Evaluation of a Fotonovela to Increase Depression Knowledge and Reduce Stigma Among Hispanic Adults

Jennifer B. Unger,
Institute for Health Promotion and Disease Prevention Research, University of Southern California Keck School of Medicine, 2001N Soto Street, MC 9239, Los Angeles, CA 90089-9239, USA

Leopoldo J. Cabassa,
Department of Psychiatry, Columbia University, 1051 Riverside Drive Rm 1715 Unit 11, New York, NY 10032, USA

Gregory B. Molina,
USC School of Pharmacy, 1540 E. Alcazar St. CHP 217E, Los Angeles, CA 90033, USA

Sandra Contreras, and
USC School of Pharmacy, 1540 E. Alcazar St. CHP 217E, Los Angeles, CA 90033, USA

Melvin Baron
USC School of Pharmacy, 1540 E. Alcazar St. CHP 217E, Los Angeles, CA 90033, USA

Jennifer B. Unger: unger@usc.edu; Leopoldo J. Cabassa: cabassa@nyspi.columbia.edu; Gregory B. Molina: gbm@usc.edu; Sandra Contreras: sandracontreras@gmail.com; Melvin Baron: mbaron@usc.edu

Abstract

Fotonovelas—small booklets that portray a dramatic story using photographs and captions—represent a powerful health education tool for low-literacy and ethnic minority audiences. This study evaluated the effectiveness of a depression fotonovela in increasing depression knowledge, decreasing stigma, increasing self-efficacy to recognize depression, and increasing intentions to seek treatment, relative to a text pamphlet. Hispanic adults attending a community adult school (N = 157, 47.5 % female, mean age = 35.8 years, 84 % immigrants, 63 % with less than high school education) were randomly assigned to read the fotonovela or a low-literacy text pamphlet about depression. They completed surveys before reading the material, immediately after reading the material, and 1 month later. The fotonovela and text pamphlet both produced significant improvements in depression knowledge and self-efficacy to identify depression, but the fotonovela produced significantly larger reductions in antidepressant stigma and mental health care stigma. The fotonovela also was more likely to be passed on to family or friends after the study, potentially increasing its reach throughout the community. Results indicate that fotonovelas can be useful for improving health literacy among underserved populations, which could reduce health disparities.

Keywords

Hispanic; Depression; Fotonovela; Stigma; Knowledge; Attitudes; Intentions; Health disparities; Health literacy; Narrative

---

Correspondence to: Jennifer B. Unger, unger@usc.edu.

Introduction

The Hispanic/Latino population in the United States suffers from numerous health disparities including a higher prevalence of diabetes, certain cancers, and depression; lower access to healthcare; and lower utilization of appropriate mental healthcare services [7, 32]. Unfortunately, many Hispanic/Latinos do not receive consistent medical care and advice, and many lack the health literacy to comprehend the health promotion messages they receive from physicians and the media. Clearly, culturally and linguistically appropriate health communication strategies are needed that can deliver health information to this population in an accessible format.

Depression in Hispanic Americans

Estimates of the 1-year prevalence of major depression among Hispanic Americans have ranged from 2 to 7 %; these estimates vary according to country of origin, context of immigration, US area of residence, and demographic characteristics [7, 21]. Relative to Whites, Hispanic adults in the US have a similar lifetime prevalence of depression [20], but they report more depressive symptoms and are less likely to be diagnosed accurately or to receive evidence-based treatment when they present with symptoms of depression [26, 31]. Hispanics are also more likely than non-Latino Whites to underutilize mental health services, and to discontinue treatment prematurely even after adjusting for difference in educational levels, mental health needs, health insurance, and socioeconomic status [23, 36]. Numerous barriers prevent Hispanics from obtaining adequate treatment for depression. Sociodemographic and structural barriers include lack of insurance, language barriers, and limited availability of culturally competent mental health specialists [31]. Cultural barriers include low mental health literacy (knowledge about mental health disorders and treatments); stigmatization of depression; attribution of depression to non-medical causes including *nervios* (nerves), *fallo mental* (mental deficiency or failure), and *locura* (craziness); reluctance to discuss emotional problems with strangers, and reluctance to take antidepressant medication [5, 12, 13, 33]. Culturally competent health education approaches are needed to overcome these barriers and help Hispanics with depression and their families gain access to appropriate treatment.

Entertainment-Education for Populations with Low Health Literacy

Health literacy is the degree to which people have the capacity to obtain, process, and understand health information to make appropriate health decisions [16]. Low health literacy is associated with lower levels of preventive care [25], higher levels of chronic disease [35], and higher health care costs [11]. These problems exist among all racial and ethnic groups, but they are especially important among Hispanic/Latinos because language barriers and low socioeconomic status exacerbate the problem.

Entertainment-education is a promising strategy for delivering health education messages to underserved and low-health-literacy populations [27, 28, 34]. Entertainment-education involves incorporating an educational message into popular entertainment content to raise awareness, increase knowledge, create favorable attitudes, and ultimately motivate people to change behavior. Messages can be delivered through multiple media formats including television, radio, and the print media.

Fotonovelas—small booklets that portray a dramatic story using photographs and captions–represent a popular entertainment medium in many Hispanic cultures. They have been used to communicate health education messages about diabetes [29], pesticides [24], tuberculosis [6], dementia [30], and HIV [8]. Fotonovelas differ from common health education materials, such as informational pamphlets, in that they incorporate cultural norms, dramatic

stories, realistic and attractive characters, simple text, and vivid pictures to engage audiences. Many fotonovelas depict role models performing health-protective behaviors and transformative characters who overcome barriers and learn to practice healthier behaviors, providing an opportunity for social learning. The rationale for presenting health education messages in fotonovela form is that when people are viewing materials primarily for entertainment, they become engaged in the dramatic elements of a story and are more likely to internalize the messages with a minimal amount of counter-arguing [22]. Fotonovelas have the potential to be an effective health education tool because they are attractive, engaging, can use role models to demonstrate desirable behaviors, and can communicate information to low-literacy audiences. Fotonovelas also might have greater "reach" if readers pass them on to their social networks.

Over the past 5 years, our research group has developed a series of fotonovelas for a variety of health conditions (e.g., diabetes, depression, Alzheimer's disease), available in English and Spanish. Each fotonovela conveys key health education messages through a dramatic story with realistic, engaging characters. The scenes are photographed with Hispanic actors in recognizable Los Angeles locations. The goal of the fotonovelas is to deliver health information to the Southern California Hispanic community in a format that is interesting, memorable, culturally appropriate, and accessible to those with limited health literacy and access to healthcare.

