



# Feasibility of Implementing a Mindfulness-Based Online Program for Latina Immigrants and the Staff that Work with Them

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## Abstract

**Objective** Post-migration stress and trauma impact the way Latino/a immigrants in the USA experience everyday life. Mindfulness-based interventions (MBIs) reduce stress and strengthen mental health by improving the response to stressors and promoting physical and psychological well-being; however, they have not been tested extensively with Latino/a immigrants in the USA, particularly MBIs implemented online. Thus, more information is needed about the feasibility of online MBIs adapted for Latino/a immigrants.

**Method** This study focuses on the feasibility of an online MBI for Latina mothers and community staff members working with them ( $n = 41$ ). Qualitative (three focus groups) data were collected to assess feasibility, appropriateness, acceptability, and quantitative (questionnaires) data asking about self-reported changes on stress, mindfulness, mind–body connection, subjective well-being, and perceived physical and mental health after the program.

**Results** Participants in the three groups indicated the program was appropriate, feasible, and acceptable for Latina immigrant mothers and the staff serving them. Mothers' and *Promotoras*' (community health workers) mean scores for subjective well-being and perceived physical and mental health increased significantly from baseline to post-test. No significant changes were observed in surveys completed by the staff, even though focus group participants reported meaningful improvement.

**Conclusion** Overall, the feasibility study was well received and relevant for the organization and the population they serve. The study's findings provide guidance to others who are implementing online mindfulness practices with Latina immigrants and the staff that work with them.

**Preregistration** This study is not preregistered.

**Keywords** Mindfulness · Immigration · Latino/Hispanic/Latinx · Trauma · Stress · Community-based intervention

Migration can be understood as the process of relocating to a new country or city in search of safety or better opportunities. In the USA, one in three Latinos is an immigrant (Passel & Cohn, 2008). Immigration is linked to high stressors and unique traumas that may impact the way people experience

their everyday life and difficult situations (Nagy et al., 2022). A large proportion of Latinx immigrants, especially those coming from Central America, are fleeing potentially traumatic circumstances such as extreme poverty, government corruption, deprivation, inequality, and violence (Chavez et al., 2022; Kaltman et al., 2011; Peña-Sullivan, 2020).

Post-immigration stress is a robust predictor of poor mental health outcomes, psychological distress, and diminished well-being (Barton et al., 2022), and influences how people tackle daily stressors (Peña-Sullivan, 2020). Post-immigration stressors include living in dangerous neighborhoods, adverse working and living conditions, lack of employment and/or health benefits, and acculturation stress (psychological adjustment to a new culture) (Balidemaj & Small, 2019). The way an individual experiences stress can directly impact neurological and other biological processes in the body. A

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person with a previous history of trauma may react to low-stress situations with the same intensity as in high-stress situations (Miller et al., 2019).

Practices such as mindfulness, which fosters connection to the present moment, kindness for self and others (Kearney et al., 2021), and connection with emotions in the body (Kabat-Zinn & Hanh, 1990) can help to overcome trauma-related negative effects such as dissociation, heightened irritability, and an overactive nervous system. Mindfulness-based interventions (MBIs) have been shown to decrease stress and improve health outcomes in underrepresented populations. Research on mindfulness in Latinx populations has shown reductions in smoking (Spears et al., 2015) and depression (Lopez-Maya et al., 2019), and greater psychological well-being (Edwards et al., 2014; Roth & Robbins, 2004).

A vast body of research shows the advantages and effectiveness of using online platforms as channels for delivering mental health interventions (Andersson et al., 2019; Spijkerman et al., 2016), including lower costs and higher reach by decreasing access barriers such as lack of health insurance, childcare, or transportation. Meanwhile, barriers to the uptake of online MBIs include people's preference for face-to-face interventions (Apolinario-Hagen et al., 2017), high attrition rates, and low adherence, especially for unguided formats (Fleming et al., 2022). While a small yet growing body of evidence shows the benefits of MBIs in Latinx populations, existing research often reflects a lack of a community participatory approach to culturally adapt MBIs (Cotter & Jones, 2020), and there is little attention paid to access and participation barriers, such as lack of interest, lack of access to care, lack of transportation, lack of childcare, and other competing family demands (Roth & Robbins, 2004).

Implementation research for evidence-based programs seeks to understand the barriers and facilitators to implement these programs in real-world settings. The Consolidated Framework for Implementation Research (CFIR) is a well-recognized framework for exploring implementation constructs such as feasibility, acceptability, appropriateness, and fidelity, which contribute to the barriers and facilitators of integrating interventions to real-life practice (Keith et al., 2017). CFIR has been previously applied in the context of telemedicine (Batsis et al., 2020; Stevenson et al., 2018) to understand barriers and facilitators to implement prevention programs with hard-to-reach and vulnerable populations.

The purpose of this study was to apply CFIR to test and refine an adapted MBI for Latinas and the staff that work with them in a community setting. The study aimed to inform the future implementation and long-term success of the program through its results. The Yo Soy Paz program

was an online, synchronous, 1 h-per-week group-based program delivered over 8 weeks. This study used a mixed-methods methodology to examine the acceptability, feasibility, and appropriateness of the program and to assess preliminary evidence of changes in levels of stress, overall physical and mental health, mindfulness, mind-body connection, and subjective well-being in mothers and staff participating in the program. We hypothesized that the program demonstrates strong appropriateness, feasibility, and acceptability and that the participants of the Yo Soy Paz program report descriptively lower stress levels and better self-rated overall physical and mental health, as well as higher mindfulness, mind-body connection, and subjective well-being levels at the end of the program compared to before participating in the program.

