

La Clínica del Pueblo: A Model of Collaboration Between a Private Media Broadcasting Corporation and an Academic Medical Center for Health Education for North Carolina Latinos

Jorge Calles-Escandón · Jaimie C. Hunter · Sarah E. Langdon ·
Eva M. Gómez · Vanessa T. Duren-Winfield · Kristy F. Woods

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Abstract *La Clínica del Pueblo*, a health education collaboration between the Maya Angelou Center for Health Equity at Wake Forest University School of Medicine and Qué Pasa Media, Inc., disseminates culturally appropriate health information to the North Carolina (NC) Latino community. The program includes a weekly radio show and corresponding newspaper column addressing four areas: childhood health, adult health, safety, and utilization. The radio show format includes a didactic presentation followed by a call-in question and answer period. Over 200 consecutive weeks of programming have been completed, averaging 11 calls per show. A Latino healthcare resource guide and hotline also provide resource information. Participant demographic information indicates that 50% of the target population comes from Mexico, 60% are women, and 70% of the community is younger than 38 years. There

was an increase in the use of the media as a source of health information over the course of the project, from an initial 33% of respondents to 58% in the last survey. Listenership to *La Clínica del Pueblo* displayed a pronounced increase (18% initial survey to 55% in last survey, $P < 0.05$). We also observed a statistically significant increase in medical knowledge from initial survey to the last survey ($P < 0.001$). By multiple regression analysis, we identified 4 predictors of medical knowledge: order of surveys ($1 < 3$, $P < 0.001$), education level ($P < 0.0001$), female gender ($P < 0.01$) and radio listenership ($P < 0.05$). The first three variables predicted *higher* scores; however, radio listening recognition of our radio program was more common among individuals who had *lower* scores. In conclusion, *La Clínica del Pueblo* is a model for a novel approach that can reach the Latino community to improve medical knowledge and possibly affect health behaviors in a positive manner.

La Clínica del Pueblo project was conducted at the Maya Angelou Center for Health Equity in collaboration with Qué Pasa Media, Inc. Mr. José Isasi is the president and owner of this media network.

J. Calles-Escandón · J. C. Hunter · S. E. Langdon · K. F. Woods
The Maya Angelou Center for Health Equity at Wake Forest
University Health Sciences, Winston-Salem, NC, USA

J. Calles-Escandón (✉)
Department of Internal Medicine, Section on Endocrinology and
Metabolism, Department of Internal Medicine, Medical Center
Boulevard, Wake Forest University Health Sciences,
Winston-Salem, NC 27157, USA
e-mail: jcalles@wfubmc.edu

E. M. Gómez
Children's Hospital, Boston, MA, USA

V. T. Duren-Winfield
School of Health Sciences, Winston-Salem State University,
Winston-Salem, NC, USA

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Background

Migration from Latin America into the United States (US) has increased in recent years. The Census [1] showed that the Latino population increased more than 50% between 1990 and 2000, comprising 12.5% of the population, and is expected to double by 2050 [2]. In North Carolina (NC), the Latino population increased by more than 500% in the last decade, accounting for 6.3% of the NC population [3], and is the fastest growing ethnic group in the state [4].

Latino immigrants face significant challenges related to navigating the US healthcare system. Even those with

functional English proficiency have lower health literacy rates [5] and a greater degree of difficulty communicating with their physicians [6] than their non-Latino counterparts. These barriers complicate the provision of effective health care and health education.

Latinos in the US also face a variety of health-related concerns. Latinos have a higher prevalence of diabetes [7] and are more likely to have hypertension and to be obese, regardless of gender [8], all of which are significant predictors of heart disease. Safety is an important health concern for this population as well; in 2005, 21.2% of all Latino deaths in the state resulted from motor vehicle injuries, many of which were alcohol-related [9].

All of the above indicate the need of unique, non-traditional programs for health education that are sensitive to the cultural and linguistic needs of this population. Since large numbers of Latino immigrants are undocumented, providing health information through private clinics often reaches only a small segment of the Latino population. Mass media provides an outlet for health education that could reach millions of people in their own homes, cars, or workplaces.