The present study describes a longitudinal, randomized evaluation of the effect of the depression fotonovela on knowledge, attitudes, self-efficacy, intentions, and behavior among Hispanic adults in Los Angeles. Participants were students at community adult schools. They were randomly assigned to read the depression fotonovela or an NIH lowliteracy text pamphlet about depression, which conveys similar information in a non-narrative format. We hypothesized that (1) the fotonovela would produce larger improvements than the text pamphlet on depression knowledge, perceptions of stigma, self-efficacy to identify depression, and behavioral intentions; (2) these changes would persist 1 month later; and (3) the fotonovela would be disseminated more widely through the respondents' social networks than the text pamphlet.

Methods

Overview

This study was a longitudinal randomized controlled trial of the effectiveness of a fotonovela to increase depression knowledge, reduce stigma, improve self-efficacy to obtain help for depression, and increase intentions to seek help for depression. Hispanic adults were recruited at community adult schools in Los Angeles and randomly assigned to receive the fotonovela or a text pamphlet about depression. Participants completed surveys before reading the material, immediately after reading the material, and 1 month later. We also assessed the degree to which the fotonovelas and text pamphlets were passed on to others in the participant's social network.

Participants

Participants were students at three community adult schools in the Los Angeles Unified School District (LAUSD). These schools offer English as a Second Language (ESL) classes, citizenship classes, and a variety of vocational classes (e.g., business, computers, automotive repair, machinist, accounting, etc.) The vast majority of students enrolled in these classes are Hispanic/Latino. Students in all classes were invited to participate, except for classes related to medical education (e.g., medical assistant).

Procedure

The baseline and follow-up surveys were conducted in the students' classrooms. A bilingual data collector visited each class, explained the study, and obtained written informed consent. The data collector gave each participant an envelope containing a pretest survey, a fotonovela or text pamphlet, and a posttest survey. The envelopes were shuffled randomly prior to the data collection so that assignment of students to experimental condition would be random.

Participants were instructed to open their envelopes and fill out the pretest survey. After 25 min, they were instructed to put the pretest survey away and read the booklet in the envelope (either a fotonovela or a text pamphlet). After 30 min, they were instructed to fill out the posttest survey for the remaining 20 min of the class period. Approximately 1 month later, the data collectors returned to the adult schools and distributed the posttest survey in the students' classrooms. Students who were absent from class on the day of the follow-up survey had an opportunity to complete the survey during the next week's class.

Reading Materials

The fotonovela, Secret Feelings (*Sentimientos Secretos*), uses photographs and dialogue to tell the story of a Hispanic wife and mother who experiences depression and eventually decides to obtain counseling and medication. Through an engaging story, the fotonovela presents factual information about the symptoms of depression and the use of antidepressants and also addresses other salient issues including the effect of depression on the family and stigma about seeking help. The story is presented in both English and Spanish at a 4th grade reading level. The fotonovela booklet also includes a question and answer page and coupons to a local pharmacy. Copies of the fotonovela are available from the authors upon request.

The development of the fotonovela is described in detail by Cabassa et al. [2]. Two pilot studies of low-income, mostly Spanish-speaking Hispanic adults were conducted to gain a more complete understanding of perceptions of depression and attitudes toward depression treatments among immigrant Hispanic adults [3–5]. The findings from these studies informed the content and storyline development. The first study used a vignette about a person with depression to examine how perceptions of depression, attitudes toward depression treatments, and social norms influenced help-seeking intentions [5]. The second study used focus groups and qualitative interviews to examine illness perceptions, attitudes toward care, and help-seeking behaviors [4]. These pilot studies revealed several barriers to depression treatment among Hispanics, including lack of knowledge about the symptoms of depression, stigma about seeking help for depression, and misconceptions about antidepressant medications. In cooperation with mental health experts, service providers, community members, scriptwriters, photographers, and production specialists, the research team created a fotonovela that used an engaging story about realistic Hispanic characters modeling these concerns. The script was written by a Los Angeles-based Hispanic writer who has produced numerous screenplays and theater productions about life in urban Los Angeles. The script and photographs were shown to Hispanic service providers and researchers during the production process to obtain feedback about cultural appropriateness. The Theories of Reasoned Action and Planned Behavior [1] were used as a framework to address attitudes toward depression treatments and social norms.

The text pamphlet was *Depression* by the National Institute of Mental Health (NIH publication 08 3561). This pamphlet was selected because it is evidence-based, provides basic information about depression symptoms and treatments, is approximately the same length as the fotonovela (26 pages of text in the pamphlet as compared with 30 pages of text

and pictures in the fotonovela), is intended for low-literacy audiences, and is publically available in English and Spanish. Participants received both the English and Spanish version. The participants were instructed to read their booklet in either language.

Measures

Depression knowledge measures included symptom recognition and treatment knowledge. Symptom recognition was assessed with a list of 10 symptoms, including 5 DSMIV depression symptoms and 5 non-depressive symptoms: hearing voices, sleeping too little, eating too much, being full of energy, feeling guilty, feeling agitated, being violent, loss of interest, having hallucinations, and feeling confident. Respondents received one point for each symptom that they identified correctly as a depression symptom or not a depression symptom. Treatment knowledge was assessed with 7 true–false questions adapted from the Griffiths et al. [9] D-Lit measure: "Medications can help someone with depression," "Depression is a medical condition," "People with depression get better by themselves without professional help," "People with depression should stop taking antidepressants as soon as they feel better," "Talking to a counselor can help someone with depression," "Antidepressants are addictive," and "Antidepressant medications work right away." Respondents received one point for each question that they answered correctly. With 10 symptom recognition items and 7 treatment knowledge items, the depression knowledge scale scores could range from 0 (all incorrect) to 17 (all correct).

Antidepressant stigma was assessed with 5 items adapted from the Latino Scale for Antidepressant Stigma [12, 13]: "Prescription medicines for depression are for people who are not strong," "Once someone is prescribed medicines for depression, it means his or her problems are too severe for a solution," "Prescribed medicine for depression is usually given only to people with severe mental disorders," "Prescribed medicines for depression are addictive," "Once someone takes prescribed medicines for depression, they will have to depend on that medicine to function." Responses were rated on a 3-point scale ranging from 1= "No one thinks that way" to 3= "Everyone thinks that way." The score was the mean of the 5 items. Cronbach's alpha was .80.

Stigma about mental health care was assessed with the Stigma Concerns About Mental Health Care [12, 13], which includes 3 items: "I would not want to receive treatment for depression because of being embarrassed to talk about personal matters with others," "I would not want to receive treatment for depression because of being afraid of what others might think," and "I would not want to receive treatment for depression because family members might not approve." Response options were 1= "Disagree" and 2= "Agree." The score was the mean of the 3 items. Cronbach's alpha was .84.