## Method

### Participants

Study data came from 41 participants: staff ( $n = 18$ ), *Promotoras* (immigrant mothers trained as community workers) ( $n = 7$ ), and immigrant mothers ( $n = 16$ ) delivering and/or receiving services from a community organization. The organization in Maryland provides school- and community-based positive youth development services with youth and their families. Parent outreach workers/case managers also assess family needs and develop action plans to connect families to needed resources.

The eligibility criteria to participate in the study were the following: (a) being 18 years of age or older, (b) fluency in Spanish, (c) receiving or delivering services at the community organization, and (d) self-identified as Latinx, if part of the *Promotoras*' or mothers' groups. Non-Latino staff members fluent in Spanish were allowed to participate because of (1) their familiarity with the people they served, (2) their close personal relationships with this population (i.e., second-generation Latinx or had Latinx family members), (3) second-hand trauma that they were exposed to in their work (Akinsulure-Smith et al., 2018), and (4) a request from the organization to address the mental health and stress reduction needs of the staff. Nearly 90% of the participating staff self-identified as Latinx, and close to 70% had immigrated to the USA and are facing similar stressors as the population they served. Participant demographics are shown in Table 1.

### Procedure

The intervention components are outlined in Table 2. The original intervention was created by Jon Kabat-Zinn to train chronic pain patients in self-regulation (Kabat-Zinn, 1982).

**Table 1** Sample demographics (N=38)

Characteristics	Total Population (n=38)	Staff (n=15)	Promotoras/Mothers (n=23)
Gender, <i>n</i> (%)			
Female	32 (84%)	9 (60%)	23 (100%)
Race, <i>n</i> (%)			
Non-Hispanic White	2 (5%)	2 (13%)	0 (0%)
Hispanic or Latino	36 (95%)	13 (87%)	23 (100%)
Age, <i>n</i> (%)			
18–35	8 (21%)	8 (53%)	0 (0%)
36–50	23 (61%)	4 (27%)	19 (83%)
50+	8 (18%)	3 (20%)	4 (17%)
Country of Origin, <i>n</i> (%) <sup>a</sup>			
USA	5 (13%)	5 (34%)	0 (0%)
Central America	15 (40%)	4 (26%)	11 (48%)
South America	5 (13%)	3 (20%)	2 (9%)
Mexico	3 (8%)	0 (0%)	3 (13%)
Missing	10 (26%)	3 (20%)	7 (30%)
Education Level, <i>n</i> (%)			
Less than High School	8 (21%)	0 (0%)	8 (35%)
High School, Some	16 (42%)	3 (20%)	13 (56%)
College or Higher	14 (37%)	12 (80%)	2 (9%)
Employment, <i>n</i> (%)			
Full time	17 (44%)	13 (87%)	4 (18%)
Part time	9 (24%)	2 (13%)	7 (31%)
Unemployed seeking	6 (16%)	0 (0%)	6 (26%)
Unemployed not seeking	6 (16%)	0 (0%)	6 (26%)
Time living in US, <i>n</i> (%) <sup>a</sup>			
Born in USA	5 (13%)	5 (33%)	0 (0%)
1–5 years	5 (13%)	4 (27%)	1 (4%)
11–15 years	8 (22%)	2 (13%)	6 (26%)
More than 15 years	10 (26%)	1 (7%)	9 (40%)
Missing	10 (26%)	3 (20%)	7 (30%)

<sup>a</sup>Data collected at post-test

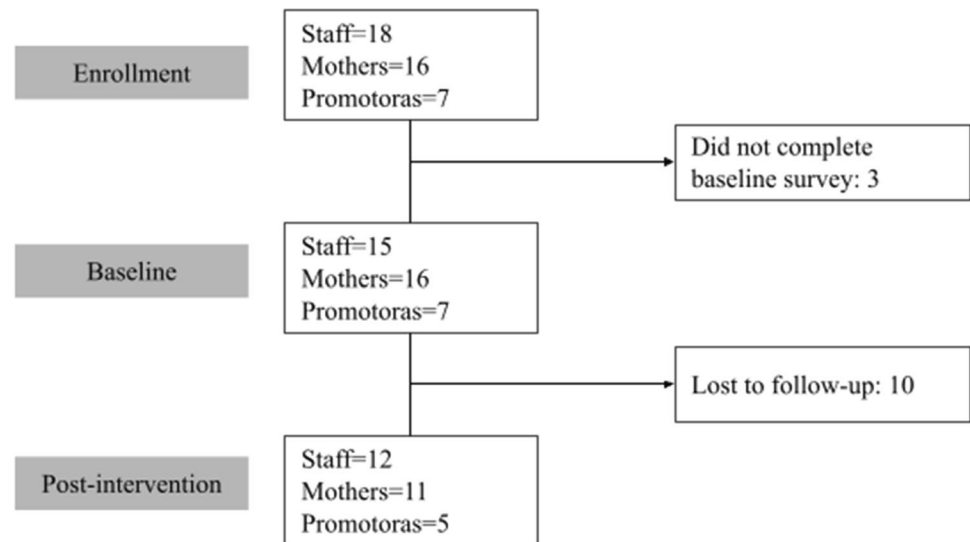
**Table 2** Yo Soy Paz eight-week program