Research demonstrates that health information can be distributed effectively to Latino communities, once considered a “hard to reach” population, via mass media. Gombeski et al. [10] found that Latinos living in Texas obtain medical information from doctors and from TV and radio. Hu et al. [11] discovered that Latinos in Baltimore acquire knowledge about HIV from television (42.6%) and radio (19.9%). The 2004 report from the National Council of La Raza’s Institute for Latino Health confirms that, while Latinos get health information by word of mouth, Spanish-language media is one of the best methods to reach them [12]. The “¡Salud!” campaign used radio, television, and print to circulate information to Latino families about the benefits of folic acid with positive outcomes [13].

In Seattle, Washington, half of those queried preferred radio messages to the television [14], and listeners of radio-based “Salsa and Salud” indicated that the messages were beneficial and culturally appropriate [15]. It is therefore not surprising that the Director of the Office for Substance Abuse Prevention made a plea to use the broadcast media for prevention of alcohol and drug abuse among Latinos more extensively [16].

“La Clínica del Pueblo” arose in 2004 as a collaboration between the Maya Angelou Center for Health Equity of Wake Forest University School of Medicine (MACHE) and Que Pasa! Media, Inc., to test the hypothesis that the use of media (radio and newspaper) will increase health knowledge and promote healthy lifestyle choices among Latinos in NC. We used an approach based on the theory of social marketing [17]. The basic premise is that the “packaging” of the product (medical information) with a blend of proper

language (Spanish) and a professional communicator (physician) through an accepted vehicle (Que Pasa) would encourage acceptance and hence promote acquisition of the information. The objective of this paper is to describe “La Clínica Del Pueblo” (LCDP) and our findings pertaining to medical knowledge and radio listening among Latinos in NC.

Theoretical Framework

The framework for LCDP is the Social marketing theory, which comprises the design, implementation and control of programs that aim at increasing the acceptability of a social idea or practice in a target group [17]. The underpinning of Social Marketing theory is that people in the target group (the NC Latino community, for LCDP) will adopt new behaviors or ideas if they feel that something of value is exchanged between him/her and the “marketer,” which in this case is the team of investigators. Thus, one of the goals of a social marketer is to meet consumer needs and wants, which can be products (i.e., health education articles, radio show) or ideas (i.e., need to control diabetes) or both. For our project, the assumption is that the social marketing theory can successfully and efficiently be applied to advance a medical cause, which in our project was the acquisition of medical knowledge to enable NC Latinos to lead healthier lifestyles.

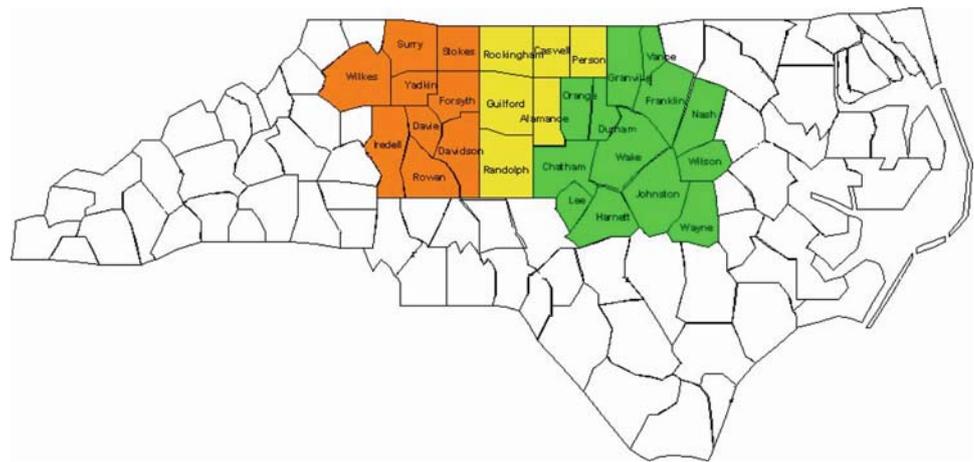
Methods

LCDP has 2 components: (1) radio program and (2) weekly newspaper article. Both the radio station and newspaper are owned and managed by Que Pasa, Inc. This company has more than 10 years of Spanish-language mass media experience in NC with three AM radio stations (encompassing 35 out of 100 NC counties in the Triad, Triangle and Charlotte regions; see Fig. 1) and a weekly newspaper readership of approximately 72,500 people statewide.