Willingness to seek help for depression was assessed with 4 items: "Would you ask for help from a family member or friend if you were feeling depressed?" "Would you talk to a doctor or mental health professional if you were feeling depressed?" "Would you encourage a family member/friend to talk to a mental health professional if he or she had depression?" and "Would you take a family member or friend to see a doctor or mental health professional if he or she had depression?" These items were modified from an intention to seek depression care scale developed by Cabassa and Zayas [3]. Response options were 1= "No" and 2= "Yes." The score was the mean of the 4 items. Cronbach's alpha was .70.

Self efficacy to identify depression was assessed with two items adapted from Lorig et al. [19]: "How confident are you that you can identify depression in yourself?" and "How confident are you that you can identify someone with depression?" Responses could be rated on a 10-point scale ranging from 1="not at all confident" to 10="very confident." The score was the mean of the 2 items. Cronbach's alpha was .72.

Dissemination of fotonovela through social networks was assessed with two questions written for this study. The first question asked what the respondent did with the fotonovela after the study. Response options included, "I threw it away immediately," "I brought it home but threw it away later," "I kept it to read it again later," "I gave it to someone else," and "I left it in a place where someone else would see it." The second question asked the respondents to estimate how many other people (other than themselves) had read their copy of the fotonovela.

Demographic covariates included age, gender, language used at home (rated on a 5-point scale ranging from "Only English" to "Only Spanish") and education (coded as 0 = less than high school or 1 = high school or more).

Translation

The antidepressant stigma, stigma about mental health care, and willingness to seek care questions were available in Spanish and had been validated in previous studies [3, 12, 13]. The other survey questions were translated into Spanish by a bilingual writer and back-translated to English by a bilingual research assistant, and discrepancies were resolved by consensus. Each survey question was shown in both languages together (e.g., "How old are you?/ ¿Cuántos años tienes?") so participants could read the questions in either language.

Statistical Analysis

Means and frequencies were calculated for all variables, and Cronbach's alphas were calculated for all multi-item scales. Paired *t* tests, stratified by experimental condition (fotonovela vs. text pamphlet) were used to detect significant change from pretest to posttest and from pretest to 1-month follow-up on the outcome variables (depression knowledge, antidepressant stigma, stigma about mental health care, willingness to seek help for depression, and self-efficacy to identify depression). Multilevel linear regression models were used to detect significant differences between the fotonovela and text pamphlet groups on the outcome variables at posttest and 1-month follow-up, controlling for demographic covariates. School was included as a random effect covariate to control for the intraclass correlation of students nested within schools.

Results

Of the students who were enrolled in the classes and present on the day of data collection, 83.4 % agreed to participate. Pretest and posttest data were collected from 185 students. Of those, 157 (85 %) completed the 1-month follow-up. Of those, 18 were excluded from the analysis because they did not self-identify as Hispanic/Latino (3 were White, 3 were African American, 1 was "Other", and 11 did not answer the question). The remaining 139 students were included in the analytic sample. Table 1 shows the demographic characteristics of the sample. Their mean age was 35.8 years (SD = 12.9). Nearly one-half of the participants were female. Most of the participants were born outside the US (84 %), spoke only or mostly Spanish at home (66 %), and had less than a high school education (63 %).

Table 2 shows the effects of the fotonovela on depression knowledge, antidepressant stigma, mental health care stigma, willingness to seek help, and self-efficacy to identify depression at immediate posttest and 1-month follow-up, controlling for demographic characteristics and the random effect of school. At immediate posttest, students who read the fotonovela had significantly higher depression knowledge scores and significantly lower antidepressant stigma scores compared with the students who read the text pamphlet. By the 1-month follow-up, these effects had become nonsignificant, but the fotonovela group had significantly lower mental health care stigma than the text pamphlet group. For the other

variables, there was no significant difference between the two groups at posttest or 1-month follow-up. However, paired comparisons at each timepoint revealed interesting patterns, which are described in detail below.

Depression Knowledge

Figure 1 shows the changes in depression knowledge in the fotonovela and text pamphlet groups. At baseline, there was no significant difference between the two groups in depression knowledge. At posttest, depression knowledge had increased significantly in both the fotonovela group (mean = 2.37 point increase on the knowledge scale, STD = .32, $t = 7.14$, $p < .05$) and the text pamphlet group (mean = .86 point increase on the knowledge scale, STD = .27, $t = 2.92$, $p < .05$). The knowledge change was retained at the 1-month follow-up in both groups ($t = 5.09$, $p < .05$ in fotonovela group, $t = 2.64$, $p < .05$ in text pamphlet group), although knowledge scores decreased slightly in both groups. The knowledge gain in the fotonovela group was significantly larger than that in the text pamphlet group at posttest ($t = 3.20$, $p < .05$) but not at follow-up ($t = 1.56$, $p = .12$).

Antidepressant Stigma

Figure 2 shows the changes in antidepressant stigma in the two groups. At baseline, there was no significant difference between the two groups in antidepressant stigma ($t = .74$, ns). At posttest, antidepressant stigma decreased significantly in the fotonovela group ($t = 3.29$, $p < .05$) but remained constant in the text pamphlet group ($t = .58$, ns). This resulted in a significant difference between the two groups at posttest ($t = 2.80$, $p < .05$). At follow-up, the change in the fotonovela group had regressed toward its baseline level and was only borderline significant ($t = 1.66$, $p = .10$).

Mental Health Care Stigma

Figure 3 shows the changes in mental health stigma in the two groups. At baseline, there was no significant difference in mental health care stigma between the fotonovela group and the text pamphlet group. At posttest, mental health stigma had decreased significantly in the fotonovela group ($t = 2.01$, $p < .05$) and slightly but not significantly in the text pamphlet group ($t = 1.45$, ns). At the 1-month follow-up, mental health stigma had decreased even further in the fotonovela group ($t = 3.03$, $p < .05$) and regressed toward its baseline value in the text pamphlet group, resulting in a significant difference between the groups at 1-month follow-up ($t = 2.59$, $p < .05$).

Self-Efficacy to Identify Depression

Figure 4 shows the changes in self-efficacy to identify depression in the two groups. There was no significant difference between the two groups in self-efficacy to identify depression at any of the time points. Self-efficacy increased significantly from baseline to posttest in both groups ($t = 4.54$, $p < .05$ for fotonovela group, $t = 3.16$, $p < .05$ in text pamphlet group). At 1-month follow-up, both groups remained higher than their baseline values on self-efficacy ($t = 3.31$, $p < .05$ for fotonovela group, $t = 3.00$, $p < .05$ for text pamphlet group).