Week	Topic	Activity
1	Overview of the course and theory and evidence behind mindfulness.	Body Scan
2	Reconnecting with my story. A talk about reasons for migration and differences in cultures.	Breathing Meditation
3	Effects of stress in the body and mindfulness exercises to counteract them.	Breathing Meditation
4	Understanding and managing difficult emotions through mindfulness.	RAIN Guided Meditation to connect with emotions in the body.
5	Exercise as health. Practicing yoga exercises at home.	Yoga
6	Integrating the practice of mindfulness into everyday life. Loving Kindness.	Tonglen Meditation
7	Belonging in life mindfully. Connecting with my roots and with gratitude.	The Tree of Life
8	The program closes with focus groups to talk about lessons learned, likes and dislikes and ways to continue practicing mindfulness.	Focus Groups

The intervention was adapted using a coordinated and systematically guided process based on the ADAPT-ITT framework (Wingood & DiClemente, 2008) (ADAPT-ITT steps

can be found in Appendix A). Each weekly session included two mindfulness exercises, reflection questions, open-access videos, PowerPoint slides, and life examples.

Fig. 1 Study flowchart



The program and all sessions except yoga were led in Spanish by a facilitator, a Latina psychologist with over 10 years of mindfulness experience. The yoga session was taught by a Latina yoga instructor. The intervention engaged with the participants as agents of strength and resilience while respecting their own processes through certain traumatic experiences. The facilitator of the classes was aware of this approach and provided a safe environment to debrief after the exercises to discuss any triggering circumstances and allow participants to share their feelings and thoughts (Reeves, 2015). There was not a minimum of participants required for each lesson.

Survey and demographic data were collected at study entry in March 2021, and self-report attendance data were collected in May 2021 for a total of 38 respondents of the 41 participants at baseline (92.6%), and 28 respondents at post-intervention (68.2%). The study flowchart is presented in Fig. 1. Attendance was taken in every class using a short Qualtrics questionnaire at the start of each class, on which participants entered IDs they had earlier created. Since not every participant completed the questionnaires, remembered the ID they had created, or created different IDs for each of the forms they were asked to complete, participants were also asked in post-questionnaires to indicate the classes they attended. At week eight, 11 of the 15 staff (73%) participating in the intervention also completed a post-intervention questionnaire via Qualtrics to assess acceptability, feasibility, appropriateness, and inner and outer setting of the intervention.

The three MBI groups (Spanish-speaking staff, *Promotoras*, and mothers) were recruited through the community organization. Staff members received emails inviting them to participate in the program along with the informed consent information and the link to the baseline assessment to be completed prior to the first session. *Promotoras* and mothers

who were part of weekly education and support groups were verbally consented by the group leaders. After providing consent, *Promotoras* received the link to a Qualtrics survey to be completed prior to the first session. Due to literacy barriers for those in the mothers' group, the organization's group leader conducted the baseline questionnaires individually via phone in Spanish.

All documents were provided in Spanish. Like the baseline questionnaires, post-intervention questionnaires were conducted online via Qualtrics survey for the staff and the *Promotora* groups, and over the phone for the mothers' groups. On week eight of the program, the first author conducted focus groups in Spanish with each of the three groups of participants. Due to budgetary constraints, only the *Promotoras* and mothers received a \$20 gift card for their participation. The three 1-hr-long focus groups (FGs) with  $n = 11$  staff,  $n = 9$  *Promotoras*, and  $n = 10$  mothers were audio-recorded and transcribed. In the *Promotora* group, two of the participating members were staff who received the intervention along with the *Promotoras*; 73% of the participants participated in a focus group. Focus groups were conducted via Zoom in Spanish by the first author, a native speaker, using the interview guide developed by the research team. All focus groups were analyzed in their original language.

## Measures

To assess implementation results, we used CFIR's five major domains (intervention characteristics, inner setting, outer setting, characteristics of individuals, and implementation process) and the ten relevant subcategories for this study to develop two semi-structured focus group guides for staff and *Promotoras*/mothers. Participants were asked

**Table 3** Staff implementation questionnaire ( $n=11$ )

	Mean $\pm$ SD	Response Range
Acceptability (M,SD)	4.70 (.45)	(4–5)
The <i>Yo Soy Paz</i> program meets my approval.	4.73 (.46)	
The <i>Yo Soy Paz</i> program is appealing to me.	4.73 (.46)	
I like the <i>Yo Soy Paz</i> program.	4.73 (.46)	
I welcome the <i>Yo Soy Paz</i> program.	4.64 (.50)	
Appropriateness (M,SD)	4.61 (.49)	(4–5)
The <i>Yo Soy Paz</i> program seems fitting.	4.64 (.50)	
The <i>Yo Soy Paz</i> program seems suitable.	4.64 (.50)	
The <i>Yo Soy Paz</i> program seems applicable.	4.55 (.52)	
The <i>Yo Soy Paz</i> program seems like a good match.	4.64 (.50)	
Feasibility (M,SD)	4.56 (.50)	(4–5)
The <i>Yo Soy Paz</i> program seems implementable.	4.55 (.52)	
The <i>Yo Soy Paz</i> program seems possible.	4.64 (.50)	
The <i>Yo Soy Paz</i> program seems doable.	4.55 (.52)	
The <i>Yo Soy Paz</i> program seems easy to use.	4.55 (.52)	
Inner and Outer Setting (M,SD)	3.69 (.48)	(2–4)
What is the general level of receptivity in your organization to implementing the intervention?	3.64 (.50)	
How does the program relate to the organization's mission and vision?	3.82 (.40)	
How essential is this program to meet the needs of the clients served by your organization?	3.64 (.67)	

about their satisfaction with the program, program benefits, interest in the content, and use of skills outside the program. Focus groups were recorded and transcribed verbatim to be analyzed in their original language. Additionally, we included items to capture appropriateness, acceptability, feasibility, and inner and outer setting, which are detailed in Table 3.

