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ORIGINAL RESEARCH

The Effect of Two Church-based Interventions on Breast Cancer Screening Rates Among Medicaid-Insured Latinas

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Abstract

Introduction

Latinas face disparities in cancer screening rates compared with non-Latina whites. The Tepeyac Project aims to reduce these disparities by using a church-based approach to increase breast cancer screening among Latinas in Colorado. The objective of this study was to compare the effect of two Tepeyac Project interventions on the mammogram rates of Latinas and non-Latina whites enrolled in the Medicaid fee-for-service program.

Methods

Two intervention groups were compared: 209 churches in Colorado that received educational printed materials in Spanish and English (the printed statewide intervention) and four churches in the Denver area that received personalized education from *promotoras*, or peer counselors (the *promotora* intervention), in addition to the printed statewide intervention. Biennial Medicaid mammogram claim rates in Colorado before the interventions (1998–1999) and after (2000–2001) were used to compare the effect of the interventions on mammogram use among Latinas and non-Latina whites aged 50 to 64 years who were enrolled in the Medicaid fee-for-service program. Adjusted rates were computed using generalized estimating equations.

Results

Small, nonsignificant increases in screening were observed among Latinas exposed to the *promotora* intervention (from 25% at baseline to 30% at follow-up [$P = .30$]) as compared with 45% at baseline and 43% at follow-up for the printed statewide intervention ($P = .27$). Screening among non-Latina whites increased by 6% in the *promotora* intervention area (from 32% at baseline to 38% at follow-up [$P = .40$]) and by 3% in the printed statewide intervention (from 41% at baseline to 44% at follow-up [$P = .02$]). No significant disparities in breast cancer screening were detected between Latinas and non-Latina whites. After adjustment for the confounders by generalized estimating equations, the *promotora* intervention had a marginally greater impact than the printed statewide intervention in increasing mammogram use among Latinas (generalized estimating equation, $P = .07$).

Conclusion

A personalized community-based education was only modestly effective in increasing breast cancer screening among Medicaid-insured Latinas. Education alone may not be the answer for this population. The barriers for these Medicaid enrollees must be investigated so that interventions can be tailored to address their needs.

Introduction

Disparities in mammogram screening rates have been identified among Latinas, the poor, and those with lower levels of education (1-3). Personal beliefs and practices, access to medical care, low income, and language issues (4-6) are common barriers for people with low use of cancer screening services. Studies conducted specifically with Latinas have identified cultural barriers to obtaining these services, such as "fatalismo," difficulties with acculturation, fear, and embarrassment (7-9). Barriers found to be associated with lack of breast cancer screening among low-income women include older age, low level of education, lack of health insurance, work-related obligations, transportation issues, and lack of recent physician visits (10). Interventions used in the general population aimed at increasing the rates of mammogram screening, such as media campaigns and chart reminders, have shown little effectiveness among Latinas (11,12). Church-based interventions and the use of peer counselors are two recent promising approaches to reaching the Latina community (12-14).

This study describes a pilot project aimed at increasing breast cancer screening among Latinas in Colorado through two church-based interventions. The Colorado Foundation for Medical Care (CFMC) conducted the study with funding from the Centers for Medicare & Medicaid Services (CMS), formerly the Health Care Financing Administration. The study objective was to compare the effect of the two interventions on the mammogram rates of Latinas and non-Latina whites (NLWs) enrolled in the Medicaid fee-for-service program.

To ensure that the interventions in this pilot study were culturally appropriate, the involvement of the community was sought in all phases of the project. The project was named Tepeyac because of its importance to Latinos as the site in Mexico where Our Lady of Guadalupe appeared to Saint Juan Diego. The interventions incorporated themes identified by the community, such as the importance of family, and were delivered through the Catholic church, an integral part of the Latino social network.

This report is the second in a series that examines the impact of the Tepeyac interventions on the mammogram screening rates among Latinas and NLWs enrolled in Medicare, Medicaid, and health maintenance organizations (HMOs). The Tepeyac project has previously demonstrated success in decreasing the disparity between older Latinas and NLWs enrolled in the Medicare fee-for-service program (15). This analysis focuses on the effect of these interventions on younger women covered by the Medicaid fee-for-service program, an optimal vehicle for evaluating education initiatives in this high-risk, low-income group.