Willingness to Seek Help for Depression

There were no significant differences between the fotonovela group and the text pamphlet group in willingness to seek help for depression at baseline, posttest, or follow-up, and neither group changed significantly on this variable. This appears to be due to a ceiling effect; 76 % of the respondents already answered "yes" to all of the questions in this scale at baseline, and although this increased to 83 % at posttest and 86 % at 1-month follow-up, the change did not attain statistical significance in either group.

Dissemination of Fotonovela Through Social Networks

Another potential advantage of fotonovelas is that people may be more likely to pass them on to friends and family, thereby increasing their reach. When asked what they did with the reading material after class, participants who received the fotonovela were significantly more likely than those who received the text pamphlet to report that they gave it to someone else or left it in a place where someone would see it, and significantly less likely to report that they threw it away (Chi-square = 16.70, $p < .01$). Figure 5 illustrates this pattern. When asked how many people had read the booklet that they received in the study, the fotonovela group reported that their booklet had been read by a mean of 1.53 other people, as compared with 1.16 among the text pamphlet group ($t = 1.99$, $p < .05$).

Discussion

The results of this study demonstrate the potential usefulness of fotonovelas for health education among low-literacy ethnic minority audiences. Although both the fotonovela and the text pamphlet were effective in increasing depression knowledge and self-efficacy to identify depression, the fotonovela was more effective than the text pamphlet in changing attitudes. Specifically, the fotonovela produced larger decreases in antidepressant stigma and mental health care stigma than the text pamphlet did. For mental health care stigma, the fotonovela group continued to decrease during the month after reading the fotonovela, suggesting that their thoughts and/or discussions over that month reinforced the anti-stigma message in the fotonovela. The decreases in stigma are especially important because Hispanic patients who perceive higher levels of depression stigma tend to be less likely to disclose their depression to family and friends, less likely to take their antidepressant medication, and more likely to miss scheduled appointments [33].

These findings are encouraging because they suggest that health education messages delivered through a culturally appropriate narrative format are more effective than traditional text messages in changing attitudes, while they are at least as successful as traditional text messages in conveying factual information. These results provide initial evidence that cultural-centric narratives that use an entertainment-education approach may be an appropriate communication strategy to change attitudes and reduce stigma toward mental health care among populations with low health literacy [14, 17]. This finding is consistent with previous studies [10, 15, 18], which have concluded that narrative approaches to health education are more effective than textual approaches among underserved populations, across a variety of health conditions.

Another advantage of entertainment-education tools such as fotonovelas is that people who view them may be more likely to share them with friends and family [27]. Our findings supported this notion; the fotonovelas were disseminated more widely through social networks than the text pamphlets were. Thus, fotonovelas may be a useful way to get health information to people who are not actively seeking it, particularly for a stigmatized condition such as depression.

Of course, more intensive interventions than merely reading a fotonovela are probably necessary to convince people to seek treatment or make long-term behavior changes. However, fotonovelas may be useful as a first step to raise awareness of important health issues, reduce stigma, and motivate people to seek help. Fotonovelas may act as a door opener for attitudinal and behavioral change. Future studies should examine fotonovelas in conjunction with more intensive interventions, such as care manager programs or *promotoras* interventions.

Limitations

These findings are subject to several limitations. First, the surveys focused on knowledge and attitudes rather than behavior. Because this was a community sample rather than a clinical sample, very few of the participants would be expected to seek treatment for depression over a 1-month period. Therefore, there was insufficient statistical power to detect group differences in obtaining treatment. Future studies in clinical samples, in larger samples, or with longer follow-up time may be able to detect effects of fotonovelas on treatment-seeking behavior.

Second, the data collectors reported that several students shared their fotonovelas with students in the text pamphlet group after the posttest. This is encouraging evidence that the fotonovela is likely to be disseminated through social networks, but it also may have compromised the study design. The text pamphlet group's inadvertent exposure to the fotonovela may have obscured some of the differences between the two groups at the 1-month follow-up. While we are confident that contamination did not occur between baseline and posttest (because the students completed both surveys in one sitting, before they had a chance to share with friends), we are less confident that the two experimental conditions remained pure at the 1-month follow-up. Because this contamination would reduce the observed differences between the two groups, our estimates are conservative.

Third, it is important to note that this study compared only one fotonovela with one text pamphlet. These findings do not allow us to determine which element of the fotonovela (e.g., the dramatic story, the pictures, the characters, the specific messages) made it superior to the text pamphlet. Future studies should systematically vary these components independently to determine which combinations of these elements produce the greatest change in knowledge, attitudes, and behavior.

Conclusion and Future Directions

Future studies are needed to gain a more complete understanding of how fotonovelas work best, and for whom. For example, it would be useful to know whether they are equally effective across genders, age groups, and levels of education and acculturation. Additional health communication research is also needed to identify the types of characters, storylines, and message content that are maximally effective. Entertainment-education tools such as fotonovelas have the potential to be important tools for improving health literacy and eliminating health disparities among Hispanic/Latinos.

References

1. Ajzen I. The theory of planned behavior. Organ Behav Hum Decis Process. 1991; 50:179–211.

2. Cabassa LJ, Molina GB, Baron M. Depression fotonovela: development of a depression literacy tool for Latinos with limited English proficiency. Health Promot Pract. in press.

3. Cabassa LJ, Zayas LH. Latino immigrants' intentions to seek depression care. Am J Orthopsychiatry. 2007; 77:231–242. [PubMed: 17535121]

4. Cabassa LJ, Hansen MC, Palinkas LA, Ell K. Azúcar y nervios: explanatory models and treatment experiences of Hispanics with diabetes and depression. Soc Sci Med. 2008; 66:2413–2424. [PubMed: 18339466]

5. Cabassa LJ, Lester R, Zayas LH. "It's like being in a labyrinth": hispanic immigrants' perceptions of depression and attitudes toward treatments. J Immigr Minor Health. 2007; 9:1–16. [PubMed: 17001516]

6. Cabrea DM, Morisky DE, Chin S. Development of a tuberculosis education booklet for Latino immigrant patients. Patient Educ Couns. 2002; 46:117–124. [PubMed: 11867241]

7. Delgado PL, Alegria M, Canive JM, Diaz E, Escobar JI, Kopelowicz A, Oquendo MA, Ruiz P, Vega WA. Depression and access to treatment among US hispanics: review of the literature and recommendations for policy and research. Focus. 2006; 4:38–47.