Scales for acceptability, appropriateness, and feasibility were comprised of four items measured on a 5-point scale from 1 = *completely disagree* to 5 = *completely agree*. *Acceptability* was assessed with the Acceptability of Intervention Measure (AIM) scale (Weiner et al., 2017), rating the organization's receptivity of the intervention, the participant attendance, and the comments about the intervention characteristics, such as its design and quality, complexity, and the participants' beliefs about the intervention. *Appropriateness* was assessed using the Intervention Appropriateness Measure (IAM) scale (Weiner et al., 2017), rating the intervention's fit with the organization's vision and mission, its appropriateness to match the clients' needs, and comments about the inner setting's compatibility and outer setting's clients' needs and resources and tension for change. *Feasibility* was assessed with the Feasibility of Intervention Measure (FIM) scale (Weiner et al., 2017) and comments about the intervention's characteristics regarding adaptability and cost. *Inner and outer settings* were measured with three items on a 5-point scale, assessing receptivity, alignment, and ability to meet client needs (1 = *low* to 5 = *high*).

### Fidelity

We assessed fidelity with weekly fidelity checklists completed by the instructor and the first author who observed all of the sessions. A summative score was created for each of the lessons and then converted into a percentage. For lectures where the facilitator and the PI marked all the activities as complete, there was 100% fidelity. The first author also kept a log of barriers and facilitators for each lesson. Process implementation comments were also captured from the barriers and facilitators section of the focus groups.

### Perceived Stress

We used the Short-form Perceived Scale Stress Scale (PSS), a 4-item measure of the degree to which situations in one's life are appraised as stressful (Cohen et al., 1983), with a 5-point response scale (0 = *never* to 5 = *always*). Two items were reversed coded so that a high number equates to higher levels of perceived stress. We calculated the  $\alpha$  at pre ( $\alpha=0.793$ ) and post ( $\alpha=0.635$ ) which is similar to the  $\alpha$  calculated in other studies with Spanish-speaking populations of  $\alpha=0.74$  (Vallejo et al., 2018).

### Perceived Overall Physical and Mental Health

We used two questions to assess this measure: How would you rate your overall physical health? How would you rate

your overall mental health? The questions were asked on a Likert-type scale from 1 = *poor* to 5 = *excellent*. This measurement has been used in several studies, and its reliability is acceptable, although it has not been tested with Latino populations (Bombak, 2013).

### Mind–Body Connection

The Scale of Body Connection (SBC) (Price et al., 2017) ( $\alpha=0.666$  at pre-test and  $\alpha=0.807$  at post-test) consisted of 20 self-report items about two distinct dimensions of the mind–body connection: body awareness (BA) and bodily dissociation (BD). Items were on a 5-point Likert-type scale measuring current experiences, ranging from 1 = *never* to 5 = *all the time*. Two questions were removed following the advice of the community partners (aware during sexual activity and separated during sexual activity).

### Mindfulness-Acting with Awareness

The Mindful Attention Awareness Scale (MAAS) (Osman et al., 2016) is a 15-item scale designed to assess the short-term or current expression of a core characteristic of mindfulness. We used a short version of the MAAS scale made up of five questions with response choices ranging from 1 = *not at all* to 7 = *very much*. We calculated the overall  $\alpha$  at pre ( $\alpha=0.76$ ) and post ( $\alpha=0.87$ ). The long version of the scale has been validated in Spanish and has shown equivalent factor analysis as the English version (Johnson et al., 2013). This measure only captures the dimension of mindfulness that focuses on acting with awareness. It does not capture other important aspects of mindfulness such as observing, describing, nonreacting, and non-judging (Baer et al., 2006; Grossman, 2011).

### Subjective Well-Being

The Mental Health Continuum short form (MHC-SF) had 14 items. Response options were based on a 6-point Likert-type scale ranging from 1 = *never* to 6 = *every day* (Keyes et al., 2008). We calculated the overall  $\alpha$  at pre-test ( $\alpha=0.69$ ) and post-test ( $\alpha=0.75$ ), which were smaller than the alphas calculated by the scale creators at  $\alpha=0.91$  and of the validated Spanish version of  $\alpha=0.94$  (Echeverria et al., 2017).

### Data Analyses

For the focus groups, the research team reviewed the transcripts for accuracy prior to analysis. Qualitative data were analyzed in Dedoose using Template Analysis (Crabtree

& Miller, 1992). First, we prepared a codebook that was organized by anticipated themes using the CFIR as a framework. Second, two coders who are native Spanish speakers (JMB and JB) coded each transcript line by line, refining the codebook as needed. After the first round of coding, the codebook was refined with additional codes discussed by the two coders and transcripts were recoded with the additional codes. Finally, we compiled final themes and subthemes, and quotes were translated into English.

