Amigas Latinas Motivando el Alma: Community health workers deliver a mental health intervention for Latina immigrants in rural Washington

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Abstract

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Latina immigrants in rural settings have limited access to mental health care. Our goal was to pilot test the feasibility of a community health worker (CHW) implementation model in rural Washington for the Amigas Latinas Motivando el Alma intervention, a mindfulness-based mental health intervention previously proven effective at reducing depression and anxiety among Latina immigrants in an urban setting. We recruited 42 participants across two Latino-serving community organizations in Yakima County. The feasibility of a CHW-delivered intervention was evaluated using a pre- and post-test design and fidelity data. Findings suggest participant acceptability of this intervention model. CHW delivery of the ALMA intervention was feasible in this rural setting. Further studies are needed to confirm the efficacy of this model.

Background

ALMA Intervention

Amigas Latinas Motivando el Alma (ALMA) *[Latina Friends Motivating the Soul]* is an intervention to prevent and reduce depression and anxiety in Latina immigrants, which has been found to be effective when evaluated among an urban population in King County, WA.[1] ALMA was developed and evaluated with input from mental health and social service providers, community members, and experts in mindfulness. The ALMA intervention was originally designed to be delivered by trained mental health and mindfulness professionals. It is delivered in a group-format in six weekly in-person sessions.[2] All intervention materials were developed for Spanish-speaking Latina immigrants, and the intervention is delivered fully in Spanish. Participants engage in various mindfulness and social connection activities each session where they learn new coping strategies, enhance their existing social ties, and increase social support. A meal is provided to participants prior to every session. Each session participants are taught a "home practice" to try in between sessions and participants share a reflection the following session. Each session is outlined in **Table 1**.

Table 1: ALMA Intervention Weekly Session Content Overview

Session Topic	Content
1. Arriving, Connecting, Introductions	• Welcome, introduction to the program, and group introductions • Discussion of mental health, stress, and coping • Group Norms: "Acuerdos" • Discussing coping strategies: "herramientas" • Body awareness practice (Relaxation) • ALMA body drawing • Reflection
2. Telling our Stories of Migration	• Breath awareness practice • Song: "Inhalando, exhalando" • Story circles: Sharing our stories of migration • Belly button energizer • Mindful movement: working with emotions in the body • Body awareness practice (Relaxation) • Reflection
3. Stress and Life here in Yakima/Washington	• Song: "Inhalando, exhalando" • Breath awareness practice

	• 'The Tree of Stressors': stress and immigration-related stressors • Sponge activity: Stress metaphor • Mindful movement: working with stress in the body • Body awareness practice (Relaxation) • Reflection
4. Interconnectedness and Support: Coming home to ourselves and each other	• Song: "Inhalando, exhalando" • Spider web activity: Identifying emotions and sources of interconnection and support • Mindful eating: connection with/through food • Body awareness/self-compassion practice • Reflection • Emotion drawings: discussing difficult emotions • Mental health resource handout
5. Working with Challenging Emotions	• Song: "Inhalando, exhalando" • Affirmations for one another • Body awareness and relaxation: self-compassion in difficult times • Movement: Moving through difficult emotions • Self-compassion letters
6. ALMA in our Daily Lives and End of Program Celebration	• Potluck style dinner • Dichos: Reflecting on words of wisdom from loved ones • Song: "Inhalando, exhalando" • Breathe awareness practice • Mindful movement • Body awareness and relaxation • Gratitude circle and celebration

Rural Latina Immigrant Mental Health

Latina women have been reported to be twice as likely as men to experience high levels of depression symptoms.[3] Latina immigrants face compounding and chronic stressors, such as discrimination and poverty,[4–6] which are associated with high levels of depression and anxiety.[7,8] There are also multiple barriers to accessing mental health services for Latina immigrants, including stigma and cost. Undocumented Latina immigrants in the United States face additional stressors and barriers to accessing physical and mental healthcare due to their immigration status.[9,10] Latinas in rural areas have been found to have disproportionate mental health issues. For example, rural Latinas had greater risk for depression if they experienced a high level of stress, and significantly increased odds of experiencing

postpartum depression compared to white mothers.[11] Furthermore, Latina immigrants living in rural areas are at higher risk for depression and anxiety due to social and economic stressors, and significant barriers to accessing quality mental health services including limited mental health care provider availability.[12] Latinas in rural regions have a lack of access to health education which contributes to decreased health literacy.[11] Rural Latinos have reported viewing mental health as a major concern, but report challenges accessing mental health care.[13] Innovative approaches to prevent and reduce depression and anxiety among Latina immigrants living in rural areas are needed.

