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Providing Health Education to Mixtec Farmworkers in California via Workshops and Radio – A Feasibility Study

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Abstract

Originating from one of the poorest areas in Mexico, Mixtecs are one of the largest indigenous groups of workers in California. Providing health education to this group is challenging because many do not speak English or Spanish, and indigenous languages are mainly oral, not written. We explored the feasibility of conveying health information through the radio and in promotora-led workshops. The study included an evaluation of the workshops through surveys before the workshop and 4–6 months later in a subsample of 96 indigenous women.

The number of radio listeners averaged more than 2,000 per month and a total of 500 community members attended a workshop. Among women who completed pre and post-workshop assessments (N=75), there was a statistically significant increase in knowledge of how to get a wellness visit, where to get a free mammogram, and mammography screening guidelines. Women who ever had a mammogram or wellness visit at baseline were significantly more likely to report receipt of this service during the follow-up period than women who never had this service.

Educational workshops and radio are promising and culturally appropriate strategies to provide health information in this community. However, many women need additional assistance to navigate access to health care.

Keywords

indigenous immigrants from Mexico; farmworkers; health education; promotora-led workshops; health promotion via radio

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Background

Originating from one of the poorest areas in Mexico, Mixtecs have become one of the largest indigenous groups of workers in California. An estimated 250,000 indigenous farm-workers and family members are living in California, half of the indigenous farmworker population is Mixteco-speaking (82,000–125,000), and 1/3 of them are located in the Central Coast (Oxnard and Santa Maria). Many are unable to read and write even at a basic level in any language, and speak neither Spanish nor English, but only their native Mixteco language (Maxwell, Young, Crespi, et al., 2015; Mines, 2010).

Mixteco/Indígena Community Organizing Project (MICOP) was founded in 2001 to provide basic aid and encourage the empowerment of Mixtecs living in Ventura County, California. More recently, MICOP expanded services to the Zapotec community, a smaller community that comes from the same area as the Mixtec population but speaks Zapoteco. There is a great desire in the indigenous immigrant community for linguistically accessible and culturally appropriate information about health issues (Garcia-Perez & Merino, 2015; Maxwell, Young, Rabelo Vega, et al., 2015). However, providing health education to this group is challenging because Mixteco and Zapoteco are mainly oral languages. This precludes conveying basic information in pamphlets.

In our prior research we found that a very small percentage of indigenous women are adherent to national breast cancer screening guidelines (Maxwell, Young, Rabelo Vega, et al., 2015). We also showed that seeing a provider for preventive care is a foreign concept for most indigenous women. Other barriers to obtaining health care are lack of health insurance, inability to pay, language barriers, long waiting times, rushed encounters with providers, and seeking western medical care only after home remedies did not work (Maxwell, Young, Moe, Bastani, & Wentzell, 2017). Based on these findings, we decided to increase awareness of cancer, especially of breast cancer, and to promote a wellness visit, because it allows for a comprehensive consultation and may aid in establishing patient-provider communication and trust. Establishing a medical home through a wellness visit can facilitate regular cancer screening as well as increased access to care overall. Having a regular source of care is an important determinant of health. Patients who have a medical home or regular source of care receive a higher level of preventive and chronic illness services and experience fewer health disparities than patients who do not have a regular source of care (Beal, 2007; Enard & Ganelin, 2017). Therefore, our approach to promote both breast health and access to care is consistent with expressed community needs and norms (Maxwell et al., 2017).

MICOP has a long history of employing indigenous promotoras to conduct workshops on a variety of topics. Over the last 15 years, MICOP has trained more than 200 indigenous promotoras who have reached thousands of indigenous farmworkers. However, evaluation of these efforts has been limited. In 2014, MICOP launched its own FM radio station 94.1, Radio Indigena, which may also be a good strategy to relate health information to the indigenous community.

