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Evaluation of *Amigas Latinas Motivando el Alma* (ALMA): A Pilot *Promotora* Intervention Focused on Stress and Coping among Immigrant Latinas

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Introduction

As part of increasing immigration to the United States over the decades, Latinos have been settling in the Southeast and Midwest, which are regions beyond traditional immigrant gateway communities.[1] Latinos living in emerging immigrant communities have unique needs given the lack of family and social support; unfamiliar cultural norms; language barriers; immigration status; unstable economic and housing security; social stigma and isolation; and limited access to culturally and linguistically appropriate health care services. [2, 3] Such daily life stressors can take a toll on mental health.[4] Even though the rate of mental illness in Latinos in the United States is similar to or higher than that of other groups, Latinos report receiving less mental health services and having poorer mental health status than other groups.[5, 6] Less than 5% of Latino immigrants with a mental health disorder

receive needed care from mental health specialists and, for the few who do access mental health care, less than 30% return after their first visit.[7]

Several factors contribute to poor mental health status among emerging immigrant Latino communities. Many recent immigrants are of lower educational and socio-economic status which is associated with higher rates of stress and mental illness than those in the highest socioeconomic levels.[8] Having undocumented immigration status can induce anxiety and stress due to stigmatization, isolation and exploitation.[4] Discrimination is also common and associated with worse self-reported mental health status.[9] In addition, barriers to receiving mental health care for Latinos include lack of health insurance, mastery of English skills, Spanish speaking providers, and transportation along with mistrust of interpreters and concerns about stigma.[10, 11] Other potential barriers include cultural and religious beliefs about mental illness and treatment.[12]

Women from Latino communities, both immigrant non-immigrant Latinas, are especially at risk for poor mental health and often do not receive needed services. Latinas report poorer mental health and less experience with mental health services than their White and African American counterpart. [6, 13] Cultural gender role expectations may put Latinas at increased risk of depression. For example, the cultural value of *marianismo* requires that women demonstrate that they are good mothers and supportive wives by putting their families' needs ahead of their own. [6] Latina immigrants tend to put the needs of their family first, and when family discord arises, they are at increased risk of depression because they feel that they are not fulfilling their cultural roles.[6, 14] Women who experience domestic violence are also at high risk for poor mental health,[15] a problem that is magnified for those socially isolated immigrants in new destinations.[7, 16] A study of 309 Latinos living in Southeastern region of the United States revealed that 70% of the sample had experienced an incident of partner abuse in the past year.[17] Latinas are at increased risk for mental health problems as compared to women in other racial/ethnic groups because they often have more exposure to stressors and are less likely to seek and receive mental health services, even in settings with equal access.[6, 18-20]

Given that most health care systems are resource-limited and have weak infrastructures to accommodate radical change, [21, 22] public health professionals are exploring other short-term and collaborative strategies to address Latino mental health care by building on the strengths and assets already existing within the community. One health promotion strategy increasingly cited in the literature as a way to reduce racial and ethnic health disparities is the use of lay health advisor (LHA) interventions.[23-25] LHAs (also known as *promotoras*) are indigenous members of a population, who are recruited and trained to provide health promotion activities for other members in their community, who typically have been marginalized from the mainstream health care system. *Promotoras* can provide a community-based system of care and support that complements, but does not substitute for, the more specialized medical services of healthcare providers. Typically, the social support and influence that occurs between *promotoras* and other community members arises in a spontaneous and informal manner, occurring within the daily routines of social interactions. [26] There are increasing numbers of studies in the literature which highlight *promotora* interventions for Latino health, but mental health promotion has rarely been the main

outcome of interest for these Latino *promotora* interventions.[23, 25] For the purposes of this paper, we focus our study on the impact of the ALMA curriculum on the *promotoras* only. We realize that, typically, *promotora* interventions are designed to help a population which is the recipient of *promotoras'* outreach and education and, in turn, this population is usually the focus of study for potential outcome change. That is why evaluations of *promotora* interventions rarely collect data on health outcomes of the actual *promotoras*. [23] In our study, however, we hypothesized that many of our *promotora* participants might also be dealing with many of the life stressors typical of emerging immigrant communities to which they belong and that they, too, might also find the ALMA curriculum therapeutic in helping them improve their own stress coping skills and mental health outcomes. In addition, other studies have shown that *promotora* roles can improve their level of empowerment to address a health issue [22] and/or internalize the health information that they are responsible for disseminating, and, as a result, modify their own health behaviors as well.[27]