Target cities for implementation of LCDP (Greensboro, Winston-Salem, Raleigh, and Durham) were selected according to Latino population density and radio and newspaper reach. A 5-month pre-implementation marketing campaign was employed to raise awareness about the upcoming radio program, including a recognizable logo; advertisements on billboards; flyers in Latino churches, schools, recreational facilities, community centers, and clinics; and inserts in local newspapers.

LCDP started in September of 2004 and continues to date. The medical content addresses four major areas: child health, adult health, safety, and healthcare utilization. Specific topics within these areas were developed via collaboration between the research team, Que Pasa radio staff,

Fig. 1 Reach of Que Pasa Radio in North Carolina among three radio stations: Am 1380 (Forsyth country area), 1470 (Guilford country area) and 1590 (Durham-Wake country area)



and the NC Latino community. An example of curriculum is shown in Table 1

The Radio Program

LCDP radio program is a live, one hour broadcast, with commercial breaks every 13 min. A 10- to 15-min didactic section begins the show, introducing the audience to the weekly topic, followed by a question and answer period of 30–45 min. Live, on-air listener questions are filtered by a

bilingual member of the research team (SL), who selects commentaries and questions that are in consonance with the topic of the day. All questions or comments that are not related to the topic of the day are answered post-program by the host.

The program’s host is a bilingual physician (JCE), and many health care professionals, representatives of community agencies, and community members have served as guest hosts. For years 1 and 2 of the project, a bilingual nurse (E. G) served as a co-host on the radio program.

Table 1 Sample Program schedule for La Clínica del Pueblo

Date	Topic	Category
2/4/2008	Insulin	Adults and Pediatrics
2/11/2008	HIV: what now? After diagnosis	Adults
2/18/2008	Seat belt safety	Safety
2/25/2008	Domestic violence	Utilization
3/3/2008	MRSA	Adults and Pediatrics
3/10/2008	Childhood asthma	Pediatrics
3/17/2008	Pesticides	Safety
3/24/2008	Domestic violence	Utilization
3/31/2008	Cardiovascular disease risk factors	Adults and Pediatrics
4/7/2008	Prostate cancer—testing and diagnosis	Adults
4/14/2008	Back health	Safety
4/21/2008	Child abuse	Utilization
4/28/2008	Family communication	Adults and Pediatrics
5/5/2008	Childhood depression	Pediatrics
5/12/2008	Protection from sun and heat	Safety
5/19/2008	When to use the emergency room	Utilization
5/26/2008	HPV vaccine/cervical cancer	Adults and Pediatrics
6/2/2008	Eating healthy on a budget	Adults
6/9/2008	Water safety	Safety
6/16/2008	Substance abuse (alcohol, illicit drugs, Rx drugs, OTC medications)	Utilization
6/23/2008	Allergies	Adults and Pediatrics
6/30/2008	Prematurity	Pediatrics

The Newspaper Article

The same day of each broadcast, a corresponding newspaper column is published in *Que Pasa* newspaper; this article is prepared by healthcare professionals. The PI (JCE) reviews all articles to ensure they are medically suitable, culturally sensitive, and appropriate for the community. All articles are published in Spanish using colloquial language.

Surveys

Surveys were conducted in Winston-Salem, Greensboro, Raleigh, and Durham in person, in Spanish, among convenience samples of the Latino community by a trained Latina interviewer at 9, 18, and 32 months. The convenience samples were recruited via one-on-one conversations between the interviewer and the community members at their places of work, play, and worship, which helped build trust in this difficult to reach population. The list of specific locations for recruitment was developed by the research team, the interviewer and community members. The methodology used to create and validate the survey has been presented elsewhere [18]. Those surveyed were Latino, greater than 18 years of age, and fluent in Spanish. At the outset of the first interval of survey administration, each participant was requested to provide informed consent. However, data collection efforts proved difficult, demonstrating a 60% refusal rate, since a large segment of those approached did not trust the consent form out of fear of providing identifying data. The project protocol was amended to use a waiver of consent for the second and third intervals of the survey. Results presented in this manuscript pertain to the radio program reach and medical knowledge in the community. Data for healthcare resource utilization and interaction with the healthcare system will be presented in another manuscript.