Yakima County

Yakima County is a rural agricultural region with Latinos comprising 53% of residents.[14,15] About 19% of the county's population are immigrants, which is higher than the national average of about 14%.[16] In a 2022 community health needs assessment, over 70% of respondents to a community survey identified mental health as one of the top three areas in need of focus over the next three years in Yakima County.[17] Furthermore, Latinos and immigrants were both identified as groups experiencing health disparities.[17] Yakima County has a need for more mental health resources, especially those targeting Latino immigrants.

Two community-based organizations (CBOs) in Yakima County, Washington, La Casa Hogar and Nuestra Casa, expressed interest in having their staff trained to deliver the ALMA intervention to their clients given the urgent need for mental health support in their communities. La Casa Hogar and Nuestra Casa are both trusted organizations in their communities which offer various educational programs, workshops, and referral services for Latino immigrants. Representatives from both organizations reached out to the Principal Investigator after hearing her presentation about the ALMA intervention at a local conference. We initiated the collaboration by meeting with La Casa Hogar and Nuestra Casa staff to share further information about ALMA and results of the intervention trial conducted in King County. We then offered to provide an online version of ALMA to their staff so they

could become more familiar with the intervention and assess whether it would be a good fit for their clients. Both La Casa Hogar and Nuestra Casa expressed high satisfaction with ALMA, and we offered to train 2-3 staff members from each organization to facilitate and disseminate the ALMA intervention to their communities.

Community Health Worker Model

Community health workers (CHWs), also known as *promotoras(es)* and lay health advisors, are an effective way to supplement resource limited-areas, reduce the demand on the healthcare system, and increase mental health support access outside traditional care.[18–20] CHWs can help reduce health disparities by providing services outside typical clinical settings.[19] Roles of CHWs in the literature have been documented most frequently as making referrals and updating medical teams, but also include providing education, mediators between individuals and the healthcare system, and as interventionists in mental health research.[21,22] Mental health interventions delivered by CHWs have been found to be acceptable to participants.[20,23] We sought to train staff members from our partner CBOs in Yakima County to serve as CHWs and facilitators of the ALMA intervention. CHWs are suitable for this role as they build upon a community's existing strengths and resources and are trusted members of their communities. CHWs' position as peers can increase participant's comfort and rapport when compared to traditional health providers,[24] and help reduce stigma associated with mental health.[22] Additionally, CHWs have been reported to express confidence and acceptability in task-shifting and delivering mental health interventions with proper training.[25,26] We set out to pilot test the feasibility of the implementation of the ALMA intervention through this CHW model among Latina immigrants living in Yakima County.

Intervention Adaptation

To inform the adaptation of the ALMA intervention and training development, we conducted feedback sessions with 10 CBO staff who had previously completed the online ALMA program. The

feedback sessions occurred over Zoom and were led by bilingual research team members. Our interview guide included questions such as “What was most impactful for you about the ALMA program?”, “Is there anything you think would be more or less impactful for your clients?”, “What kind of support would you need to facilitate the ALMA program?”, and “What kind of support would your clients need to participate in the ALMA program?”. Responses from the focus groups were grouped into themes and sub-themes. We used the information learned from these conversations to develop a training and implementation plan so that La Casa Hogar and Nuestra Casa could offer ALMA to their communities. Overall, the feedback session participants reported enjoying the intervention as it was and had no major suggestions for changes. They reported wanting to deliver the in-person intervention in six sessions. Participants did report wanting to have a list of mental health resources ready to give to future participants in need, and access to a mental health counselor to support facilitators and participants. Following the feedback sessions, we identified five staff members from both organizations who wanted to participate in the facilitator training process. We developed a training manual and a curriculum for online and in-person training. We also identified further mental health resources in Yakima County to which ALMA participants could be referred to by the community partners if needed.

Facilitator Training Process

We trained staff from both CBOs, three from La Casa Hogar and two from Nuestra Casa, to deliver the ALMA intervention. Four out of the five staff members had previously participated in the online ALMA intervention. All the staff members that received the training are Latina and Spanish-speaking with several years of experience serving Latina immigrants through their CBOs. The staff members also had previous experience facilitating educational programs for community members. The mean age of the facilitators was 44.8 years. All were born in Mexico and had at least a high school diploma or equivalent. The facilitators had lived in the US for a mean of 26.0 years, and in Yakima County for a mean of 25.0 years. Four out of five of the facilitators had worked in their CBO for less than 5 years.

The CHW training consisted of online and in-person components and was followed by ongoing support meetings (see **Table 2**). The two research team members who led the training have mental health and mindfulness expertise, developed the ALMA intervention curriculum, and co-facilitated the ALMA program in King County. The research team provided each CHW with a physical training manual which included detailed scripts and instructions on the content of each ALMA session, logistics tips, and lists of session materials. The online training was delivered as seven weekly 2-hour sessions focused on reviewing the content of each session and discussing the ALMA practices. The first session offered an introduction to the ALMA program and to facilitation principles. In each subsequent session, we reviewed one ALMA session and practiced facilitating the activities in that session while continuing to touch on the facilitation principles articulated in our introductory session. The CHWs were supported and encouraged in developing their strengths and capacity as facilitators, preparing for sessions, providing mental health support to participants, and monitoring intervention fidelity.

