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ORIGINAL ARTICLE

Amigas Latinas Motivando el Alma: In-Person and Online Delivery of an Intervention to Promote Mental Health Among Latina Immigrant Women

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Abstract

Objective: A few mindfulness-based interventions have been developed for Latina immigrant populations. We describe the feasibility and acceptability of Amigas Latinas Motivando el Alma (ALMA), a culturally grounded intervention developed to prevent and reduce depression and anxiety among Latina immigrants. We also compare participation in the intervention in-person with an online adaptation developed in response to the COVID-19 pandemic.

Methods: ALMA was developed through several years of formative research in collaboration with community organizations serving Latino immigrants. The curriculum integrates mindfulness-based approaches with Latino cultural strengths to reduce stress, enhance coping strategies, and increase social support. Latina immigrant women who spoke Spanish were recruited from Latino serving organizations to participate in an intervention trial. The program consisted of eight sessions offered weekly in person to groups of ~20 Latina immigrants. After the onset of the pandemic, the program was adapted to be delivered online via zoom. Attendance and fidelity were monitored by intervention staff, and a satisfaction survey was given to participants post-intervention.

Results: We enrolled 226 Latina immigrant women with an average age of 40 years and an average of 15.0 years living in the United States. The majority of participants were monolingual Spanish speakers (59%) with a high school degree (66%), although almost half were living on less than \$2,200 per month (48%). One hundred and seven (47%) attended the program in-person, and 119 (53%) participated online. Program attendance was similar across modalities, with an average of 58% sessions completed among in-person and 60% among online participants. Participant satisfaction and perceived efficacy of the intervention were high in both in-person and online groups.

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Discussion: Our findings indicate that the ALMA intervention is acceptable and feasible in this population. Future research should assess the efficacy of mindfulness-based interventions in Latina immigrant populations, including both in-person and online modalities.

CTR# NCT03749278.

Keywords: mindfulness, Latino(as), mental health, immigration, intervention

Introduction

LATINA IMMIGRANT WOMEN are at an increased risk for poor mental health outcomes, including depression and anxiety.¹ This is in part due to stressors related to their gender, race/ethnicity, and immigration status, such as exposure to violence, family separation, trauma experienced during immigration, and experiences of discrimination once in the United States.^{2–5} They also face socioeconomic stressors, such as low wages, limited work opportunities, and family obligations, which have been further exacerbated during the COVID-19 pandemic.^{5–10} Latino immigrants experienced the higher mortality rates from COVID-19 than any racial/ethnic groups in the United States,^{11–13} as well as stressors such as loss of work and increased caregiving demands.^{14–16}

In addition to these stressors, Latina immigrants face barriers when accessing health and social services to support their mental health.^{17,18} These include lack of eligibility for services due to their immigration status, limited services in Spanish,^{19–21} and discrimination when seeking services. Given these barriers, Latina immigrants need more accessible programs to support their mental health and well-being.²²

Theory and empirical evidence suggest two mechanisms that can buffer the impact of stress and promote mental health: (1) increased social support, and (2) the use of coping strategies.^{23,24} Latina immigrants often rely on social ties with family or peers that can provide social support and access to resources in the face of difficult experiences.²⁵ Latina immigrant women are also often part of supportive social and cultural networks, such as religious institutions or groups within community-based organizations.^{22,26} Many also use coping strategies for managing difficult life events, such as self-care and finding strength in seeing their children succeed.⁵

In addition to these supports and coping strategies, research has shown that mindfulness-based approaches can be effective in reducing stress, depression, and anxiety in general populations.^{27–31} Previous research indicates that Latino populations are receptive to mindfulness-based approaches for reducing stress and improving mental health. However, many have had little exposure to these approaches since a few interventions have been developed specifically for Latina immigrant women.^{32,33} Mindfulness-based approaches offer tools for coping with stressful events and can incorporate an appreciation and respect for individuals' cultural background and experience.^{34,35}

Tools used in mindfulness-based approaches include group motivational interviewing, problem solving, yoga, meditation, body awareness activities, and testimonials.³³ Some researchers have tested the effectiveness of culturally adapted mindfulness-based interventions for Latino populations. However, these studies have focused largely on linguistic adaptations (offering the program in Spanish), and

a few have included immigrant participants.^{25,36} There is a need for further research on the feasibility and acceptability of mindfulness-based interventions among Latina immigrants.