Knowledge is just one of many factors that influence intentions and subsequent behavior, but it is a necessary factor that is included in the Health Behavior Framework and other health

behavior theories, including the Health Belief Model (Bastani et al., 2010; Becker & Maiman, 1974). There are many studies that have utilized promotoras/community health workers (Han, Lee, Kim, & Kim, 2009; Maxwell, Jo, Crespi, Sudan, & Bastani, 2010; Maxwell et al., 2011; Messias et al., 2013; Navarro, Raman, McNicholas, & Loza, 2007; T. T. Nguyen et al., 2010; Robinson-White, Conroy, Slavish, & Rosenzweig, 2010), and there is a more limited literature on the use of community radio, produced by and with community members (Mishra, 1996; Nambiar et al., 2011; B. H. Nguyen, McPhee, Stewart, & Doan, 2010; Reinsma, 2015). Both strategies can increase a community's awareness and knowledge regarding specific health issues and both strategies have been acceptable to various communities that may be hard to reach through print materials.

This pilot study was designed to explore the feasibility of conveying basic health information through the radio station and in a workshop led by promotoras in an indigenous population that has rarely been exposed to western health information, and often relies on traditional remedies that are recommended by healers, elders or family members (Maxwell et al., 2017). The study included an evaluation of the workshops through short surveys immediately before the workshop and 4–6 months later in a subsample of women who attended a workshop. Specifically, we wanted to determine changes in knowledge and health behavior among workshop attendees as well as the feasibility of reaching women in this community for a follow-up telephone interview. To our knowledge, this is one of the first intervention studies in this population.

Methods

Intervention

Drawing upon 15 years of experience in creating and leading health outreach programs among Ventura County's indigenous immigrant population, MICOP developed *Prevenir es Vencer* (To Prevent is to Overcome), a promotora-led cancer education and prevention program. The program consists of four 10-minute modules entitled 1) What is cancer? 2) What can we do to reduce our risk? 3) Breast awareness and mammogram; and 4) Well woman visits (see Box 1). Guided by the longstanding tradition of oral literacy in this population, each module is in question and answer format of two women talking to each other. Modules were initially drafted in very simple Spanish. Then, three indigenous promotoras discussed a draft version of the modules with the first author in Spanish language, made modifications to ensure their cultural and linguistic appropriateness, recorded the four modules in Mixteco and Spanish to be aired on Radio Indigena and also taught the content of the four modules combined as a 1 ½ hour workshop. Workshops were advertised during MICOP community events and through fliers. Promotoras taught each workshop in both Spanish and Mixteco, so limited Spanish speakers could hear each explanation again in Mixteco immediately after the Spanish explanation. This format was also appropriate for Zapoteco speakers who all spoke and understood Spanish. MICOP has in the past successfully conducted workshops on other topics in this format, has extensive experience in offering educational activities to this community, and an indigenous MICOP staff member oversaw all activities. Workshop attendees also received a 2-page Spanish-

language resource guide that provides information on health care access, safety net programs for uninsured adults and discount programs that are offered by clinics in Ventura County.

The three promotoras were between 20 and 30 years of age. Two were Spanish and Mixteco speaking and had completed primary school in Mexico up to 5th grade. One also spoke English and had completed high school. All had received promotora training from MICOP and two of them had worked as promotoras in prior projects. Prior to teaching the workshops, they received training on the workshop content, on resources available in the community, especially low-cost and free health programs and discount programs, on the protection of human subjects in research and in the administration of pre- and post-tests..

Intervention content

The program includes evidence-based practices and recommendations, such as food choices consistent with MyPlate, a nutrition guide published by the US Department of Agriculture, which emphasizes the consumption of fruits, vegetables and whole grains, low fat dairy products, and water instead of sugar-sweetened beverages (http://www.choosemyplate.gov/MyPlate). Recommendations for physical activity are consistent with the 2008 Physical Activity Guidelines for Americans, which recommend at least 30 minutes of moderate-intensity activity per day for adults (http://health.gov/paguidelines/guidelines/adults.aspx). The program recommends exclusive breastfeeding (no additional formula) for the first 6 months of life and continued breastfeeding for a year or longer, according to the American Academy of Pediatrics (https://www2.aap.org/breastfeeding/faqsBreastfeeding.html). While the program does not provide cancer screening, Module 3 explains mammography screening guidelines based on the US Preventive Services Task Force, which recommends biennial screening mammography for asymptomatic women aged 50 to 74 (H. D. Nelson et al., 2009).