Following the seven online sessions, we offered a two-day in-person training "retreat" during which the CHWs had an opportunity to practice, discuss, and lead ALMA activities and practices amongst each other. The in-person training's main goals were for the CHWs to continue familiarizing themselves with the curriculum, to develop their strengths and capacities as facilitators, and to bond with their facilitation team in order to fully embody the ALMA curriculum and make it their own. The research team provided feedback on how the CHWs set-up and led the program activities. Following the training, the research team met with the CHWs weekly during the time they delivered the intervention to their communities to debrief how the intervention session went, prep for the following week's session, and offer ongoing coaching and mentorship. We provided materials to both community organizations to use for the program delivery, such as yoga mats, paper handouts for the various activities, and laminated posters of the song lyrics and those needed for specific activities. The community organizations provided their staff with work time to participate in the facilitation training and to deliver the intervention.

Table 2: CHW Training Process

Pre-Facilitation of ALMA		**During Facilitation of ALMA**
1) Seven-week online training	**2) Two-day in-person training**	**Ongoing Support Meetings**
Week 1: Introduction to ALMA and facilitation principles	Day 1: • Opening, welcome, connecting (song and intentions) • What is ALMA? • Practicing Facilitation • Lunch • Practicing Facilitation • Snack and Mindful Eating • Closing and Reflections	Weekly meetings to prep for the upcoming session and debrief the previous session
Weeks 2-7: Review of six ALMA sessions	Day 2: • Welcome back (Brief reconnecting and song) • Practicing Facilitation • Lunch • Practicing Facilitation • Snack and Affirmations Activity • Closing and Gratitude Circle	

Project Aim

We aimed to pilot test the feasibility of a CHW implementation approach using a pre/post-test study design and fidelity data. We will use the findings to assess whether the intervention needs to be further adapted for the local context of Yakima County and assess the feasibility of implementing the ALMA intervention using a CHW model compared to when mental health and mindfulness experts deliver ALMA.

Methods

Participant Recruitment and Data Collection

The research team provided the CHW facilitators with recruitment materials and talking points to share with potential participants. Eligible participants included women 18 years of age or older who self-identified as Latina and spoke Spanish fluently. CHW facilitators from La Casa Hogar identified

participants from among the staff at their organization for Group 1, and from among their clients for Group 2. Participants were identified by the CHW facilitators from their clients at Nuestra Casa. Each participant was asked to complete a survey before the intervention began (baseline) and a second survey after they completed the intervention (post-intervention/T2). Surveys included questions on demographics, depression, anxiety, mindfulness-based coping strategies, and social support. The post-intervention survey included additional participant satisfaction and skills learned questions and excluded the demographic questions. Surveys were conducted over the phone by a bilingual and bicultural data collector. All participants provided verbal consent to participate in the study.

Demographic Characteristics

Participants provided demographic information including country of birth, years in the USA, years in Yakima County, age, marital status (living with partner or not), highest level of education completed (high school degree or equivalent or less), employment status (currently working or not), previous month's household gross income, household size (total, adults, and minors), total number of children, and clinic where they seek healthcare (if any).

Mental Health Outcomes

Depressive symptoms: Depressive symptom severity was measured with the Patient Health Questionnaire-8 (PHQ-8), a version of the Patient Health Questionnaire-9 (PHQ-9) which excludes the suicidal ideation question. This 8-item scale asks how frequently participants experienced common symptoms of depression in the past two weeks. Response options range from never (0) to almost every day (3). Total scores of 10 and over are categorized as moderate to severe. The PHQ-9 has been evaluated among racially and ethnically diverse populations, including Latinos, and found to effectively detect and monitor depression.[27]

Anxiety symptoms: Anxiety symptom severity was measured with the Generalized Anxiety Disorder-7 scale (GAD-7). This 7-item scale assesses the frequency of common anxiety-related symptoms over the

past two weeks. Response options range from never (0) to almost every day (3). Total scores of 10 and over are categorized as moderate to severe. The GAD-7 has been found to have good reliability and validity among Spanish-speaking Hispanic Americans.[28]

Implementation Outcomes

Participant Satisfaction: Participants were asked 12 questions with 5-point Likert-scale answers from completely disagree to completely agree about their experience in the program including logistics, perceived efficacy, and social environment. Participants were also asked two open-ended questions: 1) What is a change you would like to see in this program, and 2) What did you find most valuable about this program. This measure was developed for the ALMA intervention.