Amigas Latinas Motivando el Alma program

The Amigas Latinas Motivando el Alma (ALMA) program was developed to address this gap in the research. The ALMA is a community-based intervention that draws on previous research, theory, and community input that aims at preventing and reducing anxiety and depression. The program offers mindfulness-based coping strategies in a group setting that strengthens social ties and increases social support. The curriculum is interactive and integrates cultural aspects, such as Spanish language, Latino music, food, and traditions.^{37–40}

The ALMA was designed to be delivered in-person at Latino immigrant serving organizations. These community settings were chosen, because they were identified as safe locations for Latina immigrants to access social services. Community-based interventions can also be less stigmatizing, more cost-effective, and more accessible than those delivered in health care settings.²⁹ When the COVID-19 pandemic and social distancing recommendations began, our research team recognized the need to move the intervention online. However, no online mindfulness-based interventions targeting Latinos had been evaluated.⁴¹ Both researchers and health professionals have noted concerns about the accessibility of online interventions given the limited Internet availability in some Latino communities.^{42–44}

The primary aim of our study was to assess the efficacy of the ALMA program in preventing or reducing depression and anxiety symptoms using a delayed intervention comparison group study design. However, given the adaptations that were made due to COVID-19, we were also interested in assessing the feasibility of both versions and whether there were differences in participant engagement and satisfaction between those who received the intervention in-person or online. We describe the intervention and the process of adapting it for online delivery. We hypothesized that both versions of the program would be feasible, but that there might be lower levels of participant satisfaction for the online version given our previous research indicating a preference for in-person activities.

Methods

Study sample

We recruited and enrolled four waves of participants from two local Latino immigrant serving organizations to participate in the intervention trial using convenience sampling approach (flyers, in-person and online informational sessions, social media announcements, and word of mouth,

$N=226$). Because our primary aim was to assess the efficacy of the intervention, our sample size was determined based on pilot data indicating 19%–26% reductions in depression and anxiety scores post-intervention, as well as retention rates of 85%.⁴⁰ We estimated that a sample size of at least 200 (100 per arm) would detect moderate mean differences in depression and anxiety post-intervention with 80% power given anticipated attrition.

In each wave, one organization served as the intervention group, and the other organization served as the delayed intervention comparison group. Participants were not blinded to their study condition. During the first two waves of the study, participants received the intervention in-person ($N=107$), whereas those recruited during the last two waves received the intervention online via Zoom ($N=119$).

Before enrolling in the study, participants completed a screening for eligibility. Inclusion criteria included: identifying as both a Latina immigrant and Spanish speaker, being 18 years of age or older, and having a depression score less than 20 on the Patient Health Questionnaire-9 (PHQ-9).⁴⁵ The PHQ-9 is a clinical screener for depressive symptoms, and scores of 20 or above indicate severe symptoms. Participants with scores higher than 20 were referred to the licensed mental health counselor on the study team. In these cases, the counselor discussed participation in the program with the potential participants and referred them to additional services if needed. If participants were currently receiving treatment and/or had symptoms under control, they were included in the study.

Delivering ALMA in-person

The in-person version of ALMA consisted of eight sessions delivered once a week on-site at one of two local Latino serving partner organizations (Table 1). Sessions lasted 2 h in the early evening, which was identified as a time that would be convenient for participants, and began with a home-cooked meal. After the meal, children went to a separate room for supervised games and activities during the program. Participants were provided a bus pass to facilitate transportation to and from the sessions. Attendance was encouraged with weekly reminder phone calls and texts before each session made by members of our research team.