Module 4 recommends an annual well woman visit, as recommended by U.S. Department of Health and Human Services and the American College of Obstetricians and Gynecologists (http://www.acog.org/Resources-And-Publications/Committee-Opinions/Committee-on-Gynecologic-Practice/Well-Woman-Visit). If women are documented, they can qualify for Medi-Cal (<350% Federal Poverty Level) and Medicare (age 65+). Both programs pay for annual wellness visits. Women who are undocumented can qualify for a free wellness visit through the Family PACT Program (Family Planning, Access, Care, and Treatment Program for women of childbearing age) or through Every Woman Counts, which is a payer of last resort for women of all ages. The local Federally Qualified Health Centers (FQHCs) are obligated to have discount and charity programs, but these programs are not well advertised and many women are not aware that they can apply for these programs. A well-woman visit includes a full check-up and is focused on preventive care, which may include services like immunizations, age-appropriate screening (mammography, Pap test), and education and counseling to address risk factors.

Assessments

MICOP recorded the number of radio shows that were aired and the number of community workshops that were provided, plus the number of attendees. In addition, an outcome

evaluation was conducted with a subsample of workshop participants who completed a short survey prior to a workshop and at 4 to 6 month follow-up.

Because the workshop provided information on breast health in addition to its focus on wellness visits, only women were included in the outcome evaluation. At the beginning of each workshop, a promotora provided informed consent in Spanish and Mixteco. Surveys were distributed in Spanish for completion. For women who wanted to complete the survey but did not read and write Spanish, promotoras verbally administered the survey in Spanish or Mixteco and recorded the responses on a Spanish-language survey. Prior to the workshops, promotoras discussed how best to translate the surveys into Mixteco, agreed on the translation and practiced administering the surveys in Mixteco. Since the follow-up survey was conducted by telephone, respondents were asked to provide a number where they could be reached. Respondents received a $5 incentive per completed survey. The incentive for the follow-up survey was paid in advance to every woman who completed the baseline survey (women received a total of $10) to avoid the mailing of incentives after the follow-up telephone survey.

Workshop attendees completed pre and post intervention surveys that assessed the following information: demographic characteristics (age, length of stay in the US, formal education completed), access to care (what type of insurance or discount programs has individual used in the past?), Ever had a wellness visit for routine check-up, when not sick? When last? Ever had a mammogram? When last? Knowledge of how to obtain a wellness visit, how to request language support, where to obtain free mammography screening; knowledge of breast cancer screening guidelines; heard about cancer or wellness visits on the radio – how often?

Statistical analysis

Data were analyzed using SPSS Version 24.0. Descriptive statistics, including means and percentages were computed for each variable. Pre- and post-test responses were compared using McNemar test, Chi-square test or Fisher’s Exact test, as appropriate. The study was approved by the University of California Los Angeles Institutional Review Board.

Results

The educational modules were aired on the radio three days a week (Mondays, Wednesdays, Fridays) and three times a day from December 2016 through June 2017 (end of project period) and continue to be aired on Radio Indigena. During the study period, Radio Indigena advanced from an on-line radio station to an on-air local FM station. During the period when Radio Indigena was on-line only, MICOP was able to track the number of radio listeners, which averaged over 2,000 per month. After the transfer to the FM station, tracking was no longer possible. However, among women who completed the follow-up survey (N=75), 68% stated that they had heard about cancer or going to the clinic for wellness visits on the radio and most of these women (88%) had heard it more than once. In addition to the radio, 10 workshops were held between December 2016 and May 2017 at varies locations throughout the greater Oxnard area. A total of 500 community members attended these workshops.