Skills learned: Participants were asked 9 questions about the frequency they utilized the skills taught during ALMA in their everyday lives. Response options used a 5-point Likert-scale ranging from never to almost every day. This measure was developed for the ALMA intervention.

Fidelity: We assessed intervention fidelity using a two-part approach consisting of a short weekly survey completed by the trained CHW facilitators and notes from our weekly support meetings. Facilitators completed the survey that included participant attendance and open-ended fidelity questions (i.e., *was there something unusual or unexpected with the session*, and *were you able to complete all the session components*) after each session. Their survey responses were used as a jumping off point to debrief the sessions during the support meetings. The only exception was the first session's survey, which was completed with research staff assistance during the support meeting to model what sort of information we were looking for in their responses.

Data Analysis

We used descriptive statistics to describe the program participants, their participation in the ALMA sessions, and their satisfaction with the program. We also assessed changes in their depression and anxiety symptoms from before and after the intervention by calculating means and standard

deviations. We also assessed changes in mental health outcomes before and after the intervention using means and standard deviations. We conducted all statistical analysis using StataBE 18.

We described whether the facilitators completed all components of the curriculum for each session using data from the short weekly survey and support meeting notes. If components were missed, we will describe which component(s) and why. We will also review the support meetings notes and open-ended responses to the weekly RedCap survey for themes regarding the curriculum implementation to identify future recommendations. We expect to capture themes about what went well during sessions, what did not go well, factors for missed components, and modifications to activities.

Results

Participant Characteristics and Attendance

We present descriptive statistics for the participant characteristics in **Table 3** (N=42). The sample had a mean age of 45 years. Most participants were from Mexico (90%), had lived in the USA for 17 years and in Yakima County for 14 years on average. Most had less than a high school degree or equivalent (64%) and were currently not working (69%). The mean monthly gross household income was $2,744 USD. Most participants reported living with a partner (64%) and reported Yakima Valley Farmworkers Clinic as their regular source of care (57%). The mean baseline depressive symptoms score was 7.7 and the mean baseline anxiety symptoms score was 6.8, indicating mild severity for both.

Table 3: Participant Characteristics (N = 42)