The in-person intervention offered participants opportunities to identify and share coping strategies they were currently using to manage stress and learn new strategies for working with stress and challenging emotions. New strategies offered were based in mindfulness and self-compassion in a context of social and cultural connection. Three facilitators with experience in mental health, mindfulness, and self-compassion with Latina populations led the sessions in Spanish. All facilitators were women, and two were Latina immigrants.

Sessions included instruction and practice in mindfulness and self-compassion practices focused on the breath, physical sensations, emotions, self-talk, eating, and movement. We began with more basic mindfulness and self-compassion practices and increased the depth and complexity of these practices over the course of the eight sessions. (See Table 1

TABLE 1. AMIGAS LATINAS MOTIVANDO EL ALMA IN-PERSON INTERVENTION WEEKLY SESSION TOPIC

<i>Title and topic</i>	<i>Content covered</i>
1. Arriving, Connecting, Introduction to Program	Welcome and introductions Discussion: ALMA, mental health, stress, and coping Group agreements and body relaxation and awareness practice
2. Telling Our Stories of Migration	Migration stories circles Mindfulness songs, breath awareness practice, and mindful movement
3. Stress and Life Here in Seattle/Washington	Mindfulness songs and breath awareness practice Discussion: stress, mindfulness, and self-compassion Activity to identify stressors, mindful movement, and compassionate body awareness and relaxation practice
4. Interconnectedness and Support	Mindfulness songs and breath awareness and centering practice Connection building activity, sharing memories of home/family Mindful eating and coping with stress
5. Homecoming—to Mindfulness, to Ourselves, to Each Other	Mindfulness songs and breath awareness and centering practice Emotional awareness discussion and awareness of emotions in the body practice Mental health resources
6. Working with Challenging Emotions	Mindfulness songs and breath awareness and centering practice Awareness of and compassion for difficult emotions in the body practice Mindful movement
7. ALMA in Our Daily Lives	Love letters to ourselves and appreciation for each other Mindfulness songs and breath awareness practice Collage activity: what ALMA means to you Sharing “ <i>dichos</i> ” (things loved ones have taught us) Mindful movement
8. Celebration, Graduation, Staying Connected to Self and Others	Home practices review activity Mindfulness songs and breath awareness practice Group potluck of favorite cultural dishes Mindful movement and gratitude circle Compassionate body awareness and relaxation practice Gift bags, photos, contact list, dance party

ALMA, Amigas Latinas Motivando el Alma.

for further description of curriculum content.) All sessions were designed to promote social connection by encouraging participants to share experiences and knowledge with one another in large and small group settings, discuss stressors and emotional challenges in their lives, and recognize commonalities across different experiences. We also incorporated participants' feedback and experiences with the program over time to better tailor the curriculum to the needs and desires of the Latina immigrant women in each wave of the intervention.

The program incorporated aspects of Latino culture to foster participants' sense of connection with family, home, culture, and fellow participants. Cultural elements included sharing singing, art activities, migration stories, family aphorisms (*dichos*), foods, and traditions. We also collaborated with a local Latina immigrant artist to create a practice booklet of hand-drawn images of a Latina immigrant woman named "Alma" illustrating the core practices (Fig. 1). The artful images in the booklet facilitated participant engagement with core ALMA practices and increased access to the intervention content across literacy levels. Before the program began, participants received an ALMA tote bag with materials for program activities.

Delivering ALMA online

With the onset of the pandemic in 2020, we were no longer able to offer the intervention in-person. To complete the intervention trial, we developed and pilot tested two online sessions with previous ALMA participants via Zoom ($N=17$). Participants in this pilot test expressed satisfaction with the online format and confidence that future partici-

pants could access the program and appreciate the content in the context of the pandemic. The ALMA facilitators adapted the full ALMA curriculum for an online format, and they then delivered the adapted curriculum online for the last two waves of the intervention (Table 2).