8. Estremera, DY.; Arevalo, M.; Armbruster, J.; Kerndt, P. Parece que va a Llover. Compadre, Ponte el Sombrero (It Looks Like Rain. Put on Your Hat, My Friend): an HIV/STD risk awareness fotonovela for Latino day laborers; American Public Health Association, 130th annual meeting; 11 Nov 2002; 2002.

9. Griffiths KM, Christensen H, Jorm AF, Evans K, Groves C. Effect of web-based depression literacy and cognitive-behavioural therapy interventions on stigmatising attitudes to depression: randomised controlled trial. Br J Psychiatry. 2004; 185:342–349. [PubMed: 15458995]

10. Hinyard LJ, Kreuter MW. Using narrative communication as a tool for health behavior change: a conceptual, theoretical, and empirical overview. Health Educ Behav. 2007; 34:777–792. [PubMed: 17200094]

11. Howard DH, Gazmararian J, Parker RM. The impact of low health literacy on the medical costs of Medicare managed care enrollees. Am J Med. 2005; 118:371–377. [PubMed: 15808134]

12. Interian A, Martinez I, Rios LI, Krejci J, Guarnaccia PJ. Adaptation of a motivational interviewing intervention to improve antidepressant adherence among Latinos. Cult Divers Ethnic Minor Psychol. 2010; 16:215–225.

13. Interian A, Ang A, Gara MA, Link BG, Rodriguez MA, Vega WA. Stigma and depression treatment utilization among Latinos: utility of four stigma measures. Psychiatr Serv. 2010; 61:373–379. [PubMed: 20360276]

14. Kreuter MW, Haughton LT. Integrating culture into health information for African American women. Am Behav Sci. 2006; 49:794–811.

15. Kreuter MW, Green MC, Cappella JN, Slater MD, Wise ME, Storey D, et al. Narrative communication in cancer prevention and control: a framework to guide research and application. Ann Behav Med. 2007; 33:221–235. [PubMed: 17600449]

16. Kutner, M.; Greenberg, E.; Jin, Y.; Paulsen, C. The health literacy of America's adults: results from the 2003 National Assessment of Adult Literacy (NCES 2006–483). Washington (DC): U.S. Department of Education, National Center for Education Statistics; 2006.

17. Larkey L, Hecht M. A model of effects of narrative as culture-centric health promotion. J Health Commun. 2010; 15:114–135. [PubMed: 20390982]

18. Larkey LK, Gonzalez J. Storytelling for promoting colorectal cancer prevention and early detection among Latinos. Patient Educ Couns. 2007; 67:272–278. [PubMed: 17524595]

19. Lorig, K.; Stewart, A.; Ritter, P.; Gonzalez, V.; Laurent, D.; Lynch, J. Outcome measures for health education and other health care interventions. Thousand Oaks: Sage Publications; 1996.

20. Menselson T, Rehkopf DH, Kubzansky LD. Depression among latinos in the United States: a meta-analytic review. J Consult Clin Psychol. 2008; 76:355–366. [PubMed: 18540730]

21. Miranda PY, Schulz AJ, Israel BA, González HM. Context of entry and number of depressive symptoms in an older Mexican-origin immigrant population. J Immigr Minority Health. 2010 epub ahead of print, http://www.springerlink.com/content/188032l33jw7l87m/fulltext.pdf.

22. Moyer-Guse E. Toward a theory of entertainment persuasion: explaining the persuasive effects of entertainment-education messages. Commun Theory. 2008; 18:407–425.

23. Olfson M, Marcus SC, Tedeschi M, Wan GJ. Continuity of antidepressant treatment for adults with depression in the United States. Am J Psychiatry. 2006; 163(1):101–108. [PubMed: 16390896]

24. Peres F, Moreira JC, Rodrigues KM, Claudio L. Risk perception and communication regarding pesticide use in rural work: a case study in Rio de Janeiro State, Brazil. Int J Occup Environ Health. 2006; 12:400–407. [PubMed: 17168229]

25. Scott TL, Gazmararian JA, Williams MV, Baker DW. Health literacy and preventive health care use among medicare enrollees in a managed care organization. Med Care. 2005; 40:395–404. [PubMed: 11961474]

26. Simpson SM, Krishnan LL, Kunik ME, Ruiz P. Racial disparities in diagnosis and treatment of depression: a literature review. Psychiatr Q. 2007; 78:3–14. [PubMed: 17102936]

27. Singhal, A.; Rogers, E. Entertainment-education: a communication strategy for social change. Mahwah: Lawrence Erlbaum Associates; 1999.

28. Singhal, A.; Njogu, K.; Bouman, M.; Elias, E. Entertainment-education and health promotion: a cross-continental journey. In: Singhal, A.; Dearing, JW., editors. Communication of innovations: a journey with Ev Rogers. Thousand Oaks: Sage; 2006. p. 199-229.

29. Unger JB, Molina GB, Baron M. Evaluation of sweet temptations, a fotonovela for diabetes education. Hispanic Health Care Int. 2009; 7:145–152.

30. Valle R, Yamada A, Matiella AC. Fotonovelas: a health literacy tool for educating Latino older adults about dementia. Clin Gerontol. 2006; 30:71–88.

31. Van Voorhees BW, Walters AE, Prochaska M, Quinn MT. Reducing health disparities in depressive disorders outcomes between non-Hispanic Whites and ethnic minorities: a call for pragmatic strategies over the life course. Med Care Res Rev. 2007; 64:157S–194S. [PubMed: 17766647]

32. Vega WA, Rodriguez MA, Gruskin E. Health disparities in the Latino population. Epidemiol Rev. 2009; 31:99–112. [PubMed: 19713270]

33. Vega WA, Rodriguez MA, Ang A. Addressing stigma of depression in Latino primary care patients. Gen Hosp Psychiatry. 2010; 32:182–191. [PubMed: 20302993]

34. Wilkin HA, Valente TW, Murphy S, Cody MJ, Huang G, Beck V. Does entertainment-education work with Latinos in the United States? Identification and the effects of a telenovela breast cancer storyline. J Health Commun. 2007; 12:455–469. [PubMed: 17710596]

35. Williams MV, Baker DW, Parker RM, Nurss JR. Relationship of functional health literacy to patients' knowledge of their chronic disease: a study of patients with hypertension and diabetes. Arch Intern Med. 1998; 158:166–172. [PubMed: 9448555]