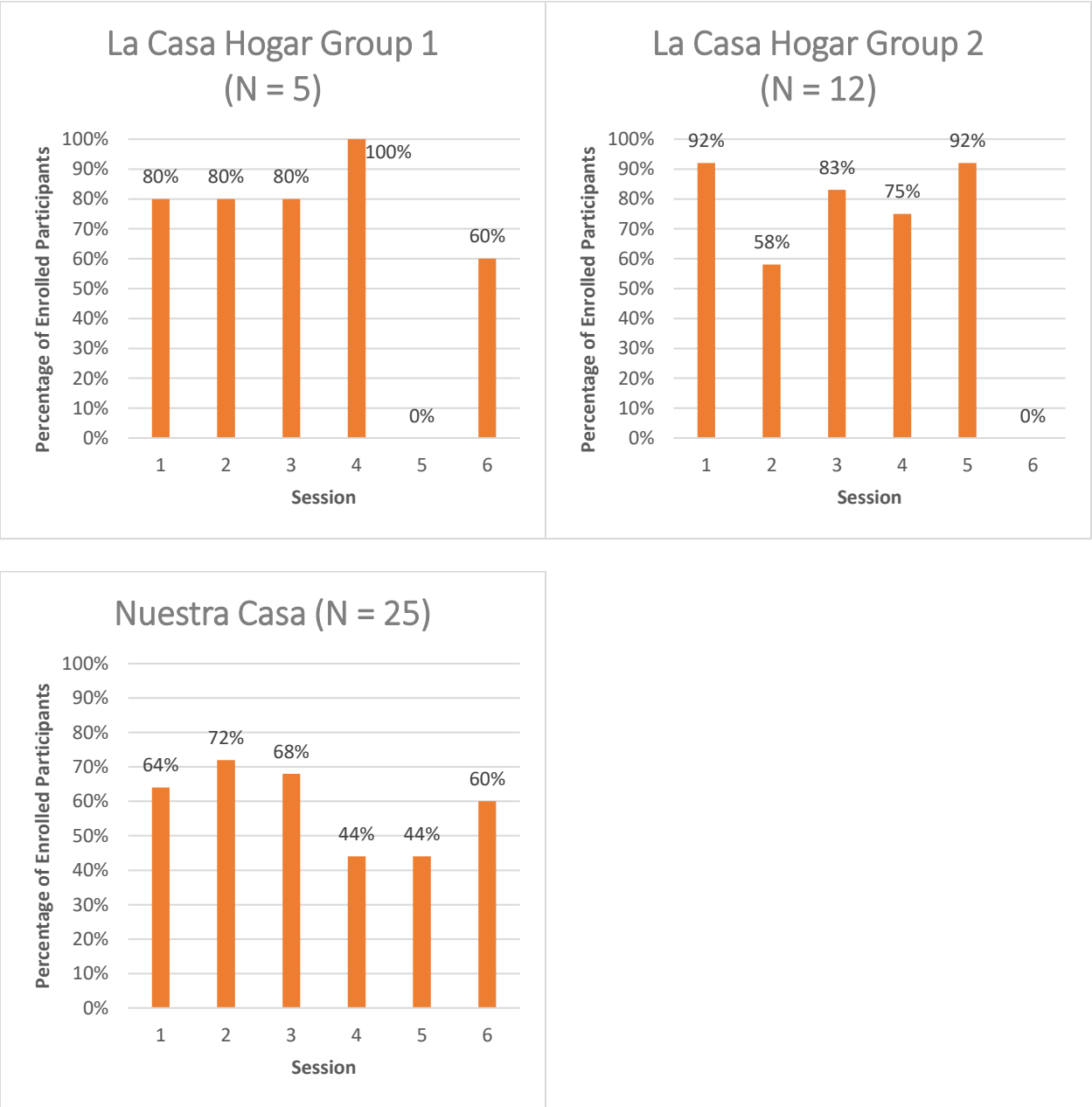
	Overall (N = 42)		La Casa Hogar Group 1 (N = 5)		La Casa Hogar Group 2 (N = 12)		Nuestra Casa (N = 25)	
Demographic	**N/mean**	**%/SD**	**N/mean**	**%/SD**	**N/mean**	**%/SD**	**N/mean**	**%/SD**
Age	45.2	12.9	45.6	8.4	44.7	9.6	45.3	15.1
Under 40	18	43%	2	40%	4	33%	12	48%
40+	24	57%	3	60%	8	67%	13	52%
Years in the USA	16.8	9.7	22.4	9.2	18.4	8.0	14.8	10.2
Less than 10	12	29%	1	20%	2	17%	9	36%
10 to 20	15	36%	1	20%	5	42%	9	36%
20+	15	36%	3	60%	5	42%	7	28%
Years in Yakima County	13.8	9.2	21.4	8.4	13.3	7.5	12.6	9.6
Less than 10	15	36%	1	20%	4	33%	10	40%
10 to 20	16	38%	1	20%	5	42%	10	40%
20+	11	26%	3	60%	3	25%	5	20%
Country of Birth								
Mexico	38	90%	5	100%	10	83%	23	92%
Other	4	10%	0	0%	2	17%	2	8%
Education								
High school degree or higher	15	36%	5	100%	5	42%	5	20%
Less than high school	27	64%	0	0%	7	58%	20	80%
Monthly income [a]	$2,744	$2,640	$7,600	$4,561	$1,989	$1,099	$2,110	$1,442
Employment Status								
Currently working	13	31%	5	100%	5	42%	3	12%
Not currently working	29	69%	0	0%	7	58%	22	88%
Partner living in the home								
Currently living with partner	27	64%	4	80%	8	33%	15	60%
Not living with partner	15	36%	1	20%	4	67%	10	40%
Household Size	4.4	1.9	4.2	2.3	3.8	1.2	4.7	2.0
Adults	2.7	1.1	2.8	0.8	2.3	0.8	2.8	1.2
Minors	1.8	1.3	1.4	1.7	1.4	1.2	2.0	1.3

Total number of children	3.1	1.7	1.8	1.1	3.1	1.2	3.3	2.0
Clinic where participant seeks care								
YVFWC	24	57%	3	60%	8	67%	13	52%
Other	12	29%	1	20%	4	33%	7	28%
None	4	10%	1	20%	0	0%	3	12%
Unspecified	2	5%	0	0%	0	0%	2	8%
Baseline PHQ-8 score	7.7	5.5	11.2	7.8	7.6	3.8	7.0	5.6
None (0-4)	13	31%	1	20%	2	17%	10	40%
Mild (5-9)	18	43%	1	20%	7	58%	10	40%
Moderate (10-14)	7	17%	1	20%	3	25%	3	12%
Moderately Severe (15-19)	3	7%	2	40%	0	0%	1	4%
Severe (20-24)	1	2%	0	0%	0	0%	1	4%
Baseline GAD-7 score	6.8	5.2	7.4	5.1	6.5	0.7	6.8	5.9
None (0-4)	17	41%	2	40%	4	33%	11	46%
Mild (5-9)	12	29%	0	0%	5	42%	7	29%
Moderate (10-14)	9	22%	3	60%	3	25%	3	13%
Severe (15-21)	3	7%	0	0%	0	0%	3	13%

[a]Asked as "previous month's gross household income." One (1) person is missing from the Nuestra Casa group who refused to answer.