Toll-Free Hotline

Complementing the radio and newspaper components, a toll-free hotline allows community members to access health-related resource information (location of free and low-cost clinics in their local area, free preventive healthcare screenings, domestic violence centers, shelters, free dental clinics, and other resources). Study personnel answer the calls during business hours; after-hours, callers can leave a message, which is promptly returned.

Data Collection and Analysis

For the radio show, detailed documentation of program content; names of guest presenters; and number of calls

received, nature of questions, and caller demographics are collected. Feedback regarding the newspaper columns and calls to the toll-free hotline are also monitored.

Survey data were coded and compiled in Microsoft Excel (Microsoft Corporation, 2007). Medical knowledge (16 questions) was composed into an aggregate score (number of right answers with a range of 0 to 16). Questions reflected the main areas of health care covered by the radio program and the newspaper articles.

Quantitative survey data were analyzed by a study co-investigator (JH) using SAS Version 9.1 (SAS Institute, 2003). First, univariate analyses using PROC FREQ and chi-square statistics were conducted to measure significance and directionality of relationships between variables. Next, all variables were included in a multiple regression model using PROC REG. The dependent variable in the model was the medical knowledge score; independent variables included age, gender, listenership to LCDP, number of years in the US, education level, and survey year. A p value of less than 0.05 was considered statistically significant.

The Institutional Review Board at Wake Forest University School of Medicine approved this project and provided regulatory oversight.

Results

To-date, the team has completed more than 200 weeks of LCDP radio show programming and corresponding newspaper articles. The show has received an average of 11 calls per radio show (Fig. 2); more than 1300 calls have been logged so far, 56% from women with a mean age of 32 years (range 18–75). The number of calls on the toll-free hotline increased over time (Fig. 2) and currently averages 15 calls per month.

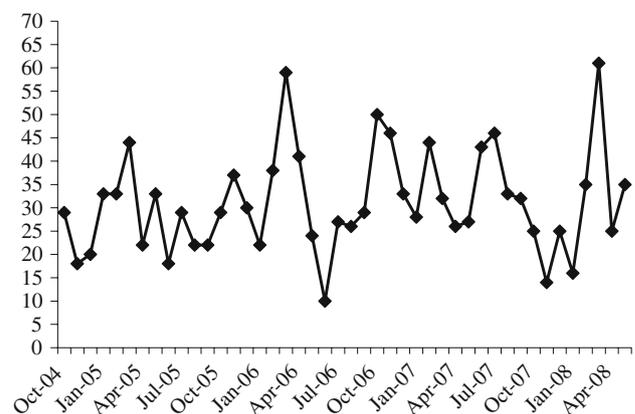


Fig. 2 Number of La Clínica del Pueblo radio calls between October 2004 and May 2008

Table 2 Demographic characteristics of survey participants

Country of origin	50% Mexico 24% El Salvador, Guatemala, Honduras (8% each) 18% Costa Rica and Cuba (9% each) 8% other Latin American countries
Gender	60% women, 40% men
Age	70% ≤38 years old
Education	33% <9th grade education, an additional 33% <high school education, 33% >high school
Time in US	70% ≤6 years
Time in NC	78% ≤6 years
Marital status	22% single, 55% married, 11% divorced, 11% living together
# of adults and children in the home	50% have ≥2 adults in the home, 52% have ≤1 child in the home

The first interval of surveys was completed in May 2005 ($n = 148$), the second in June 2006 ($n = 150$), and the third in June–July 2007 ($n = 150$). Because of inconsistencies with data collection and loss of contact with the Survey #2 interviewer, co-investigators deemed data from Survey #2 unusable; hence, all results presented are from Surveys #1 and #3.

Survey Participant Demographics (Table 2)

Around 50% of the target population comes from Mexico; other countries of origin include El Salvador, Guatemala, Honduras, Costa Rica, Venezuela, and Colombia. Females represent 60% of the sample; 70% were under 38 years old, and a third of the sample had less than a 9th grade education. A majority had been in the USA and in NC less than 6 years (70% and 78%, respectively). About 50% of households have at least 2 adults in the home, and 52% have, at most, 1 child.