We modified our 8-week ALMA program to include activities that would be feasible to complete using Zoom and eliminated the activities that would be difficult online or would require in-person participation. We were able to fit all the core content into six online sessions, with an additional session to provide participants an orientation and technological support. Our hope was that fewer sessions might increase overall participation and reduce Zoom fatigue. Before the first session, participants received a blanket and an ALMA tote bag with materials needed to do the program activities at home.

Online participants received a weekly reminder call and text before each session with the Zoom link. We also provided them with a gift card to reimburse them for expenses incurred as part of participating in ALMA, including food (\$10/session) and caregiving (\$20/session). Online participants were offered a bus pass for assistance with transportation related to caregiving or work so that they could attend the sessions.

Data collection

Participants completed follow-up surveys after receiving the intervention. These were conducted either in-person (Waves 1 and 2) or by phone (Waves 3 and 4). Surveys were administered by Latino bilingual interviewers. The full survey took on average 60–90 min to complete, and participants received \$30 for each survey they completed. The survey included questions about their experience in the program, along demographic characteristics, including age, education, income, country of origin, years lived in the United States, and languages spoken.

The research team drafted questions about program satisfaction, program logistics, facilitators, perceived efficacy, and connection with other participants, with five response options ranging from "Do not agree" (1) to "Completely agree" (5). These questions were based on similar questions used in previous intervention studies conducted by members of the research team. Program satisfaction included three items, such as, "I would recommend this program to my friends, family, or other women." Program logistics included three items related to participants' perception of the timing and duration of sessions, food, and childcare (with the food and childcare items only asked of in-person participants).

Participants were asked to respond to two questions for each of the three facilitators. Nine items related to perceived efficacy of the intervention were included, such as, "ALMA helped me reduce my stress." Participants were also asked two items about ALMA's perceived impact on their social connections, for example, "I am interacting with people I met in ALMA outside the program." Only responses from participants who completed at least one session are reported. We considered responses that were a mean level of four or higher to indicate acceptable levels of participant satisfaction and perceived efficacy.

Attendance was tracked for all in-person and online intervention sessions. We considered participation in 50% of the sessions to be an acceptable level of engagement.



FIG. 1. Image from ALMA Practice Booklet, "Parar y Respirar, Aceptar, Darnos Carino" (Stop and Breathe, Accept and Offer Self-Care). ALMA, Amigas Latinas Motivando el Alma. Illustration by Ivonne Poveda-Leyva, used with permission.

TABLE 2. AMIGAS LATINAS MOTIVANDO EL ALMA ONLINE INTERVENTION WEEKLY SESSION TOPICS

<i>Title and topic</i>	<i>Content covered</i>
Pre-program orientation	Orientation to program, logistics, and Zoom
1. Arriving, Connecting, Introductions	Welcome and introductions Discussion: ALMA, mental health, stress, and coping Group agreements and body relaxation and awareness practice
2. Telling our Stories of Migration	Migration stories circles Mindfulness songs Breath awareness practice and mindful movement
3. Stress and Life Here in Seattle/WA	Mindfulness songs and breath awareness practice Discussion: stress, mindfulness, and self-compassion Activity to identify stressors, mindful movement, and compassionate body awareness and relaxation practice
4. Interconnectedness and Support: Coming Home to Ourselves and Each Other	Mindfulness songs and breath awareness and centering practice Connection-building activity: sharing memories of home/family Mindful eating and emotional awareness discussion Mental health resources
5. Working with Challenging Emotions	Mindfulness songs and breath awareness practice Awareness of and self-compassion for challenging emotions practice and mindful movement
6. ALMA in Our Daily Lives and End of Program Celebration	Self-compassion letters and affirmations for each other Mindfulness songs and breath awareness practice Virtual "potluck" of favorite cultural dishes Sharing "dichos" (things loved ones have taught us) Gratitude circle and celebration

After each session, facilitators debriefed the session and noted whether they were able to complete all planned activities. We considered delivering all planned activities to indicate high fidelity. They also noted any issues that impacted participation, significant current events happening at the time, and participants' level of engagement in session activities.