36. Young AS, Klap R, Sherbourne CD, Wells KB. The quality of care for depressive and anxiety disorders in the United States. Arch Gen Psychiatry. 2001; 58:55–61. [PubMed: 11146758]
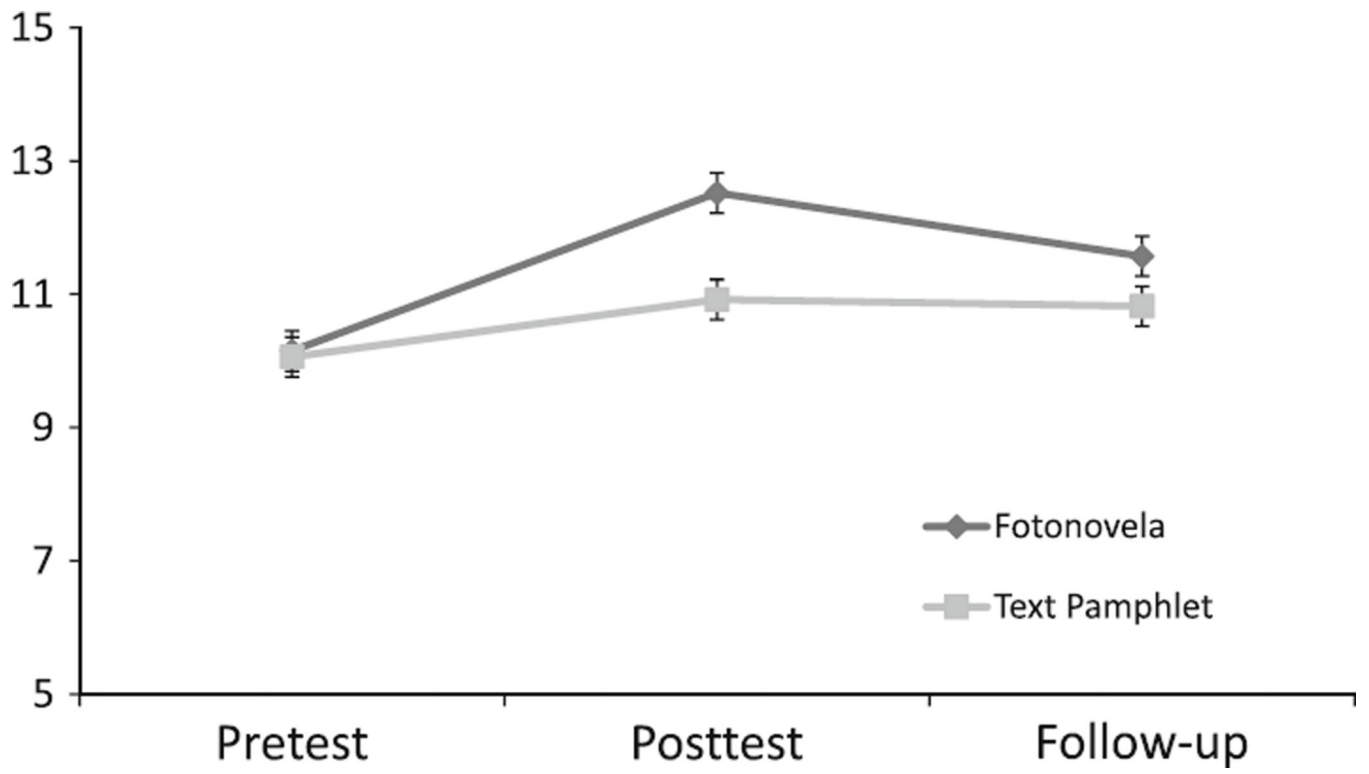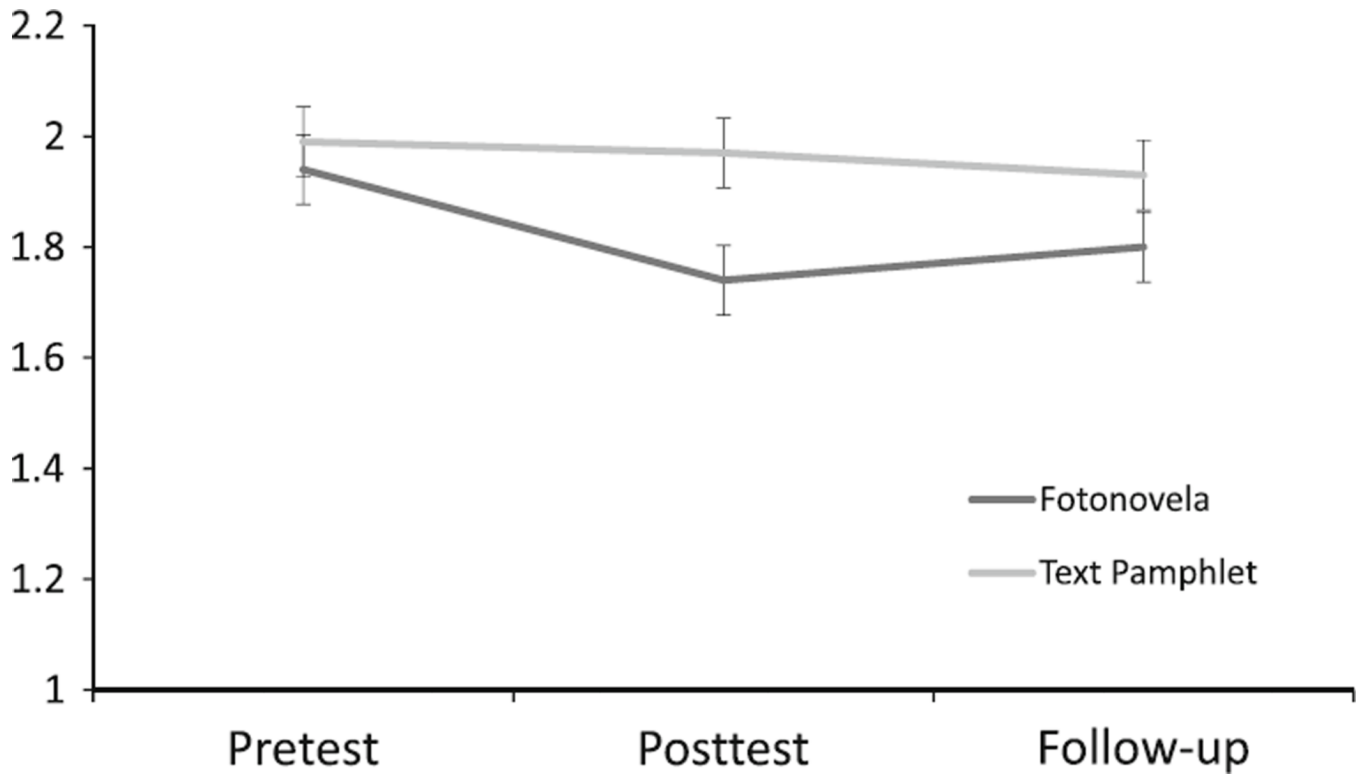