Program Reach (Media Utilization)

There was a clear trend demonstrating increased community utilization of the media as a source of health information over the course of the project. In the first survey, 33% of respondents strongly agreed that Spanish language radio and television helped them learn how to take care of their own health and their family’s health. This number rose to 58% in the last survey. Other popular vehicles through which people receive health information were family members (38%), billboards (28%), and hospital or clinic brochures (77%). While overall listenership to Que Pasa Radio itself has remained steady between the first and last surveys (71% Survey #1, versus 69% in

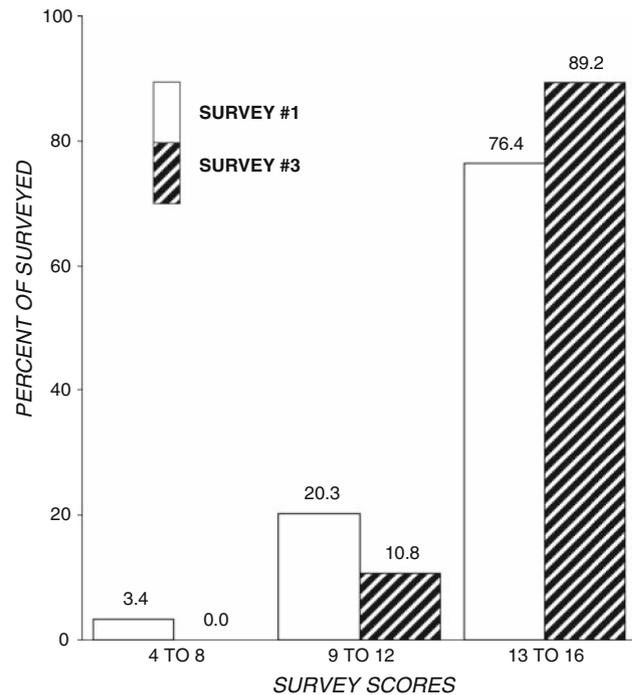


Fig. 3 Medical knowledge survey results (years #1 and #3)

Survey #3, $P > 0.1$), the LCDP radio program listenership displayed a pronounced increase (18% Survey #1, versus 55% in Survey #3, $P < 0.05$).

Medical Knowledge (Fig. 3)

The surveys have demonstrated a statistically significant increase in the aggregate score for medical information knowledge from Survey #1 to Survey #3 ($P < 0.001$). As depicted in Fig. 3, the percent of participants in the survey with scores less than 9 was 0% for Survey #3 and 3.4% for Survey #1. Approximately 89% of Survey #3 respondents had scores greater than 13, as compared with 76% for Survey #1.

Table 3 depicts the results of the multiple regression analysis. The final model identified four variables as predictors of the aggregate medical knowledge score in the surveys: the order of surveys ($1 < 3$, $P < 0.001$), education level ($P < 0.0001$), female gender ($P < 0.01$) and radio listenership ($P < 0.05$). The first three variables predicted higher scores; however, listening to our radio program was more common among individuals who had lower scores. Multivariate results indicated that the relationship between listenership and medical knowledge was confounded by education such that those with a higher education scored higher on the knowledge battery, yet were less likely to listen to the program. Length of residence in the US and age were not predictive of aggregate knowledge score.

Table 3 Predictors of medical knowledge among Latinos in NC from multiple regression analysis

Variable	<i>P</i> value
Survey	<0.0001
Education level	<0.0001
Gender*	0.005
Radio listening**	0.03
Age	0.57
Years at the USA	0.79

* Female gender had a better composite score

** Radio listening had an inverse relation; those who listened less or almost never had better composite score

Discussion

Traditionally, Spanish-speaking communities have been regarded as “hard to reach” due to several barriers: language, socio-economical disadvantages, low level of education, suspicions of figures of authority, fears of deportation, etc. Moreover, journalism in Mexico (origin of the largest contingent of Hispanic immigrants) has been found to be inconsistent and to oversimplify medical issues, which adds to the distrust of the Latino community in regards to medical information obtained via the mass media [19].