Participant attendance for each session of the intervention is shown in **Figure 1**. La Casa Hogar cancelled one session each time they delivered the ALMA intervention, resulting in 0% attendance for session 5 in Group 1 and session 6 in Group 2. Out of the sessions delivered, attendance for the La Casa Hogar Group 1 ranged from 60-100% (N = 5) and from 58-92% (N = 12) for Group 2. Nuestra Casa delivered all six sessions to their group, and attendance ranged from 44-72% (N = 25).

Figure 1: Participant Attendance



Participant Satisfaction

Participants reported high levels of satisfaction with the ALMA intervention overall (see **Table 4**). Overall program satisfaction scores ranged from 4.7-4.8 out of 5 and all groups reported that they would recommend the program to others. Participants also rated the time and duration of the sessions as convenient overall with a mean score of 4.5 (±0.7). Overall perceived efficacy was also high with mean scores ranging from 4.5-4.7 and most participants reported that ALMA helped them find new strategies to reduce stress in their lives. While most participants did not suggest any changes to the program, one change participants did report wanting was to have more time during activities to share and process emotions. In addition, participants from La Casa Hogar reported wanting more sessions or longer sessions. Aspects of the program that women found most valuable included relaxing during the sessions, learning relaxation strategies, and increased self-esteem, self-compassion, and self-care. The aspect of ALMA that was most often noted as being most valuable was the social support they received. Examples of this include feeling understood and less alone, realizing they had similarities to the other women in their group, and being able to share their stories and spend time with other women.

Table 4: Participant Satisfaction (N = 36)

	Overall (N = 36)[a]		La Casa Hogar Group 1 (N = 5)		La Casa Hogar Group 2 (N = 12)		Nuestra Casa (N = 19)[a]	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
Program Satisfaction								
I would recommend this program to my friends, family, or other women	4.8	0.4	5.0	0.0	4.8	0.4	4.6	0.5
I think the information provided was relevant for women like me	4.7	0.5	5.0	0.0	4.7	0.5	4.7	0.5
I liked the ALMA program	4.8	0.4	5.0	0.0	4.8	0.5	4.7	0.5
Program Logistics								
The time and duration of the sessions was convenient so I could participate	4.5	0.7	4.6	0.6	4.3	1.0	4.6	0.5
Perceived Efficacy								
ALMA helped me manage stress	4.6	0.6	4.8	0.4	4.6	0.5	4.5	0.6
ALMA helped me recognize difficult emotions	4.5	0.6	4.6	0.5	4.6	0.5	4.4	0.6
ALMA helped me feel self-compassion	4.6	0.5	4.6	0.5	4.6	0.5	4.6	0.5
ALMA helped me feel less alone	4.6	0.5	4.8	0.4	4.5	0.5	4.6	0.5
ALMA helped me relax	4.7	0.5	4.8	0.4	4.7	0.5	4.7	0.5
ALMA helped me learn how to relax	4.6	0.6	4.4	0.5	4.8	0.5	4.5	0.6
ALMA helped me find new strategies to reduce the stress in my life	4.6	0.6	4.8	0.4	4.8	0.5	4.4	0.6
The information that I received in the program helped me improve my mental health	4.5	0.6	4.6	0.5	4.6	0.5	4.4	0.6

[a]Six (6) enrolled participants not included in Nuestra Casa group data. 2 were lost to follow-up, and 4 did not attend any ALMA sessions.

Intervention Impacts

Overall changes in PHQ-8 and GAD-7 scores from pre- to post-intervention are shown in **Table 5**. The mean PHQ-8 score went from 7.7 (±5.5) pre-intervention to 4.5 (±4.6) post-intervention, indicating mild severity at both timepoints. The mean GAD-7 score went from 6.8 (±5.2) pre-intervention to 3.8 (±4.6) post-intervention, indicating a decrease from mild severity to "none" post-intervention. Participants overall reported using the skills they learned in ALMA about "several times a week" (equivalent to a score of 3.0) (see **Table 6**). Other intervention skills that participants reported using included singing and spending time in community (such as spending time with other immigrant women, family, or at church activities, and sharing their feelings with others).

Table 5: Depression PHQ-8 scores and Anxiety GAD-7 scores

	PHQ-8			
	Overall	**La Casa Hogar Group 1 (N = 5)**	**La Casa Hogar Group 2 (N = 12)**	**Nuestra Casa (N = 25)[a]**
Pre-Intervention (N=42)	7.7 (±5.5)	11.2 (±7.8)	7.6 (±3.8)	7.0 (±5.6)
Post-Intervention (N=40)	4.5 (±4.6)	4.0 (±1.9)	3.6 (±3.1)	5.0 (±5.5)
	GAD-7			
	Overall	**La Casa Hogar Group 1 (N = 5)**	**La Casa Hogar Group 2 (N = 12)**	**Nuestra Casa (N = 25)[a]**
Pre-Intervention (N=42)	6.8 (±5.2)	7.4 (±5.1)	6.5 (±3.7)	6.8 (±5.9)
Post-Intervention (N=40)	3.8 (±4.6)	3.2 (±1.8)	2.3 (±2.7)	4.6 (±5.6)

[a] Two (2) people missing due to being lost to follow-up in the Nuestra Casa Group in post-intervention group. Nuestra Casa post-intervention N = 23.