Characteristics of workshop participants

Of the 96 women who completed the baseline assessment, 92 provided a telephone number at which they could be reached for the follow-up interview. On average, women who participated in the baseline assessment were 39 years old (range 21–76 years) and had lived in the US for 11 years (range 6 months to 36 years, see Table 1). Only 16% of all women completed the assessments in Spanish language. The majority (81%) stated that they either had health insurance or used a discount program. Less than half (45%) ever had a wellness visit. Among the 52 women who were 40 years of age or older, 20 women (38%) reported that they ever had a mammogram.

75 women completed the 4–6 month follow-up survey, for a retention of 78%. There were no statistically significant differences between completers and drop-outs. Women who completed the follow-up surveys were about the same age as non-completers. Completers tended to have a longer length of stay in the US (about 3 years longer), tended to be more likely to be Spanish or Mixteco speaking (6 out of 8 Zapoteco speakers dropped out), and tended to be more likely to have health insurance or use a discount program. Of the 20 women age 40 years and older who ever had a mammogram at baseline, 17 completed the study.

Knowledge and behavior at pre-workshop and at 4–6 month follow-up

Among women who completed both pre and post-intervention assessments (N=75), there was a statistically significant increase in knowledge of how to get a wellness visit ($p<.03$) and where to get a free mammogram ($p<.001$; see Table 2). At baseline, most women (85%) already knew that they could request language support at the clinic. At follow-up, 93% knew that they could request language support, but the increase was not statistically significant. 32 out of 75 women who completed the follow-up reported a wellness visit during the past 6 months (43%). The proportion of women who reported a wellness visit in the past 6 months was significantly higher among women who ever had a wellness visit at baseline than among women who never had a wellness visit at baseline (71% versus 20%), which is consistent with expectations (previous behavior is one of the most important predictors of future behavior). The proportion of women who reported a wellness visit in the past 6 months was also significantly higher among women who knew how to get a wellness visit at baseline than women who did not know how to get a wellness visit at baseline (55% versus 28%).

At post-test, 68% of the women reported that they heard about cancer or going to the clinic for wellness visits on the radio. Of those, 88% heard about it on the radio more than once. Among women 40 years and older who completed pre and post-test (N=42), 33% reported receipt of a mammogram in the past 6 months at post-test. Women who ever had a mammogram at baseline were significantly more likely to report a mammogram at post-test than women who never had a mammogram at baseline (65% versus 12%). Among women 40 years and older who completed pre- and post-test (N=42), the proportion who knew the mammography screening guidelines for their age (every 1 or 2 years) increased significantly from 33% at pre-test to 79% at post-test. The proportion of women who stated that they did not know the mammography screening guidelines dropped significantly from 62% at pre-test to 14% at post-test.

Correlates of ever having had a wellness visit

The only statistically significant correlate of ever having had a wellness visit either at baseline or at follow-up was access to care (having health insurance or using a discount program; see Table 3). Age, length of stay in the US and years of education were not significantly related to receipt of a wellness visit.

Discussion:

Our findings suggest that both radio and workshops are promising venues to distribute health information among indigenous farmworkers. Both of these methods are culturally appropriate and consistent with the long oral tradition of information sharing in this indigenous community. Pre- and post-tests with workshop attendees suggest that women learned new information regarding wellness visits and mammograms that were retained over the 4–6 month follow-up period. Knowledge assessments are a key component for community interventions because most interventions that try to influence individuals' health behaviors provide information to increase awareness about the health problem. This in turn may influence health beliefs, intentions and behaviors (Bastani et al., 2010).

We also obtained important pilot information regarding the feasibility of re-contacting study participants. Retention is always an important consideration for program evaluation, especially in populations that have language barriers, long work hours, are unfamiliar with research, and may be undocumented (Farquhar et al., 2014). We had initially planned to obtain from each research participants her own telephone number and the number of two friends. However, this plan met with resistance and we only obtained one telephone number from each woman at which she could be reached. Despite having only one number to contact study participants, we had a very good retention of 78%. Many women in this community have a cell phone, are willing to provide their number, and could be re-contacted 4–6 months after they attended the workshop. Our study demonstrates that this follow-up method is acceptable to this community and feasible for future health programs.