This manuscript describes the evaluation of ALMA (*Amigas Latinas Motivando el Alma/ latina Friends Motivating the Soul*), an intervention offered in three North Carolina counties to educate Latinas about strategies to reduce depression and anxiety among Latina *promotoras* and their Latina peers (*compañeras*), but, as mentioned above, we focus only on *promotora* outcomes in this paper. As discussed in more detail in the next section below, after the ALMA training, *promotoras* are instructed to share what they have learned with their peers, whom we hope will have improved mental health outcomes as a result.

Methods

Study Design and Procedures

Our primary research questions included the following: *Does the ALMA intervention impact:* a) *Promotora knowledge of her role as a Promotora;* b) *Promotora knowledge of stress management;* c) *Promotora depression level;* d) *Promotora stress level;* e) *Promotora social support level;* and f) *Promotora coping mechanisms?*

Our hypotheses are that all of the outcomes of interest would be favorably impacted by participation on the ALMA intervention. To answer these questions, we used a pre-post one group study design to assess the impact of the ALMA intervention. The first part of the ALMA intervention trained *promotoras* on mental health and coping skills in a series of training sessions, using a linguistically and culturally tailored curriculum for recently immigrated Latinas. [11, 28] The second part involved *promotoras* selecting 1-2 peers in the community with whom to share their mental health promotion resources and information on a regular basis (not discussed in this paper). *Promotoras* turned in monthly activity logs documenting the frequency and nature of the outreach activities with their peers. The *promotora* curriculum components were tailored to address the Latino experience by having, for example, all the sessions in Spanish, including reflection of cultural experiences and norms in activities, and focusing on family hierarchy in making decisions regarding family needs. For many of these participants, the traditional Latino social, cultural and familial networks which are usually a source of emotional support for them no longer exist in their new surroundings. Thus, closely developing the curriculum with advisory committee

members who had expertise in the relevant issues for new Latino communities resulted in an intervention which acknowledged and addressed Latinas' daily isolation, lack of knowledge about resources and struggles in a challenging and sometimes hostile social environment. The intervention's overall development was guided by Overlapping Waves of Action (OWA) theoretical framework and executed via a Lay Health Advisor model. [28] According to the OWA model, [29] an individual may take actions to cope with psychological distress in any order or in any combination of the three waves of actions, proposed constructs, in OWA. The first wave of action involves increasing use of self-help strategies that are readily available and may already be in use. This wave of action increases with mild distress but then decreases as distress becomes more severe. The second wave of action involves new self-help strategies that may not be already in use and are adopted specifically to cope with the distress. The third wave of action involves professional help seeking and continues to increase with severity of distress. More in-depth details regarding the design and development of the ALMA intervention have been described elsewhere.[28]

The original training curriculum consisted of ten training sessions, each lasting two to three hours, to train the *promotoras* in mental health, stress and coping skills and reach out to other women in their social network. A bilingual, bicultural licensed clinical social worker (LCSW) facilitated all the training sessions. After the training series was implemented with the first cohort, the training was shortened for the two subsequent *promotora* cohorts to a total of six trainings. The decision to modify the length of the curriculum was mainly based on practical time commitments of *promotoras* and staff along with program budgetary constraints. Partially based on feedback from the first *promotora* cohort at the end of the first training series, we shortened the training timeline by retaining key components of the curriculum that we felt were most effective for knowledge, attitude, and skill changes regarding mental health promotion. We also rearranged some of the content/activities, which originally spanned across multiple sessions, and condensing them into less number of sessions. The general topics of the first five sessions included: Migration Journey; Life in NC and You: Ways of Adjusting to a New Place; Mental Health; Helping Others as a *Promotora*; and Life in NC and Family: Difficulties Adjusting to a New Place. The final session included a graduation event with family and *compañeras*. The curriculum facilitator administered the baseline questionnaire with *promotoras* two to four weeks prior to beginning the training at a location of the participants' choice (usually in their homes or quiet community space area). The facilitator along with other trained bilingual bicultural interviewers then administered the post-intervention questionnaire with participants following the *promotora* training - this time, many of the participants opted to complete the survey by phone for convenience sake.