Data analysis

We calculated means and frequencies to describe the study sample, attendance, and satisfaction with the intervention. We also conducted Wilcoxon rank sum tests to test for differences in satisfaction by intervention modality (in-person vs. online).

Compliance with ethical standards

This study was approved by the University of Washington IRB Committee, protocol no. STUDY00005476. Funding was provided by the National Institute on Minority Health and Health Disparities,⁴⁶ Source ID: R01MD012230, CTR no. NCT03749278. The authors report no conflict of interest with this research. All participants provided written informed consent to participate in this study.

Results

Participant characteristics and attendance

We recruited 248 women into the study. Of that group, 226 (91%) completed baseline surveys and were enrolled in the study. Of those enrolled, 188 (83%) attended at least one ALMA session and 174 (77%) completed follow-up surveys. Participants had a mean age of 40.1 years and had lived in the United States 14.9 years on average. Most participants originated from Mexico (74%), and the majority spoke only Spanish (59%). About 66% had a high school

degree or higher; about half received a low income, and they were living on a household income of less than \$2,200 per month (47%).

The average program attendance was 4.6 out of 8 sessions (mean of 48%) for sessions delivered in-person and 3.6 out of 6 for sessions delivered online (mean of 60%). About half of the participants (53% of in-person and 48% of online participants) attended at least 75% of the sessions. Figure 2 displays attendance for each session across all four waves. Attendance tended to be higher in the first two sessions.

Program activities

Notes from facilitators indicated that they were able to complete all planned activities in all the sessions. There was variation in how long different activities took across groups, but in all cases, facilitators were able to adjust the timing in order to deliver all the core content. Some in-person sessions were interrupted by children needing attention or other activities taking place in the organization. Facilitators noted that some women participating online had difficulty connecting to the Internet and many accessed the program on their phones.

Participant satisfaction

Participants reported high levels of satisfaction with the intervention overall for both in-person and online delivery modalities (Table 3). In-person participants reported slightly higher program satisfaction (4.95 vs. 4.83, $p=0.02$) and enjoyment (4.90 vs. 4.77, $p=0.02$); however, both groups indicated that they would recommend it to others. In-person participants also rated the convenience of the time and duration of the sessions (4.72 vs. 4.45, $p=0.008$) and the competence and warmth of the facilitators (average 4.94 vs. 4.83, $p=0.02$) as slightly higher than those who participated online.

The perceived efficacy of the intervention was rated similarly for in-person and online groups. In-person participants