The fact that a large proportion of women reported at baseline that they had used health insurance or a discount program (81%) and that they knew that they can request language support at clinics (85%) may be due to the educational efforts that MICOP has provided at many community events for more than 10 years. However, despite this high level of awareness about these issues, less than half of the women had ever had a wellness visit at baseline. This confirms previous reports that indigenous farmworkers rarely use health care services, and that it is not the norm to see a doctor in the absence of disease (Holmes, 2012; Maxwell et al., 2017) The fact that most of the women who reported a mammogram during the follow-up period had a mammogram at baseline (11/14) suggests that education alone is not sufficient for women to get their first mammogram. In order to get their first mammogram, women may need additional help, e.g., with referrals to low-cost or free screening programs, appointment making, or answering questions they may have about the procedures. Promotoras may be able to provide this type of assistance. Promotoras have been shown to be well accepted in this community (Maxwell et al., 2017) and have been successful in implementing interventions in a number of immigrant communities (Han et al., 2009; Messias et al., 2013; Navarro et al., 2007; A. Nelson, Lewy, Dovydaitis, Ricardo, &

Kugel, 2011; T. T. Nguyen et al., 2010; Pelcastre-Villafuerte et al., 2014; Robinson-White et al., 2010). Consistent with our findings, many of these studies have found increased knowledge and awareness of the health issue they addressed. Moreover, with promotoras or community health workers providing one-on-one assistance and navigation, many studies have shown positive and statistically significant changes in health behavior (Han et al., 2009; Lee-Lin, Nguyen, Pedhiwala, Dieckmann, & Menon, 2015; Maxwell et al., 2010; T. T. Nguyen et al., 2009; Robinson-White et al., 2010; Taylor et al., 2002).

Limitations

All data are based on self-report. While this does not affect responses to knowledge questions, social desirability can affected the report of health behaviors, such as receipt of a wellness visit and mammography screening. Most women who heard about the workshops had some contact with MICOP, and those who volunteered to attend the workshop and to complete the pre- and post-test may not be representative of the community at large. Evaluations were limited to a subsample of women who attended workshops and results may be different among community members who listened to the radio show only. Since only 13 women were 50 years and older, we reported knowledge and behavior related to mammography screening among women 40 years and older.

Conclusions

This small feasibility study is one of the first intervention studies in this community that has not received much attention with respect to health promotion research. Findings suggest that a large number of community members listen to the indigenous radio station, which may be an important source of information especially for monolingual Mixteco speakers. MICOP got some first-hand experience in producing and recording a radio show, which increased their capacity for future health promotion programing. Both the educational workshops and the radio program are promising and culturally appropriate strategies to provide health information and to increase awareness about the importance of wellness visits and preventive care in this community. Findings from this study informed the design of a currently ongoing randomized controlled trial that includes a promotora intervention and a radionovela to promote wellness visits among indigenous women.

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Box 1: Content of the four educational modules:

1. **What is cancer?** Many indigenous language speakers are unfamiliar with the disease. This module discusses the most common forms of cancer (breast, lung, cervical, colorectal, prostate, liver) and general treatment modalities (surgery, radiation, chemotherapy).
2. **What can we do to reduce our risks?** This module introduces important recommendations including good nutrition, avoiding obesity, breastfeeding one's children, getting regular exercise, using sunscreen, and avoiding toxic substances like tobacco and pesticides.
3. **Breast awareness and mammograms.** This module promotes the idea that women should be familiar with their own breasts, particularly in noticing changes such as lumps, unusual nipple discharge, pain. It also discusses who should get mammograms, how often, and lists providers who can help listeners obtain low-cost or free mammograms.
4. **Well Woman Visits:** What is a Well Woman Visit, and why is it important for women of all ages to get this every year? This module discusses the importance of having a medical home and how to apply for health insurance and discount programs that are available to documented and undocumented members of the indigenous population in Oxnard.