We ran descriptive statistics to assess the demographics of the group. A self-created ID number linked the baseline questionnaire ( $n=38$ ) to the post-intervention questionnaire ( $n=28$ ). Means were calculated for all scale items. Higher scores represent a more desired level of the attribute measured. Internal consistency reliability was calculated using Cronbach's alpha for all the scales at baseline and post-test. We also reviewed the data for missing values. We calculated the mean from available items if a respondent was missing one question from the scale. This was done for two participants for the Flourishing scale who were missing one item and five participants for the Mind–Body scale who were missing an item. All other data were complete. We ran one-sample  $t$  tests to assess the direction of changes in mean scores of perceived stress, flourishing, mindfulness, and mind–body connection from baseline to post-test.

## Results

Out of the 28 respondents that completed the post-questionnaire, 85% ( $n=24$ ) indicated they attended five or more classes. Fifty percent ( $n=16$ ) indicated attending all seven classes. Some of the staff missed a class due to competing demands. The most inconsistent group was the mothers' group since most of the mothers participated in the class while also taking care of other tasks such as being at work or doing house chores (e.g., babysitting, cleaning a house, picking up children). This was also noted through the participation in the virtual focus groups.

All sessions except session 2 had 100% fidelity completion. Session 2—connecting with my [migration] story, had 75% fidelity completion. In this session, participants spent most of the time answering the opening question: What was your reason for migrating? The instructor spent some time processing the stories from the participants since most had traumatic elements, such as fleeing violence, fleeing deprivation, and leaving friends and family behind, and thus there was no time for the final meditation. During this lesson, participants experienced difficult emotions that had to be addressed during the session.

In some classes, the internet dropped while an important discussion was taking place. It was useful to have

two co-hosts; if one of the hosts lost internet connectivity, the participants were able to remain online while connectivity was regained. Some mothers participated while driving, running errands, taking care of children, or working. This multitasking prevented them from fully engaging with the class content and the practice exercises. Some meditations used at the end of the lessons were long and participants lost focus. The facilitator found that guided meditations under 8 min worked best for the online environment. Participants also responded better when the meditation was led by the facilitator rather than through a video. During the *Connecting with Difficult Emotions* lesson and meditation, mother participants shared connecting with feelings of deep sadness. Some mothers reflected on the possibility of needing additional help to cope with these emotions. One mother was connected to a psychologist after sharing her experience of not being able to enjoy everyday life and having difficulty getting out of bed. She mentioned it was the first time she had realized she had difficult emotions she had not been able to identify.

Acceptability ( $M = 4.70$ ,  $SD = 0.45$ ), appropriateness ( $M = 4.61$ ,  $SD = 0.49$ ), and feasibility ( $M = 4.56$ ,  $SD = 0.50$ ) rated high, and inner and outer settings rated in the mid-range ( $M = 3.69$ ,  $SD = 0.48$ ) (Table 3). Template analysis of qualitative focus group data resulted in three themes—acceptability, feasibility, and appropriateness—and six sub-themes—perceived benefits, interest in content, feasibility of continuing implementing the program, adaptations, use of skills outside the program, and fit with the organization’s demands, as described below.

## Acceptability

### Perceived Benefits

Nearly all participants reported that they benefited from receiving the program and that they found the content interesting, specially learning about the stress response and how to manage difficult emotions. Their comments ranged from becoming aware of the present moment, learning the benefits of slowing down to live more intentionally, and becoming aware of the benefits of mindfulness for relaxation and for taking care of their emotional health. One *Promotora* shared:

“That [awareness of the present moment] has gotten stuck with me every morning, I take my coffee, I don’t work, I stop doing everything and it has worked well. I enjoy my morning coffee in peace.”

Staff also found their program useful to share with other coworkers and to navigate their emotions. One staff member commented:

“We all have our own problems and if it wasn’t for this space of being able to say ‘Oh, [co-worker’s name] is also going through this. So, for us, it is a moment where we can be together and learn about methods on how to navigate our emotions.”

*Interest in content.* In terms of the migration story, mothers and *Promotoras* really enjoyed having a space to dig deeper about this important moment in their lives. One mother shared:

“Even though it is sad to remember (our migration story), everything we have been through, it is very nice to remember what we have been through, what we are currently living, and how we are moving forward in life [...] When you are about to give up, someone shows up and gives you a hand.”

Some mothers and *Promotoras* mentioned struggling with practicing yoga, meditation, or accepting quotes, videos, or stories that made references to other religions since they were taught in their home countries by family members or religious leaders that such practices were negative. One mother commented: “I respect other beliefs, but I only believe in one God, Jesus Christ, and that was a barrier for me, because I don’t approve of following other traditions.”

Additional feedback received from the participants has been compiled in Table 4.

## Feasibility

### Implementing the Program

Staff members reflected on the possibility of implementing the program, or parts of the program, with their clients. For the most part, the staff felt comfortable implementing the program in the future with proper/additional training (Table 4).

In terms of delivering the class online, the focus groups discussed advantages and disadvantages. One of the biggest disadvantages noted by the staff and commented by mothers was lack of a quiet space in which to practice the meditations and exercises. As noted by one of the group leaders, getting mothers to participate was also more difficult. To address this, a staff member recommended calling mothers by their names and rotating who gets to share in each of the sessions. Staff also shared that online delivery made it difficult to help mothers with literacy barriers for activities that required writing. Staff also reported that mothers had multiple distractions while taking the program online, and having in-person practices would help alleviate this issue. Nevertheless, mothers reported enjoying the online format since it reduced transportation time and allowed them more flexibility with their schedule, since they could watch their children and make dinner while listening to the class.