However, recent publications support the use of mass media for dissemination of appropriate medical information in Spanish, which may have a positive effect on communities for prevention of chronic diseases [10, 11, 16, 20]. The Hispanic Health Media Project supports the findings described in these papers and demonstrates that an academic medical center can effectively disseminate health information by establishing a partnership with a trusted community entity. An indicator of this acceptance is the continuous stream of phone calls that we receive during the radio program and to the hotline.

Our project aimed to increase medical knowledge among members of the NC Hispanic community using social marketing theory [17], by targeting the perceived needs and values of our audience. Moreover, throughout the years of the program, the topics have been changed by direct consultation with radio listeners and taking into account the questions and messages received. Our survey also helped us glean feedback.

The survey data revealed a substantial increase in the aggregate scores for medical knowledge from the inception and initial implementation to-date. Although it is tempting to attribute the increase to our efforts, the explanation for this increase is not clear. The acquisition of medical knowledge could reflect a secular trend in the target areas and could also be a reflection of exposure to the US healthcare system. However, if this were the case, we

would have expected length of residency in the US to have had a demonstrable statistical relation to the scores. Changes in the admixture of migratory populations can occur very rapidly, and it is possible that an influx of more educated Hispanic immigrants to NC could explain the trend in medical knowledge documented by our surveys. Our survey was not designed to capture shifts in population admixture, so this possibility requires further research.

Finally, it is possible that some selection bias influenced the results, given that participants from Survey #1 had to provide informed consent and those from Survey #3 did not. It is possible that a different demographic of individuals were willing to provide consent, thus skewing the results. Our survey did not collect sufficient information to test for this potential bias.

The increased number of phone calls each year during the LCDP program indicates growing name recognition of the program and possible acceptance among the NC Latino community. Thus, it is tempting to speculate that our program has had a contribution to the increase in medical knowledge documented in the surveys. Unfortunately, the surveys were not designed to establish a cause-effect relationship, and future research will be necessary to understand whether the mass media can be used successfully to affect the level of medical knowledge of the NC Hispanic community.

By design, our program reaches a specific target population—that is, individuals who [1] are able to read the newspaper, and/or [2] have access to Que Pasa radio. Ideally, however, health information will further be disseminated to friends and family members of the program audience through word-of-mouth. Person-to-person interactions have been demonstrated to be successful in spreading health information in Latino communities [21–23], as personal contact is largely valued by this culture. Unfortunately, this mode of transmission of medical information cannot be captured with the survey instruments utilized by our project.

We acknowledge some other limitations in our study. All participants lived in a single geographic area (NC), and therefore may not be representative of individuals living in other parts of the US. However, our survey was community-based, which suggests that it reached a broader spectrum of individuals than would be the case if the survey had been clinic-based. Some individuals experienced difficulty understanding several questions, although the interviewer read each one out loud and attempted to explain what the question meant. This process ensured comprehension if the participant was unable to read. Despite these limitations, this is the first community-based survey to assess community knowledge of healthcare utilization for NC Latinos in their own language.

Future directions for expanding this project might include developing a more structured survey that would measure the impact of the radio program specifically on program listeners and measure the resulting increase in health knowledge and health literacy among the NC Latino population as a whole. Moreover, the project could be expanded to other media outlets, such as television, to increase the audience receiving these targeted messages.

New Contribution to the Literature

The Hispanic Health Media Project demonstrated the feasibility and success of a partnership among an academic institution, a private media corporation, and the Latino community for dissemination of health information. The Latino community has adopted LCDP as a trusted resource, as demonstrated by the increasing number of calls during live broadcast, off the air, and to the hotline. Moreover, LCDP radio listenership has increased over the course of the project.

There are many lessons learned and implications for practice that arose from this study. First of all, Latinos in Forsyth County have a reasonable level of general health knowledge, contrary to prevailing stereotypes. Perhaps most importantly, the Spanish-language media plays a critical role in disseminating health information; however, it is seldom used by health care providers. Our data, as well as data collected by others [10, 11, 16, 20] demonstrate that the radio is accepted by the Latino community and can be utilized for purposes of community education. Because of what we have learned, other organizations will be able to adopt our model to benefit Latinos and other vulnerable communities across the nation.

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