Setting

The ALMA intervention took place in three communities in central North Carolina (Chatham, Durham, and Wake counties). Chatham County's population is 64, 195 and 13.2% are persons of Latino origin; Durham County has a population of 273,392 and 13.5% are Latino; and Wake County's population is 929,780, and Latinos comprise 10% of that total.[30] Latinos have immigrated to North Carolina because of its strong economy and employment opportunities in the agricultural and construction industries. While there is

some diversity within the North Carolina Latino population, a majority are foreign-born, migrating mainly from Mexico and, secondarily, other Central American countries.[31] The ALMA *promotora* training curriculum was provided to only one community at a time, was conducted in Spanish and hosted in a group setting. The training intervention took place in one county at a local community based organization and at church sites in the other two counties. In the first community training series, a training session occurred once per week until the series was completed. For the remaining two communities, two training sessions were hosted per week until the series was completed.

Participants

Promotoras (n=48) were recruited in each of the three counties through established community contacts including: community activists, religious leaders, other formal community leaders, and agencies serving this population, including representatives from our Community Advisory Committee.[32] Inclusion criteria included being a woman, age 18 and older, who identified their ethnicity as Latina. Even though our preference was to recruit women who were more newly immigrated, we did not designate a specific eligibility criterion to determine that. Instead, we welcomed Latinas who seemed very interested in participating in the intervention because its mental health improvement goals seemed relevant to their own lives. Each participant was assessed directly by the LCSW, who determined whether further assessment or referral was needed for the following conditions: substance abuse or dependence, suicidal ideation or tendencies, psychosis, seizure disorders, or dementia. Expression or history of these conditions excluded participation in the intervention and led to referral to a bilingual bicultural mental health specialist and/or other appropriate mental health agency. In addition, although never formally surveyed on the matter, approximately 1/6 of the *promotoras* mentioned at different points of the program that they had served as *promotoras* in the past for other unrelated health promotion interventions.

Data Collection

Promotoras completed an interviewer administered baseline and follow-up survey either by phone or in-person, based on the women's preference for mode of administration. Informed consent was obtained in a private setting to allow women to refuse to participate and freely ask questions. The survey took, minimum, approximately 30-45 minutes to complete and included questions related to stress, coping, mental health and demographic factors. All surveys were conducted in Spanish by the LCSW or other trained bilingual bicultural interviewers. The study was approved by both the University of North Carolina and Duke University institutional review boards.

Measures

Promotora role and stress management knowledge—*Promotoras* were asked whether they agreed or disagreed with 16 statements. The questions were developed by members of our research team for previous mental health studies in similar settings. Four items related to the *promotoras'* role (for example, “The role of a *promotora* is to be a good listener”). Two items measured *promotoras'* knowledge about how to assist their

compañeras (for example, “Before giving some advice about well-being, start by asking questions”). Ten items assessed *promotoras*' knowledge related to stress management (for example, “I have information about how to manage or reduce stress in my life”).

Depression and stress—Depressive symptoms were measured with the 20-item Center for Epidemiological Studies Depression Scale (CES-D).[33, 34] As with the remaining instruments we used, the CES-D is a validated instrument with a Spanish language version. Respondents are asked to indicate how often a list of statements has been true over the past seven days (rarely/never; some of the time; occasionally; most or all of the time). Items were summed from 0 to 60 with higher scores indicating more frequent depressive symptoms ($\alpha=.94$). Scores of 16-21 indicate moderate levels of depressive symptoms and scores of 22 and higher indicate possible clinically relevant depressive symptoms. We assessed all participants' general stress with the 14-item Perceived Stress Scale (PSS).[35, 36] PSS scores are obtained by reversing the scores on the seven positive items and then summing across all 14 items ($\alpha=.74$).