**Table 4** Qualitative feedback received from the participants in the focus groups, selected quotes ( $n= 28$ )

Acceptability: Perceived benefits of the program and interest in content	<p>“That [awareness of the present moment] has gotten stuck with me every morning, I take my coffee, I don’t work, I stop doing everything and it has worked really well. I enjoy my morning coffee in peace.” <i>Promotora</i></p> <p>“[The program] helped me a lot and I think it would help our clients a lot, both children and parents. We already have that notion of our emotions at a certain age, to accept them but perhaps we need more training.” <i>Staff member</i></p> <p>“We all have our own problems and if it wasn’t for this space of being able to say ‘Oh, [co-worker’s name] is also going through this. So, for us, it is a moment where we can be together and learn about methods on how to navigate our emotions.” <i>Staff member</i></p> <p>“For the mothers to be able to identify their emotions and to acknowledge how these are affecting their lives, stress levels, and family environment helps them not to feel so guilty or so alone. To be able to connect with other mothers, to know that they might be feeling in a similar way and to know that it is normal to feel certain emotions in particular occasions [is helpful].” <i>Staff member</i></p> <p>“My favorite part was when we talked about migration. In this country we are migrants. But we won’t give up. We can accomplish something of ourselves and thanks to God we have these programs to be able to improve our lives.” <i>Mother</i></p> <p>“Even though it is sad to remember (our migration story), everything we have been through, it is very nice to remember what we have been through, what we are currently living, and how we are moving forward in life [...] When you are about to give up, someone shows up and gives you a hand.” <i>Mother</i></p> <p>“I respect other beliefs, but I only believe in one God, Jesus Christ, and that was a barrier for me, because I don’t approve of following other traditions.” <i>Mother</i></p>
Feasibility	<p>“I am confident in implementing it and it is something that can help parents to reflect on their past, their present and prepare for their future in a better way” <i>Staff member</i></p> <p>“Not sure if we have a curriculum, but I would like to receive the curriculum, read it at least three times to really understand it because you are professionals in what you do, but we just facilitate what is given to us, so we do need more training.” <i>Staff member</i></p>
Appropriateness: Practical application of learned skills	<p>“When I am in a situation where a person is talking and I am uncomfortable, I try to focus on my body, and I say ‘well, this is how I am feeling’. So I start doing the exercises you taught us, I start breathing and I start doing certain things so that I can control the situation and not the other way around.” <i>Promotora</i></p> <p>“For me, the biggest lesson was focusing in cultivating a non-judgmental attitude. I think this is a vital tool for me because I don’t usually judge others, but I do judge myself a lot.” <i>Mother</i></p> <p>“I can control myself better. Before starting the course, I used to start fights with my children and many other things. Not anymore. I know how to calm myself a bit better. I know things won’t get resolved by fighting.” <i>Mother</i></p> <p>“I had a session with the psychologist I got when I first arrived in this country. I had to do a PTSD test [...]. She explained to me that the highest level on the test is 80 but that people need help when they have a level starting at 35. My baseline score, from the year I was able to get insurance and treatment, was 59. When I started treatment, after a month, my level was 55. I kept working and doing all the exercises and such but she told me she wouldn’t be able to see me during the two months when this course took place. She was afraid I would regress back to my original number. I was shocked when I heard my score yesterday, it was after taking this course and my score was 14.” <i>Staff member</i></p>



**Table 4** (continued)

Appropriateness: Fit with organization's mission and vision

"I really liked what the videos that you chose taught us. Many times I wrote the title of the video to show it to our group of parents where we talk about resilience, communication, relationships and such. It really helped us to implement the same activities that we were learning in the course with them." *Staff member*

"When we are with our clients, we always ask them to be present in mind and body during the activity. Some of the mothers need to cook or watch their children but we have started asking them to be fully present in the session to be able to work better with them. That has been a great lesson." *Staff member*

"Some of our youth clients are going to need professional therapy. By introducing some of the strategies we learned, we can help them deal with their current stress and they might not need the help of a professional therapist. This can be a tool that we can introduce to them, and they can dig deeper if they want to do so." *Staff member*

"Recently we have more youth with strong emotions and more families with problems, including violence within the family." *Staff member*

### Suggested Adaptations to the Program

Staff talked about setting attention protocols in case some of the exercises or topics triggered a participant. They mentioned the possibility of including a second facilitator that could help triggered participants one on one in a breakout room. To help participants feel comfortable sharing difficult emotions, one staff member also recommended adding tools to strengthen communication and self-esteem. Finally, staff members recommended not talking about different religions to the mothers. As a solution, they proposed including quotes without the authors or including more neutral quotes and content.

While having a mindfulness program in Spanish was seen as a great advantage, one staff member recommended having culturally and linguistically appropriate meditations, since most of the meditations that were included were from people from Spain and not from people from Central or South America. Another staff member recommended adding components to the program when implementing it with youth, such as incorporating an artistic component to help youth express their feelings.

### Appropriateness

#### Practical Application of Learned Skills

Most of the participants talked about their experience using the exercises learned in class to foster relaxation and manage difficult emotions outside of the program, especially in personal relationships or painful situations. One *Promotora* shared:

"When I am in a situation where a person is talking and I am uncomfortable, I try to focus on my body, and

I say 'well, this is how I am feeling'. So I start doing the exercises you taught us, I start breathing and I start doing certain things so that I can control the situation and not the other way around."