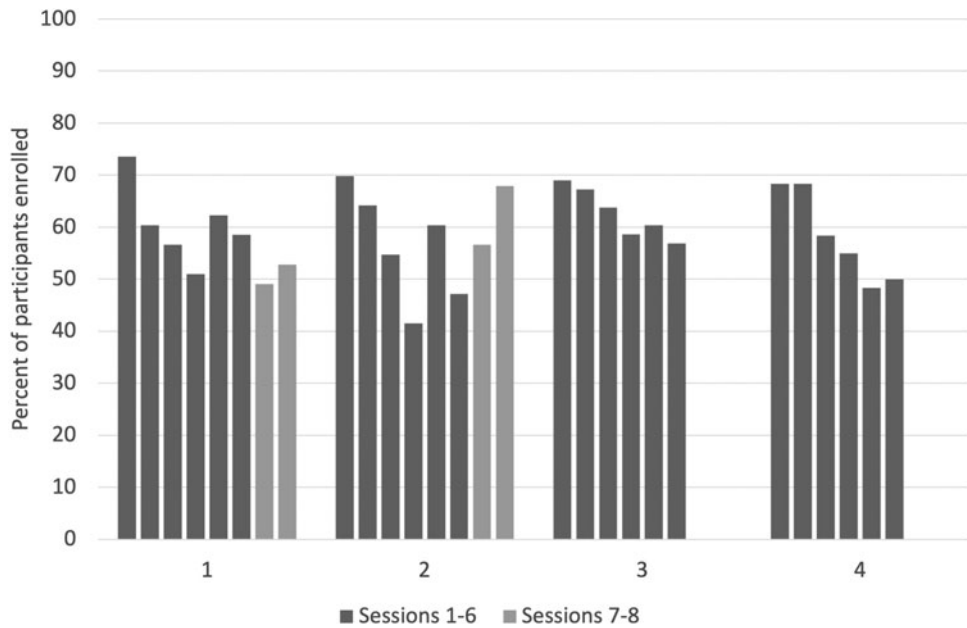


FIG. 2. Percentage of participants attending each session across waves, $n=226$.

had slightly higher average scores, indicating that ALMA had helped them in having self-compassion (4.81 vs. 4.65, $p=0.02$). In-person participants were also more likely to report interacting with people they met at ALMA sessions outside of the program (3.41 vs. 2.75, $p=0.01$, Table 3).

Discussion

We described the development and implementation of the ALMA intervention, one of the few mindfulness-based interventions developed specifically for Latina immigrant

TABLE 3. PARTICIPANT SATISFACTION DATA BY MODALITY

	<i>In-person</i> (N = 78)		<i>Online</i> (N = 96)		p
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	
Program satisfaction					
1. I would recommend this program to my friends, family, or other women	4.95	0.03	4.83	0.04	0.02
2. I thought the information shared was relevant for women like me	4.82	0.05	4.80	0.05	0.70
3. I enjoyed the ALMA program	4.90	0.04	4.77	0.05	0.02
Program logistics					
4. The time and duration of the sessions was convenient so I could participate	4.72	0.07	4.45	0.09	0.01
5. I enjoyed the food that was offered	4.73	0.07	—	—	
6. I liked the childcare services provided	4.42	0.16	—	—	
Facilitators					
7. I felt Facilitator 1 was warm and understanding	4.94	0.05	4.89	0.03	0.03
8. Facilitator 1 was competent	4.95	0.03	4.84	0.05	0.04
9. I felt Facilitator 2 was warm and understanding	4.94	0.04	4.83	0.04	0.01
10. Facilitator 2 was competent	4.95	0.03	4.80	0.05	0.01
11. I felt Facilitator 3 was warm and understanding	4.94	0.03	4.83	0.04	0.02
12. Facilitator 3 was competent	4.94	0.03	4.80	0.05	0.01
Perceived efficacy					
13. ALMA helped me reduce my stress	4.71	0.07	4.75	0.05	0.88
14. ALMA helped me recognize difficult emotions	4.75	0.06	4.72	0.06	0.52
15. ALMA helped me in having self-compassion	4.81	0.06	4.65	0.06	0.02
16. ALMA helped me feel less alone	4.73	0.08	4.66	0.06	0.21
17. ALMA helped me relax	4.80	0.06	4.70	0.05	0.09
18. ALMA helped me by teaching me how to relax	4.82	0.07	4.75	0.04	0.32
19. The information I received in the program helped me improve my mental health	4.74	0.07	4.74	0.05	0.65
20. ALMA helped me find new strategies to reduce the stress in my life	4.67	0.08	4.68	0.06	0.90
Connections with other participants					
21. I am interacting with people I met in ALMA outside of the program	3.41	0.17	2.75	0.17	0.01
22. The connections I have with other people improved due to ALMA	4.05	0.14	3.86	0.15	0.56

women. Recent reviews have noted the potential of mindfulness-based approaches to address mental health disparities in Latino populations.^{25,36} However, most have focused on limited adaptations of existing mindfulness-based stress reduction interventions. Rather than adapting an existing program, we engaged in an iterative process of community collaboration to develop a culturally grounded program that centers on Latina immigrant women's lived experiences of stress and strength.