Fig. 1.
Depression knowledge
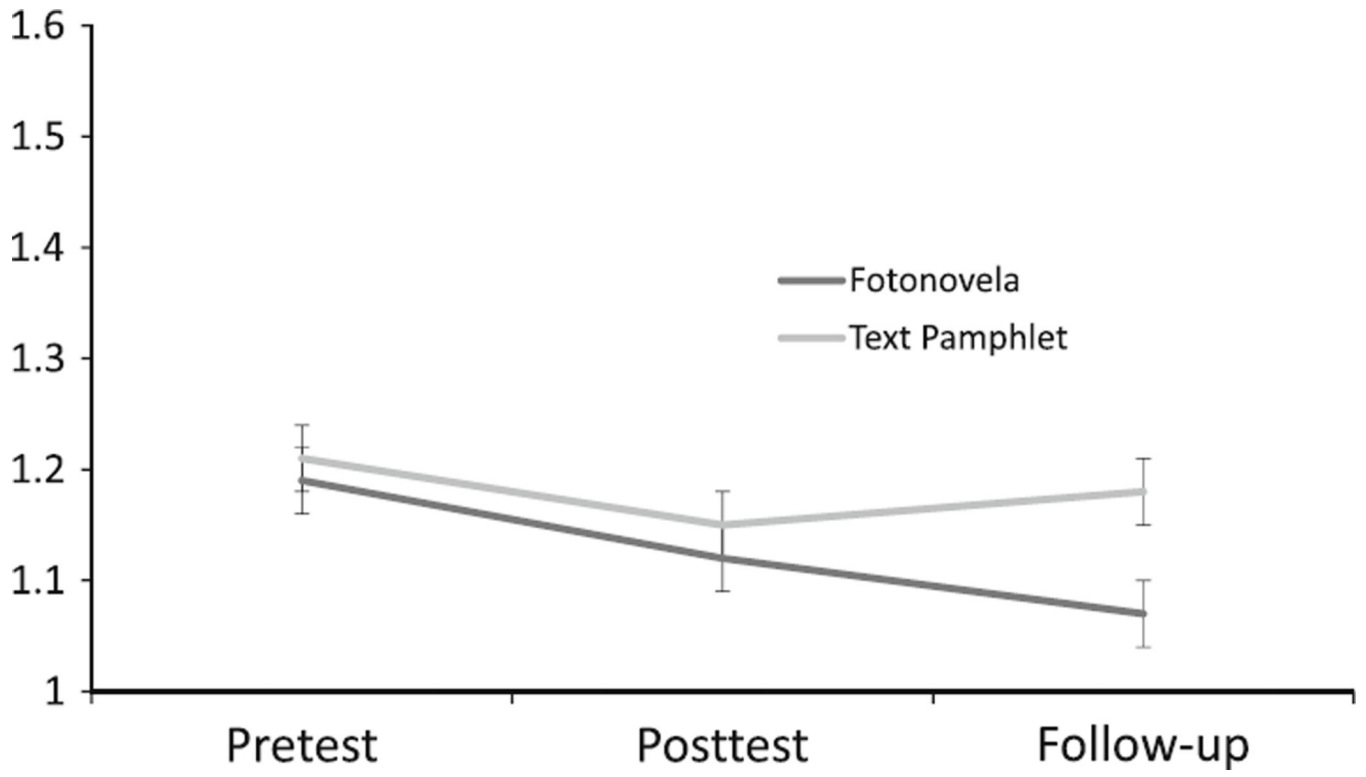
Fig. 2.
Antidepressant stigma
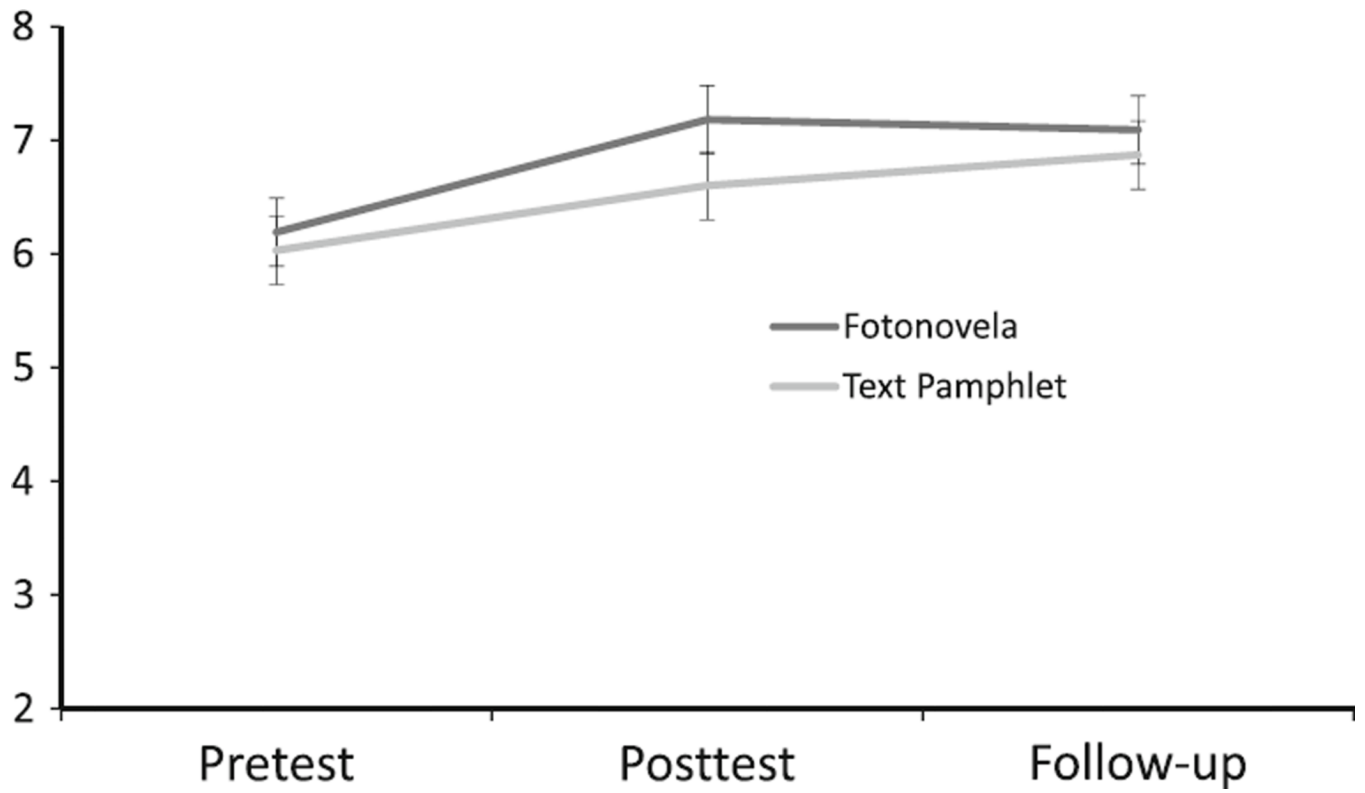
Fig. 3.
Mental health care stigma
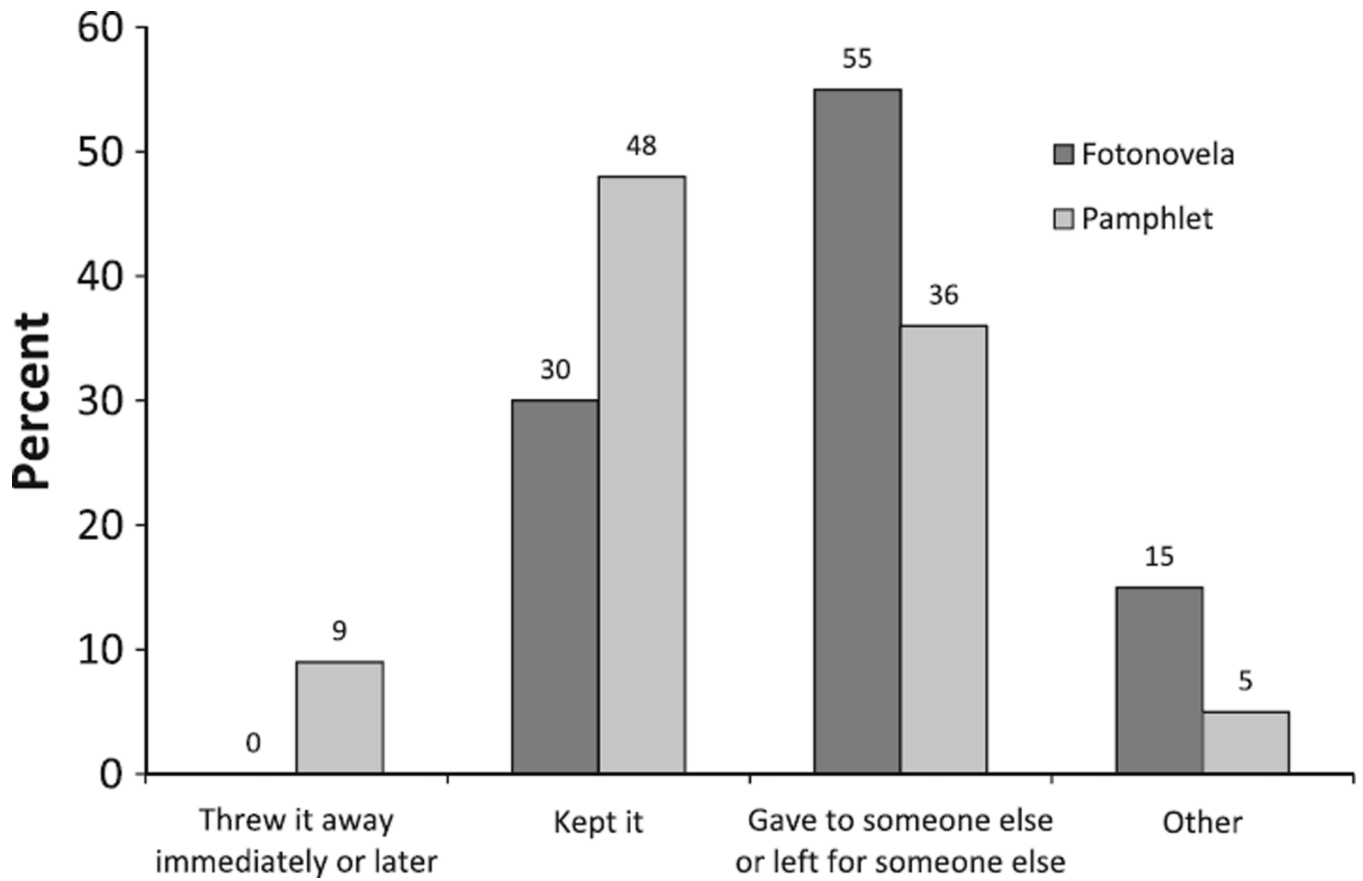
Fig. 4.
Self-efficacy to identify depression