Additional quotes can be found in Table 4.

### Fit with Organization's Mission and Vision

Staff shared how they had been using the tools that they had learned from the program to help and to better understand their clients. One staff member specifically cited mindfulness as a useful tool to help clients deal with the stress and anxiety from daily life. Since participating, staff mentioned using the activities or videos from the program with their clients.

They also commented on the usefulness of the program as a mental health promotional tool at the community and individual level. Staff members mentioned the importance of helping their clients cultivate awareness of the present moment to improve their results and participation in other programs offered by the organization.

Staff from the focus groups reported the importance of mental health promotional programs for their already vulnerable clients whose mental health needs increased due to the COVID-19 pandemic. They mentioned having similar initiatives such as community mental health programs to offer spaces where healing can occur due to the rising demand for these services (Table 4).

### Primary and Secondary Outcomes

As shown in Table 5 of the Supplementary Materials, staff reported an increase in overall physical health, overall mental health, subjective well-being, and perceived stress, but also reported lower-body dissociation and lower-body

**Table 5** Sample descriptive for primary and secondary outcomes by group

	Range	Staff (n=12)					Promotoras and Mothers (n=16)				
		Pre		Post		t-test	Pre		Post		t-test
		M	SD	M	SD		M	SD	M	SD	
Perceived Stress	1–5	2.06	0.57	2.08	0.40	.00	2.35	0.73	2.18	0.68	–1.43
Perceived Physical Health	1–5	3.75	0.71	3.83	0.86	–.43	2.65	1.11	3.60	0.91	3.5**
Perceived Mental Health	1–5	3.25	0.62	3.42	0.67	1.00	2.96	0.98	3.73	0.96	4.18**
Subjective Well-being	1–6	4.28	0.40	4.35	0.40	.84	4.34	0.37	4.57	0.28	3.24*
Body Awareness	1–5	3.57	0.65	3.54	0.72	–.20	3.80	0.46	3.92	0.64	.55
Body Dissociation	1–5	2.25	0.54	2.16	0.61	–.39	2.30	1.02	2.38	.42	–.24
Mindfulness	1–7	4.62	1.15	4.55	0.78	.00	5.21	1.23	5.20	1.66	–.02

\* $p < .05$ , \*\* $p < .001$

awareness. However, none of the mean differences were statistically significant. For the mothers' and *Promotoras*' groups, participants reported significant increases in subjective well-being ( $t = 3.24$ ,  $p = 0.006$ ), perceived physical health ( $t = 3.59$ ,  $p = 0.003$ ), and perceived mental health ( $t = 4.18$ ,  $p < 0.001$ ). Body awareness increased and body dissociation decreased, but the change was non-significant.

## Discussion

The project evaluated the acceptability, feasibility, and appropriateness of an adapted MBI for immigrant Latina mothers and the staff workers who work with them as well as changes in self-reported health outcomes. Overall, the study was well received and considered relevant for the organization and the population they serve. Focus group results, pre-post survey data, attendance logs, and the fidelity checklists provided insights on successes and areas for improvement.

In terms of health outcomes, we noted reduction in stress levels among the *Promotoras*' and mothers' groups. All three groups reported an improvement in their overall perceived physical and mental health and subjective well-being, though changes in these outcomes were not significant for the staff. The qualitative findings also suggested that this program was beneficial for mental, emotional, and physical health. The findings are consistent with other mindfulness-based stress reduction programs regarding participant's improvement in mental health and ability to relax, to cope with daily stressors by living in the present moment, and to foster self-kindness. Participants from our study cited improvement in family dynamics and their ability to recognize and manage difficult emotions, similar to other programs (Castellanos et al., 2020; Cotter & Jones, 2020; Ryan et al., 2018; Tobin et al., 2021).

Participants' accounts of acceptability, feasibility, and appropriateness of the program were evident for all three

groups of participants. Most staff members, *Promotoras*, and mothers reported valuing and utilizing the skills learned throughout the program outside of the lessons' time. Staff also reported using the exercises in their personal as well as their professional lives. Qualitatively, most participants reported benefits from participation and enjoying opportunities to learn from and share with one another. This program made them feel less alone and, in the case of the mothers and *Promotoras*, less guilty for experiencing certain feelings.

During the sessions, primarily the “connecting with my [migration] story,” participants shared prior traumatic events from their pre-migration and migration experiences, highlighting the need for using a trauma-informed and trauma-based approach when working with this population (Nagy et al., 2022). Even though the migration topic discussion was challenging for the staff members, the mothers and *Promotoras* reported the greatest benefit from this topic. We recommend moving this section to a later week of the curriculum, allowing for two sessions, or providing longer sessions and creating spaces for the mothers to process their emotions, and avoiding triggering questions such as “What were your reasons for migration?” and instead focusing on what they have learned and how they have grown since they migrated to the new country.

Trauma-informed care (TIC), which is based on the knowledge and understanding of trauma and its far-reaching implications (SAMHSA, 2014), has been broadly recognized as an effective framework for working with immigrant Latinx youth and their families (Jolie et al., 2021). In a strengths-based—rather than a deficits-based—approach, TIC can draw from personal and community strengths, to allow for growth and healing after experiencing trauma through trusting environments that actively avoid revictimization (Miller et al., 2019). It has been highlighted by a recent call to action for the mindfulness field to develop and focus on a stronger strength-based and community practice approach when developing and delivering MBIs for the Latinx population (Nagy et al., 2022).

