found preliminary evidence of benefit. The use of a culturally competent approach using CHWs to deliver depression care may have optimized engagement of Latinx patients. CHWs who deliver mental health services have training and supervisory needs related to relationship building and support for the CHWs themselves to perform effectively in their role.

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Table 1. Description of CHW training

CHW Training	Content (Duration of 4-6 months)
Foundational, administrative and research training	• Orientation to basic skills in mental health eg. building rapport and effective communication • Introduction to psychosocial treatment for depression
Intervention training	**Didactic learning** • Topics include CBT, mindfulness, effective communication and time management skills, mental health disorders, cultural competence, and management of suicidal ideation
	Experiential learning • Role play with simulated patient**:** two-week role play with a simulated patient of 10 sessions that are audio recorded. The psychologist/clinical supervisor reviews all audio recordings and provides corrective feedback to the CHW. • Role play with pilot patients: After the role plays with simulated patients are completed, the CHWs are given 2 actual patients for 10 sessions. The pilot sessions are audio recorded and reviewed by the Strong Mind trainers and the clinical supervisor who provide feedback to the CHW.

Table 2. Patient Demographics

Patient Demographics	**Total (N=34)**[1]	
	N	%
Age		
21-30	3	8.8
31-40	11	32.2
41-50	14	41.3
51-60	6	17.6
Gender		
Male	5	14.7
Female	29	85.3
Country of Origin		
Mexico	8	23.5
Guatemala	3	8.8
El Salvador	11	32.4
Honduras	7	20.6
Venezuela	2	5.9
Colombia	1	2.9
Other	2	5.9
Time Living in the United States		
0-5 years	14	41.2
6-10 years	7	20.6
11-15 years	7	20,6
16-20 years	5	14,7
21+ years	1	2.9
Highest Level of Education		
9th Grade or less	15	44.1
12th Grade or less	12	35.3
University or less	6	17.6
Don't Know	1	2.9

[1]Total includes those who completed the intervention and follow up assessments

Table 3. Change in Depression, Function and Flourishing at 3 Months and 6 Months

Pre-Post Changes at 3 and 6 months							
	Baseline (N=34)	**3 Months (N=34)**			**6 Months (N=34)**		
Measure			Difference[1] (95% CI)	p-value	Mean	Difference (95% CI)	p-value
PHQ-9[2]	7.17+/-4.21	3.19+/-3.91	-6.40 (-8.2;-4.6)	<0.001	4.69+/-5.30	-3.87 (-6.74;-0.99)	0.012
HSCL[3]	23.57+/-5.91	17.17+/-3.92	- 8.57 (-11.90;-5.23)	<0.001	19.19+/-5.97	-5.9 (-8.95;-2.84)	0.010
Flourishing Measure[4]	74.59+/-29.63	88.58+/-23.08	6.63 (-10.2;23.43)	0.414	95+/-13.17	12.33 (4.04;20.63)	0.007
WHODAS[5]	21.32+/-10.47	15.58+/-4.18	-10.63 (-17.68;-3.57)	0.006	18.32+/-7.42	-8.2 (-13.01;-3.40)	0.003

[1]Differences in means displayed are in relation to baseline measures. Calculated via paired t-tests
[2] PHQ-9 Score for Depression
[3] Total average scores from HSCL Questionnaire for Depression and Anxiety
[4] Flourishing Measure Score for Measure of Prosperity
[5] WHODAS Questionnaire for Disability