Fig. 5.
What participants did with the material after class

Table 1

Demographic characteristics of participants

	Number	Percent
Age		
18–29	48	34.5
30–39	35	25.2
40–49	29	20.9
50–59	19	13.7
60–90	4	2.9
Missing	4	2.9
Gender		
Female	66	47.5
Male	73	52.5
Country of birth		
Mexico	85	61.2
Guatemala	11	7.9
El Salvador	12	8.6
US	22	15.8
Other	9	6.5
Years lived in US		
Born in US	22	15.8
11 or more years	60	43.2
6–10 years	26	18.7
1–5 years	19	13.7
Less than 1 year	8	5.8
Missing	4	2.9
Language spoken at home		
Only Spanish	39	28.1
Mostly Spanish	53	38.1
English and Spanish equally	38	27.3
Mostly English	6	4.3
Only English	2	1.4
Missing	1	0.7
Education		
Less than high school	87	62.6
High school or more	52	37.4

Table 2

Effects of the depression fotonovela on depression-related knowledge, attitudes, and behavior

	Depression knowledge	Antidepressant Stigma	Mental health care stigma	Willingness to seek help	Self-efficacy
Immediate posttest					
Age	-.11	-.16	.08	.26*	-.00
Gender (female vs. male)	.22*	-.14	-.13	.04	.15
Language	.25*	-.02	.01	-.08	-.02
Education	.30*	.06	-.03	-.18	.42*
Fotonovela (vs. text pamphlet)	.23*	-.33*	-.04	-.00	.02
1-month follow-up					
Age	.04	.02	-.16	-.01	.00
Gender (female vs. male)	.13	-.14	-.02	-.06	.09
Language	.00	.08	-.06	.13	-.05
Education	.15	-.02	-.10	-.02	.28*
Fotonovela (vs. text pamphlet)	.04	-.20+	-.15*	-.04	-.03

Numbers in the table are standardized betas

*
$p < .05$,

+
$p < .10$