Social support and coping measures—To measure social support we used the Multidimensional Scale of Perceived Social Support.[37] The measure asks how the participant feels about a list of 12 statements. Response options ranged from “strongly disagree” (1) to “strongly agree” (5). Responses are summed with higher scores indicating a higher level of social support. We assessed a range of coping behaviors using an abbreviated Spanish version of the Brief COPE. [38, 39] Our version consisted of 22 items over 11 domains which includes self-distraction, active coping, denial, substance use, emotional support, venting, positive reframing, planning, humor, acceptance, and religion ($\alpha=.95$). Responses ranged from “I didn't do this at all” (1) to “I did this a lot” (4) and responses for each domain were averaged.

Demographic variables—Demographic measures included age, marital status, years of educational attainment, family income, household size, years of residence in the United States, primary language, years of residence in current city/county, and country of origin.

Data Analysis

We calculated means and frequencies for all variables in order to describe our study population and assess pre- and post-test differences. We compared the frequency and percentages of pre- and post-test correct responses for *promotora* knowledge constructs. For our main outcomes, depression, stress, social support and coping responses, we calculated means and standard deviations for each of the variables at pre- test and then used linear regression to test for significant differences in pre- and post-test scores. We fit the following linear model for each outcome: $E(Y_{it}) = b_0 + b_1 * X_{it}$. Y_{it} is the outcome for participant i at time t (pre- or post-test). The beta coefficient for X_{it} (b_1) is an estimate of the average difference between pre- and post-test across participants. Regression analyses for this paper were generated using SAS software version 9.2 survey procedures to adjust standard errors for within subject correlation.[40]

Results

The characteristics of the *promotoras* are presented in Table 1. Of the 48 *promotoras* that were originally recruited to participate in the intervention, 36 completed a post-test assessment (75%). We recruited 14 in Wake County, 20 in Durham County, and 14 in Chatham County. Demographic characteristics for *promotoras* were similar across intervention sites. The *promotoras* all spoke primarily Spanish, had an average age of 37, most were married or living with a partner (67%), had an average household size of 3.8 and started living in the US at the average age of 28. Nearly 3/4 of the *promotoras* came from Mexico and the remainder mainly came from South American countries. Most *promotoras* had at least a high school education with approximately 2/5 reporting some college or a college degree. According to Fox et al. ,[41] Latinas residing in rural southeastern North Carolina and who participated in their study tended to be first generation immigrants with, on average, a seventh grade educational level. This education profile matches that of the North Carolina census reports [30] which list the Latino population as predominantly younger, foreign-born and with limited English skills and education. The higher level of education reported in our study population, however, might be attributable to the fact that some immigrants may have had better opportunities in their home countries than others and, hence, arrive with doctoral degrees and higher education. Latino immigrants can vary in their background -all the way from educated elites working as doctors and scientists in private and public universities and medical institutions to refugees from Central America and the Caribbean who have lost their hometowns to war and environmental disasters . [42]

Promotora Knowledge

Promotoras' knowledge related to their role, their ability to assist their *compañeras*, and stress management increased for nearly all responses (see Table 2). The response samples were too small for significance tests, so we thought it best to just present frequencies. Those items with the biggest increase in the percentage of women reporting a correct response were the following: having information to manage or reduce stress (45% increase); knowing that both bad and good change can be stressful (23% increase); successfully trying new ways to reduce or manage stress (22% increase); and understanding somatic symptoms of stress (14%).

Depression and Stress

The changes in levels of stress and depressive symptoms are presented in Table 3. At baseline, *promotoras* had mean scores on the CESD above 16 indicating clinically important levels of depressive symptoms. Using linear regression analysis, there were significant changes in the levels of depressive symptoms - a 10 point (50%) reduction from mean at post-test ($p<.01$). Levels of perceived stress also decreased by nearly 4 points (13% reduction) from mean at post-test ($p<0.01$). Thoughts and feelings most commonly reported included not being able to control the way their time was spent, worrying about things they have to accomplish, feeling nervous and stressed, and being upset by unexpected events.

Social Support and Coping

As also indicated in Table 3, mean levels of perceived social support increased at post-test by 6.54 points ($p=0.01$). We also saw significant increases in several types of coping responses, including self-distraction (16%, $p<0.01$), active coping (20%, $p<0.01$), emotional support (21%, $p=0.0$), positive refraining (19%, $p<0.01$), planning (17%, $p<0.01$), and humor (28%, $p<0.01$).