We found that attendance was moderate across sessions, and there were high levels of participant satisfaction in both in-person and online versions of the intervention. Our findings indicate that mindfulness-based interventions are acceptable and feasible for Latina immigrants, especially when they are culturally relevant and address barriers to participation.

Our findings align with those of previous reviews showing high levels of participant satisfaction for interventions focused on stress and mental health among Latino populations.^{25,36} A review of nine mindfulness-based interventions describing the feasibility and acceptability of mental health interventions for Latinx populations reported high acceptability across age and occupational background, including increased acceptability after intervention mid-point. In this study, almost all women reported enjoying the program, that the content was relevant, and that they would recommend it to other women.

In a small pilot study of a mindfulness intervention that included Latinas, more than 90% of participants found the program useful.⁴⁷ Similarly, a study of an adapted mindfulness-based stress reduction intervention conducted in Puerto Rico found high acceptability among participants.⁴⁸

Although we had not originally planned to offer the intervention online, we were able to pivot quickly to adapt the intervention during the COVID-19 pandemic and observed a high level of satisfaction with the online version. This was, in part, due to strong relationships with community partners who welcomed the opportunity to innovate even while they faced the challenges of serving communities severely impacted by the pandemic. Online interventions can be especially valuable during times when it is difficult or unsafe for people to participate in person. They may also be more accessible, because participants do not have to navigate transportation to in-person sessions.

Previous studies have found that online mindfulness-based interventions can have promising outcomes related to stress, depression, and anxiety.^{49–51} However, none of these studies have included Latina immigrant women. As the COVID-19 pandemic continues to disproportionately affect Latino communities, there will be a continued need for online mindfulness interventions that can address the pandemic-related stressors that Latina immigrant women face.⁵²

Both online and in-person participants reported that the intervention helped them reduce their stress and improve their mental health. Our findings that both versions of the intervention helped them relax and feel less alone relate to our hypothesized mediators of the intervention (coping strategies and social ties). This is especially important in the context of the pandemic and in the case of those who were experiencing high levels of stress and social isolation with a few other options of connecting with others.⁵²

Program activities provided participants with opportunities to express themselves and to identify the experiences they had in common with other women. With the online version, participants had opportunities to share stories of family loss during the pandemic and to feel supported by each other.

In terms of program logistics, although almost all indicated that the program time and duration was convenient there were several sessions in which attendance was around 50%. Facilitators noted that this was most often due to competing demands with work and family. For those participants who attended in-person sessions, weather and transportation were also a barrier.

There are some limitations to our study. Although participants were surveyed by interviewers who were not involved with intervention delivery, they may have answered positively so as not to reflect badly on the program or on those leading it. In addition, the study was not designed to assess differences by intervention modality, so there may have been aspects of participant satisfaction that we did not capture. There may also be limited generalizability to Latina immigrants living in other social and cultural contexts, including those who are not already connected to community-based organizations.

Conclusions

Our findings suggest a need for more rigorous evaluations of the efficacy of mindfulness-based interventions among Latina immigrant populations, including those delivered in-person and online. If effective and accessible, online interventions can be used to reach Latina immigrants with less access to mental health care, such as women in rural areas or other areas with a few services. However, there may be additional benefits to women gathering in person in terms of the support and social connections that can be developed. Effective and accessible mindfulness-based interventions for Latina immigrants may help reduce longstanding mental health disparities.

Authors' Contributions

All authors contributed to the development of this article and agree to its publication.

Author Disclosure Statement

No competing financial interests exist.

Funding Information

Funding was provided by the National Institute on Minority Health and Health Disparities,⁴⁶ Source ID: 1R01MD012230.

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