Table 1:

Baseline characteristics of participants (N=96)

	Completers (N=75)		Drop-outs (N=21)		Total Sample (N=96)		p
	Mean ± SD		Mean ± SD		Mean ± SD		
Age (years)	38.5 ± 11.3		39.5 ± 8.5		38.7 ± 10.7		0.681[1]
Length of stay in the US (years)	12.1 ± 7.1		8.8 ± 8.1		11.4 ± 7.4		0.097[1]
Years of education (asked at post-test only)	3.1 ± 3.0						
	N	**%**	**N**	**%**	**N**	**%**	
Interview language	14	19	1	5	15	16	0.178[2]
Spanish	53	73	14	67	67	71	
Mixteco	2	3	6	28	8	8	
Zapoteco	4	5	-	-	4	4	
Both Mixteco and Spanish							
Has health insurance or discount program	63	84	15	71	78	81	0.213[3]
Ever had a wellness visit at baseline	34	45	9	43	43	45	0.840[3]
Women 40+ only	N = 42		N=10		N=52		
Ever had a mammogram	17	40	3	30	20	38	0.723[4]

[1] 2 sample t-test;

[2] Fisher's Exact test, comparing Spanish versus all other combined;

[3] Chi-square test;

[4] Fisher's Exact test

Table 2:

Pre- and post-test comparison of participants who completed the follow-up survey (N=75)

	Pre-test N %	Post-test N %	P
Knowledge			
Knows how to get a wellness visit	43 57%	56 75%	**0.03**[1]
Knows that she can request language support at the clinic	64 85%	70 93%	0.11[1]
Knows where to get a free mammogram	16 21%	44 59%	**<0.001**[1]
Had a wellness visit in the last 6 months Women who ever had a wellness visit at baseline (N=34) Women who never had a wellness visit at baseline (N=41) Women who know how to get a wellness visit at baseline (N=43) Women who don't know how to get a wellness visit at baseline (N=32)		32/75 43% 24/34 71% 8/41 20% 23/43 55% 9/32 28%	**0.0001**[2] **0.03**[2]
Heard about cancer or going to the clinic for wellness visits on the radio Heard about it once Heard about it more than once	n/a	51/75 68% 6 12% 44 88%	n/a
Women 40+ only (N=42 who completed pre and post-test)			
Had a mammogram in the past 6 months Women who ever had a mammogram at baseline (N=17) Women who never had a mammogram at baseline (N=25)		14/42 33% 11/17 65% 3/25 12%	**0.0007**[3]
Knows mammography screening guidelines for her age Correct* incorrect does not know	14 33% 2 5% 26 62%	33 79% 3 7% 6 14%	**<0.0001**[4]

[1] McNemar test;

[2] Chi-square test;

[3] Fisher's Exact test;

[4] McNemar test comparing correct versus incorrect/don't know. Every year or every 2 years was classified as "correct"

Table 3:

Correlates of having ever had a wellness visit either at baseline or at follow-up (N=96)

	Women who ever had a wellness visit (N=43)		**Women who never had a wellness visit (N=53)**		**p**
	Mean + SD		Mean + SD		
Age (years)	37.3 ± 11.0		39.9 ± 10.4		0.254[1]
Length of Stay in US	11.3 ± 7.2		11.5 ± 7.6		0.906[1]
Years of education	3.4 ± 2.7		2.87 ± 2.6		0.392[1]
	N	%	N	%	
Has health insurance or uses discount program at baseline Yes (N=78) No (N=18)	41 2	95 5	37 16	70 30	**0.001**[2]
Knows that she can request language support at baseline Yes (N=77) No (N= 19)	37 6	86 14	40 13	75 25	0.196[2]

[1] 2 sample t-test

[2] Chi-square test