Table 6: Skills Learned

	Overall (N = 36)[a]		La Casa Hogar Group 1 (N = 5)		La Casa Hogar Group 2 (N = 12)		Nuestra Casa (N = 19)[a]	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
Pay attention to my breath	3.2	0.7	3.4	0.5	3.3	0.5	3.1	0.8
Paying attention to what I am feeling in my body	3.3	0.8	3.0	0.7	3.7	0.5	3.2	0.9
Paying attention to stressful moments and difficult emotions	3.0	0.9	3.0	0.0	3.4	0.5	2.7	1.1
Paying attention to what I eat	3.2	1.2	3.0	0.7	3.3	0.7	3.1	1.5
Feel connection (with loved ones and with the earth)	3.1	0.9	2.8	0.8	2.9	0.9	3.3	0.9
Move my body to release tension	2.9	1.2	3.2	0.4	3.3	0.7	2.6	1.5
Be affectionate with myself and take care of myself	3.1	1.1	2.8	0.8	3.3	0.6	3.0	1.3
Be grateful to myself and to others for the things I/they do	3.3	0.9	3.2	0.8	3.4	0.5	3.3	1.1
Relax my body	3.3	0.9	2.8	0.4	3.3	0.7	3.4	1.1

[a]Six (6) enrolled participants not included in Nuestra Casa group data. 2 were lost to follow-up, and 4 did not attend any ALMA sessions.

Program Activities and Fidelity

Overall, facilitators reported that participants seemed engaged and seemed to enjoy the session activities. Facilitators' ability to complete all curriculum components varied (see **Table 7**). La Casa Hogar Group 1 was able to complete all session components for 3 out of the 6 sessions. During Group 2, La Casa Hogar was able to complete all session components for 4 out of 6 sessions. Nuestra Casa was able to complete all session components for 2 out of 6 sessions. Some of the factors for missing components included running out of time and facilitators forgetting to include a component of the curriculum. Facilitators reported difficulty keeping track of time. A challenge that impacted fidelity was that sometimes facilitators would miss sessions due to illness or medical appointments. This would result in the remaining facilitator(s) having to redistribute which components they led. This could have contributed to facilitators being nervous, not feeling prepared, and forgetting to cover components. Sometimes facilitators were prioritizing letting the participants share which would cause them to run behind. During session 4, which had comparably low attendance for the Nuestra Casa group, the facilitators mentioned that due to having only 11 participants that session, they were able to give more space [time] to each woman that was present.

One facilitator shared that they would sometimes directly read the script in the training manual during facilitation which signals a need for more extensive training. Slight modifications to activities were sometimes made, such as completing an activity in one large group vs in multiple smaller groups or switching the order of activities to better fit their physical space constraints. In one of the support meetings while delivering ALMA to Group 2, La Casa Hogar facilitators requested to be trained in how to proceed in case any participant expressed suicidal ideation. This is important to note as our facilitator training focused on facilitation of the ALMA intervention rather than potential mental health crisis management.

Table 7: Overview of Session Component Completion

La Casa Hogar Group 1			
Session	**All components covered**	**Component(s) missed**	**Which components were not completed?**
1		X	Did not complete ALMA body drawing activity
2		X	Missed the relaxation activity due to migration stories taking longer
3	X		
4	X		
5		X	Session was cancelled due to many sick participants; components were combined into session 6 the following week
6	X		
La Casa Hogar, Group 2			
Session	**All components covered**	**Component(s) missed**	**Which components were not completed?**
1	X		
2		X	Missed the last relaxation activity due to migration stories taking longer
3	X		
4	X		
5	X		
6		X	Session was cancelled in advance; components were combined with session 5 the previous week
Nuestra Casa			
Session	**All components covered**	**Component(s) missed**	**Which components were not completed?**
1		X	Did not fully complete “acuerdos” activity – they discussed them but were not able to write them down; they did this part during session 2. They also did not complete the ALMA body drawing activity; they completed this activity during breakfast time of session 2
2	X		
3	X		
4		X	Forgot to hand out the mental health resources list

5		X	Ran out of time to complete the self-compassion letters to themselves; participants were told to complete it at home, and they would share how it went at their next session
6		X	The potluck style meal was done during session 5 due to a mix-up

Discussion

This pilot study provides insights into the feasibility of delivering the ALMA intervention with CHWs in a rural setting. The reductions in depression and anxiety symptoms among participants provide evidence for the potential for CHW-delivered interventions to improve mental health outcomes in underserved Latina immigrant populations. The feasibility and effectiveness of CHW delivered mental health interventions in the US has been documented,[20] including one study among uninsured Latinx patients.[29] Although some studies have shown feasibility and preliminary effectiveness of CHW-led interventions among Latinos or in physical health, literature among rural Latina populations or their mental health is rare.[20] Our findings suggest that when CHWs receive proper training, they can effectively deliver mental health interventions, like ALMA, to reduce depression and anxiety symptoms. This approach to increasing availability of mental health interventions is a valuable tool for improving Latina immigrant health in rural regions. It expands the tools available to scale access and provides sustainable mental health care in resource-limited areas.