Discussion

Although mental health promotion has rarely been a focus for LHA interventions that target Latino communities,[23, 25] many recently immigrated Latinas are at increased risk for depression and poor mental health due to social isolation, acculturation stressors, language barriers, and discrimination based on ethnicity or presumed immigration status, and limited access to community resources.[6, 32] In this study, we sought to advance knowledge about the impact of an LHA curriculum aimed to alleviate stress and depression and improve coping skills among Latinas. Our findings demonstrate that the ALMA curriculum had a positive impact in enhancing stress management knowledge, increasing social support and adopting stress reducing and coping strategies among *promotoras*. These changes in knowledge and skills were also associated with reduced stress and depressive symptoms ($p<0.01$). There are several factors which may have contributed to the success of the ALMA intervention. First, the intervention was theory-based, a characteristic which has been absent in many published Latino LHA interventions.[25] Secondly, research has shown that mental health interventions designed for specific cultural groups versus groups consisting of a variety of cultural groups are up to four times more effective in achieving desired outcomes.[43] We believe carefully tailoring the intervention to address the unique realities and needs of the emerging immigrant Latina community was an important contributor to *promotoras'* decreased levels of perceived stress, increased levels of perceived social support, and increase in use of many positive coping strategies post-intervention. Nonetheless, for participants who needed or wanted clinical care, this intervention sought to connect women with the resources they needed.

An important finding from our intervention was that *promotoras'* perceived social support levels increased ($p=0.01$). Studies have found that friends and family members can be prominent sources of support and care for Latinos experiencing mental health problems,[44] and ALMA's intent was to build the social support infrastructure for these women. As anticipated, some of the ALMA *promotoras'* social support networks grew stronger as a result of participation in the intervention. Certain *promotoras* reported continuing to interact after the intervention ended, engaging in activities such as creating a cycling club, celebrating special events, taking classes (English or computer) at the community college, and/or meeting monthly for coffee. The increases in perceived social support we observed were comparable to and even slightly higher than other intervention studies which used the same perceived social support measure.[45]

With respect to perceived stress and coping responses, ALMA outcomes also indicate favorable findings. *Promotoras* reported approximately a 13% decrease in perceived stress level and significant increases in six of the eleven coping response domains after

participating in our six-week training intervention. One study by Harris and colleagues, highlighting a six week forgiveness training series led by psychologists for individuals who reported experiencing a hurtful interpersonal transgression, demonstrated an almost identical decrease (14%) in perceived stress level.[46] Another study by Deckro examined the effects of a six-week intervention training young adults on mind/body skills showed a 17% decrease in perceived stress.[47] In terms of positive coping responses, Willert and colleagues[48] found in their randomized control trial of a three month stress management intervention, led by a clinical psychologist for those who experienced work-related stress, that only one of the coping dimensions from the same Brief COPE measure used in their study (positive reframing) revealed significant increase. Interestingly, some of the other coping dimensions measured in Willert's study (i.e., emotional support, active coping, planning) were also specifically addressed in their intervention materials but still did not yield significant change. One potential rationalization for this finding, the authors stated, might be the distinction between attitude-and behavioral oriented coping dimensions. Such a distinction would label the non-affected coping dimensions as behavior-oriented while positive reframing coping dimension (the one that yielded significant change) as attitude-oriented. As such, it is plausible that their intervention was more successful in changing attitude-oriented than behavior-oriented coping mechanisms because, overall, attitudes are easier to modify than actual behavior. Therefore, we are all the more pleased that our study participants demonstrated change in some of the behavior-oriented coping mechanisms as well. It is still important to note, nonetheless, that studies in the literature examining the effects of interventions on stress and stress-coping responses using our chosen PSS and Brief COPE Scale measures are still limited for the emerging immigrant Latina population, even though these measures have been validated for the Latino population [39, 49, 50] and are some of the most widely used, in general, to capture these mental health constructs.[51, 52] As already mentioned, the lives of more newly immigrated Latinas can be filled with significant stressors. Reducing stress can be a challenging prospect, at times, but an alternative might be to help women utilize more effective coping strategies in response to that stress. Our study findings provide useful knowledge to further examine stress and coping responses among this growing population and its association with mental health status.