All groups seemed to benefit from learning about the impact of chronic stress and trauma and the tools to counteract it. Some participants reported the surfacing of difficult emotions connected to previous life events after practicing mindfulness, which is suggestive of being fully engaged in the practice. It is a common result from practicing mindfulness that unidentified emotions may surface, and with the appropriate guidance, mindfulness can increase acceptance of emotions and contribute to improved self-awareness and growth (van der Kolk, 1994). Nevertheless, to increase the appropriateness of MBIs with Latinx, experts have noted the importance of doing no harm through these interventions since some practices can be triggering and resurface past trauma (Baer et al., 2019; Van Dam et al., 2018). Additionally, previous research has found that the most successful MBIs are led by experienced facilitators with a mindfulness practice of their own (Kabat-Zinn, 2003; Kabat-Zinn & Hanh, 1990; McKeering & Hwang, 2019; Palacios et al., 2022) and where participants feel they are being supported by the instructor (Apolinario-Hagen et al., 2017). Therefore, it is recommended that the curriculum is delivered by someone with an extensive background and experience on mindfulness and/or psychology, and who understands the culture and background of the population that is being served.

This intervention was delivered online during the period of COVID-19 restrictions. Factors that helped this program achieve success online were (1) the strong, pre-existing relationship with the community organization including the staff, *Promotoras*, and mothers which fostered trust and open communication; (2) the cultural adaptation of the program through a community-based participatory research approach; and (3) the inclusion of a knowledgeable Latina psychologist/mindfulness instructor who was able to deliver the classes in Spanish. The facilitator reinforced this trusting environment by answering questions as needed, providing guidance if staff members were dealing with a particular situation with a client, and helping participants process difficult situations and emotions. The information was culturally sensitive, and it was adapted to avoid re-traumatization and to recognize the effects of trauma in the body (Miller et al., 2019). While there is a growing interest in mind–body health, critical research featuring minorities' perspectives and experiences is rare. Incorporating topics such as cultural humility while developing and implementing MBIs with Latinx immigrant populations is imperative for future research (Fleming et al., 2018, 2022; Nagy et al., 2022).

Moreover, acknowledging and addressing the needs of the focus population within the different levels of the socio-ecological model are also important when implementing these types of programs. In other words, MBIs should be complementary to other programs and not the sole focus. Staff members did highlight an increasing tension for

change to offer more promotional mental health programs, for youth and their families to help clients cope with strong emotions and stress and deal with the shortage of therapists that the organization is currently facing. Though recruiting the organization's staff as participants was not an original objective of the program, it became clear that MBIs could be useful for both staff and clients. This is an innovative approach since MBIs focusing on Latinx immigrant populations seldom include the staff that works with them.

### Limitations and Future Research

The study took place during the COVID-19 pandemic while restrictions for in-person gatherings were in place and unique stressors were present. The implementation of the study could vary in a context where people are more free to meet in-person. The response rate at post-intervention (61.4%) was not as high as expected. The positive results of the intervention could have been overrepresented as we only capture the responses of people who participated actively in the program.

Finally, following a request from the community organization to avoid over-burdening participants with questions, the scales that were used for the most part were the shorter versions of the original scales. We did not include other similar scales to conduct further psychometric analysis to test for reliability and validity of the scales with this population. It is also important to mention that there are serious concerns about the ability of the MAAS instrument to measure all the dimensions of mindfulness (Grossman, 2011; Van Dam et al., 2011). Future research should aim to measure mindfulness as a multi-dimensional construct made up by different facets: observing, describing, acting with awareness, nonreacting, and non-judging (Baer et al., 2006), rather than a unidimensional construct, as it is measured by MAAS. We tried to address this limitation by including both qualitative and quantitative data collection and by providing a trusting environment for participants to share their feelings. Future questionnaires could also include trauma, depression, minority stress, and PTSD measures to fully understand program effects. Future programs could benefit from adding a follow-up assessment and including physiological stress markers in addition to self-reported data.

This study contributes to the understanding of implementing MBIs with immigrant Latinx populations and the staff that works with them. A community-based approach was imperative for the success of the program as well as incorporating TIC through the community organization that was hosting the program. Given that some participants reported the surfacing of difficult emotions or connecting difficult emotions with a previous event in their life as a result of practicing a mindfulness exercise, it is important

that future studies address adverse effects of MBIs in vulnerable populations and provide guidelines on how to best protect participants during these practices (Baer et al., 2019; Van Dam et al., 2018).

Rarely do studies of MBIs with Latinx populations have incorporated the topic of trauma (Cotter & Jones, 2020). More studies are needed to understand the impact of MBIs with immigrant populations that have been exposed to trauma and second-hand trauma and who currently face immigration stressors. While there is a growing interest in mind–body health, critical research featuring minorities' perspectives and experiences is rare (Fleming et al., 2022). Future studies should aim to include a participatory approach that includes the experiences and perspectives of the focus population.

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**Data Availability** All data are available at the Open Science Framework, <https://rb.gy/vd5k8r>.

## Declarations

**Ethics** Approval was obtained from the ethics committee of the University of Maryland. The procedures used in this study adhere to the tenets of the Declaration of Helsinki.

All authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

**Conflict of Interest** The authors declare no competing interests.

**Informed Consent** Informed consent was obtained from all individual participants included in the study.

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