Our findings suggest that future training efforts should focus on building facilitator confidence and familiarity with the curriculum to maintain curriculum fidelity. To minimize missed components, it may be necessary to improve training or have back-up facilitators available to substitute when needed. Previous studies have reported CHW training lengths that ranged from 2 days to 3 months of training.[30] Due to the length of the ALMA intervention curriculum, longer training could be beneficial to improve confidence and familiarity. Additionally, facilitator confidence could be improved by preparing an action

plan for use in case any participant expresses suicidal ideation or other mental health emergencies. This was shown when La Casa Hogar facilitators expressed wanting mental health crisis training. CHW desire to be prepared for mental health emergencies aligns with previous literature.[25]

The timing of the sessions was also a key factor for fidelity since running out of time was a common reason for missing session components. This is an important consideration for future ALMA groups; it may be beneficial to limit enrollment to fewer participants to provide ample time for each woman to share. Despite some issues with missed curriculum components, the challenges experienced throughout implementation were due to manageable factors such as time constraints and facilitator absences which can be addressed in future iterations. Participants in the La Casa Hogar groups explicitly stating a desire for more sessions or longer sessions could have been due to this CBO combining sessions 5 and 6 for both of their groups. It may be important to encourage CHW facilitators to complete all six sessions individually. This could have also contributed to participants sharing that they wanted more time to share, or that they wished other participants would have opened up more during some session activities.

Mental health interventions delivered by CHWs for rural Latina immigrants are limited. Our evaluation of the ALMA intervention when delivered by CHWs showed this approach has a high likelihood of success. Participant attendance and satisfaction was comparable to previous ALMA programs delivered in King County as part of the intervention trial.[2] There was a reduction in depression and anxiety scores from pre-intervention to post-intervention in all three groups. The change in depression scores was similar, and the change in anxiety scores was greater reduction than what was observed in the intervention trial.[1] These findings suggest that this implementation strategy was acceptable and has the potential for a high impact.

Our study contributes to the literature on implementation of CHW-led mental health interventions for rural Latina immigrants. CHW training models like ours can be implemented in other

rural regions to empower local community-based organizations to improve the mental health of their communities, while leveraging CHWs' existing knowledge and strengths. Future studies should explore the potential for improving mental health outcomes with a CHW model compared to traditional mental health experts. Future studies should prioritize providing support for CHWs at the organizational level, such as funding to support the CHWs' work and mental health support for themselves.[31,32] This approach would contribute towards ensuring the sustainability of a CHW approach by supporting the important work of community organizations and their staff, and ensuring communities are empowered and fully supported. Innovative approaches to increasing mental health support among rural Latina immigrants are essential to reducing existing mental health disparities.

Limitations

Due to this being primarily a feasibility study, changes in mental health outcomes cannot be confirmed due to small sample size and lack of control group. Further research would be needed to confirm the observed effects of the intervention when delivered by CHW facilitators. Previous research has noted a need for future studies with rigorous methods on the outcome effectiveness of CHW models.[33] Additionally, since our study took place in one county in Washington State, it's important to acknowledge that the results may not be generalizable to other rural counties. Also, the group led by the Nuestra Casa facilitators was held during typical work day hours which led to a greater portion of participants not being employed, which could impact the generalizability of groups to each other. Therefore, it is important that future research includes a larger sample with more varied demographics. Finally, the fidelity of the intervention was self-reported by the CHWs which can introduce recall bias. Future studies could consider adding observational fidelity data to improve validity.

Conclusion

The CHW-led ALMA intervention in Yakima County provides evidence for its feasibility to address depression and anxiety among Latina immigrants in rural settings. Our findings suggest the need for ongoing support to the facilitators and training on ensuring fidelity to the curriculum. This will be

important in sustaining and scaling the intervention for greater impact. The success of this pilot highlights the importance of culturally grounded mental health programs and the potential for CHWs to fill gaps in mental health care access in rural settings. Future research should focus on expanding the ALMA intervention in rural settings through additional community partnerships and exploring longer-term impacts on mental health outcomes. Future studies can use more rigorous methods to evaluate the effectiveness and benefits of the CHW implementation model.

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