One of our most critical findings was the ten point reduction (over 50% decrease) in *promotoras'* depressive symptoms ($p<0.01$) -- a striking finding, especially in comparison to other studies assessing depression levels of Latina women. In a randomized controlled trial of a cognitive behavioral intervention to prevent depression (i.e., participants were not clinically depressed) for patients in public sector primary care setting which served predominantly low-income, minority clients, participants' CES-D scores decreased, on, average, by 2.5 points (16% decrease).[53] Another study [11], using a convenience one-group pre-post test sample, tested a cognitive-behavioral group therapy intervention on Spanish-speaking Latina immigrant women who were deemed high-risk for depression based on their baseline CES-D scores (16 or higher). Results revealed a 7 point decrease (23%) in depression level score, but the sample ($n=6$) was too small for meaningful statistical inference. The ALMA results are all the more consequential because the *promotoras'* average baseline depression level score (19.6) was well above the CES-D

threshold (16.0) of indicating a strong propensity for depression.[54] By the end of the intervention, their average scores had dropped to levels that were no longer at increased risk for depression.

In rare cases, ALMA staff encouraged a few women to seek professional help if participants displayed notable symptoms of depression at the start of the intervention. Also, as a result of participation in the program, sometimes participants asked ALMA staff for referrals to mental health service providers; it was never confirmed, however, whether participants actually sought services. Our findings were consistent with Cabassa and Zayas' study[12] on Latino immigrants' intentions to seek care for depression, which suggested that increasing immigrants' understanding of depression and effectiveness of existing treatments is a plausible plan to persuade them to seek out help in times of duress.

As with any intervention, several limitations are worth mentioning. First, because a small percentage (16%) of the *promotoras* had served as *promotoras* in the past for health promotion interventions, these participants most likely entered the intervention with an elevated familiarity of the general role of *promotoras*. Nevertheless, none had been involved with an intervention focusing specifically on mental health promotion. Second, all data was self-reported, therefore social desirability may have been a factor in response although most of these measures have also been used extensively in previous depression studies involving Latino participants.[52, 55, 56]. This bias may also have arisen because the person who facilitated the training sessions also administered many of the post-training surveys. In addition, we assessed the intervention with a pre-post design meaning that there may be elements of being in the group setting that leads to changes in depressive symptoms that do not relate to our curriculum. This factor would be better assessed with a comparison group. This study design also prevents inferences of definitive causality. Finally, we realize that Latinos are a diverse socio-cultural group with varying prevalence and incidence of mental health problems among different Latino ethnic subgroups[57] so our findings are not necessarily generalizable for all Latina immigrant sub-populations.

Implications For Research

Although ALMA revealed promising results, further evaluation is still needed to bolster the evidence that this type of intervention strategy among Latinas is effective for mental health promotion. As mentioned above, the results of this *promotora* intervention should be assessed with a more rigorous study design that includes a comparison group - specifically, a Latina *promotora* cohort who has not received the ALMA mental health curriculum - to understand better whether the positive mental health outcomes can be attributed to generic LHA group dynamics or to the specific ALMA training curriculum itself. Our study evaluated the impact of the intervention on the *promotoras* themselves. Our hope is that these changes contributed to their ability to improve the mental health and coping skills of the women in their social network. However, future studies should assess this impact directly.

Conclusion

Many public sector mental health systems lack resources and capacity to deal with anything but the most severely mentally ill.[58] For Latinos who are not in this category but who still face many life stressors that render them vulnerable to major mental illness, public sector mental health services are largely unavailable. Furthermore, given Latino cultural norms that place a stigma on discussing personal problems outside the family, this population may be left with little support to help them confront profound changes in their lives and those of their families. An intervention such as ALMA does not replace bicultural and bilingual mental health services. Nevertheless, these initial results support the lay health advisor model as a promising pre-clinical intervention method to engage Latinas with positive coping strategies and community resources that support their well-being. Lessons learned from the design, implementation, and evaluation of ALMA can benefit other communities and interventions to address mental health among Latina immigrants more effectively.

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Table 1
Demographic Characteristics of the Promotoras

	Promotoras (n=48)	
	n/mean	%
Age	37.3	-
Marital Status		
Married or living with partner	32	67
Single/divorced/widowed	16	33
Education		
Less than High School	15	31
High School	13	27
Some college/College degree	20	42
Currently in school	18	38
Currently employed	22	46
Family income		
\$285 or less/week	13	28
\$286 - \$430/week	17	36
\$431 - \$575/week	7	15
\$576 or more/week	10	21
Has health insurance	10	21
Household size	3.8	-
Acculturation	2.3	-
Years in the U.S.	9.6	-
Country of origin		
Mexico	34	71
South America	11	23
Caribbean/Central America	3	6
Site		
Durham	20	42
Wake	14	29
Chatham	14	29

Table 2

Pre- and Post-test Frequencies for Promotora Knowledge

	Pre-test (n=48)		Post-test (n=36)	
	Disagree	Agree	Disagree	Agree
Knowledge of promotora role				
The role of a promotora is to be a good listener	7 (15%)	41 (85%)	2 (6%)	34 (94%)
Promotoras are able to recommend specific treatments or medications to people	37 (77%)	11 (23%)	30 (83%)	6 (16%)
Promotoras share information with people	7 (15%)	41 (85%)	3 (8%)	33 (92%)
It is ok for a promotora to share her companeras problems with others	42 (88%)	6 (12%)	33 (92%)	3 (8%)
Knowledge of how to assist companeras				
The best way to help people is to tell them what they need to do.	33 (69%)	15 (31%)	30 (83%)	6 (17%)
Before giving some advice about well being, start by asking questions.	15 (31%)	33 (69%)	5 (14%)	31 (86%)
Knowledge related to stress management				
Laughter can be a healthy way to cope with stress	2 (4%)	46 (96%)	1 (3%)	35 (97%)
Gossip can be a healthy way to cope with stress	46 (96%)	2 (4%)	34 (94%)	2 (6%)
Both good and bad changes can be stressful	14 (29%)	34 (71%)	2 (6%)	34 (94%)
Loss of appetite or a stomachache can be a sign of stress	8 (17%)	40 (83%)	1 (3%)	35 (97%)
When I am feeling discouraged, a healthy way to cope is to yell at someone	44 (92%)	4 (8%)	35 (97%)	1 (3%)
I have information about how to manage or reduce stress in my life	23 (48%)	25 (52%)	1 (3%)	35 (97%)
I have someone who listens to me when I need to talk about my life	9 (19%)	39 (81%)	0 (0%)	34 (100%)
I find that trying new way to manage or reduce my stress makes me feel less stressed	12 (25%)	36 (75%)	1 (3%)	35 (97%)
I am committed to reducing stress in my life	4 (8%)	44 (92%)	1 (3%)	35 (97%)
Being stressed all the time can be harmful for myself and my family	1 (2%)	47 (98%)	0 (0%)	36 (100%)

Table 3
Regression coefficients for change in mental health outcomes for promotoras

	baseline mean	SD	B	R ²	P
Depressive Symptoms					
CES-D (range 0 - 60)	19.60	15.14	-10.74	0.14	<0.01
Stress					
Perceived stress	28.10	4.45	-3.71	0.18	<0.01
Social support					
Multidimensional Scale of Perceived Social Support (range 12-60)	45.89	12.27	6.54	0.08	0.01
Coping Responses (range 1 - 4)					
Self-distraction	2.79	0.82	0.44	0.08	<0.01
Active coping	2.85	0.93	0.58	0.10	<0.01
Denial	1.75	0.77	-0.29	0.04	0.03
Substance Use	1.08	0.33	-0.04	0.00	0.52
Use of Emotional Support	2.82	0.95	0.59	0.10	0.00
Venting	2.23	0.79	-0.36	0.05	0.06
Positive Reframing	2.86	0.98	0.54	0.08	<0.01
Planning	2.88	0.85	0.49	0.09	<0.01
Humor	1.98	1.04	0.55	0.08	<0.01
Acceptance	2.96	0.75	0.09	0.00	0.57
Religion	3.21	0.77	0.07	0.00	0.66