Methods

This study has a quasi-experimental design comprised of two groups: 1) 209 Catholic churches that received a printed statewide intervention (PSI), and 2) four Catholic churches in the Denver area that received a *promotora* (peer counselor) intervention (PI) in addition to the PSI. The PSI entailed the display of bilingual printed materials about breast cancer screening in the churches with possible delivery of bilingual short messages to parishioners through the pulpit, church bulletin, or both. The 209 churches that received this intervention were included in the PSI group in an intent-to-treat analysis. The PI entailed education about breast cancer screening delivered in person by *promotoras.*

Implementation of interventions

Printed statewide intervention (PSI)

Focus groups were held with organizations serving Latinas to review published information about barriers Latinas face in obtaining mammograms. The focus groups identified and confirmed the following barriers faced by Latinas: lack of access to care, modesty, and lack of time because of primary role as family caretaker. Previously identified barriers in the literature, such as strong sense of family (13,16), were also confirmed. Materials for the intervention printed by the National Cancer Institute (NCI) reflected the pre-identified theme of a sense of family with the chosen message, "Do it for you. Do it for your family." The materials were enhanced by adding contact information for the local Colorado Women's Cancer Control Initiative (CWCCI), a program administered by the Colorado Department of Public Health and Environment and funded by the Centers for Disease Control and Prevention (CDC). The CWCCI provides referrals and free mammograms to eligible women.

After an initial contact by the archdioceses, the churches were mailed an intervention package containing a letter

describing the Tepeyac Project; the NCI educational materials about breast cancer screening; a display unit; short camera-ready messages in English and Spanish to be delivered from the pulpit, published in the church bulletins, or both; and a fax–back form asking at which level they would agree to participate (display materials, publish messages, deliver messages from pulpit). The first mailing to all churches in the state occurred in March 2000, a second in October 2000, and a third in February 2001. The second and third mailings included issues of the Tepeyac Project newsletter (available from www.cfmc.org) (15).

Information about the level of church participation was obtained by phone call, personal visit, or fax after the first mailing and was available for 154 (72%) of the 213 participating churches (209 in the PSI and 4 in the PI). Of the 154 churches, 61 (40%) displayed the printed materials, 8 (5%) published messages in the bulletin, and 85 (55%) did both. In addition to these activities, 18 (12%) made pulpit announcements. The level of participation was undetermined at 47 churches, and 12 churches declined to participate.

Promotora intervention (PI)

The four churches that received the PI are all in the Denver area. The *promotoras* selected these churches because the parishioners and priests had expressed interest in having them come and educate women. The churches, located in largely Hispanic areas, are central reference points to Latinos in Colorado. The PI was an expansion of a pre-existing community-based intervention initiated by La Clinica Tepeyac that provides health care to the local underserved Hispanic population. Each *promotora* was trained using a standardized curriculum developed by La Clinica Tepeyac and assigned a specific church to visit monthly. *Promotoras* approached their peers after Sunday masses and during church fairs and other church-related activities. La Clinica Tepeyac coordinated the *promotoras'* work and paid their salaries. The *promotoras* also facilitated health groups, or *platicas,* where a group of women met at one another's houses to discuss breast health. This intervention started in 2000 and is ongoing.

Reach of interventions

According to parish register data from the Archdiocese of Denver, the size of the congregations in the four parishes that received the PI varied from 1950 to 5000 total parishioners, of whom 32% to 84% were Latinos, for a potential of 9427 Latino parishioners reached by the PI. Also based on these parish register data, we estimate that the PSI reached a minimum of 349,340 parishioners, of whom 34,419 were Latinos (with an average church size of 3235 parishioners). Latinos are less likely to register than whites; therefore, these numbers are likely to underestimate the number of Latinos potentially reached by these church-based interventions (17).

Study population

The eligibility criteria for this study were: women aged 50 to 64 years, enrolled in the Colorado Medicaid fee-for-service health insurance program (not enrolled in an HMO), and enrolled for more than 18 months (continuously or as a sum of individual enrollment periods) during the baseline period January 1998 through December 1999 and similarly during the follow-up period January 2000 through December 2001. Subjects enrolled in a primary care case management (PCCM) program reimbursed by fee-for-service were included in the database for analysis.

Exposure to the PI or PSI among study subjects was determined by zip codes. Women in the study living in the three zip codes of the four churches visited by the *promotoras* were assumed to be exposed to the PI, whereas women living in remaining zip codes were assumed to be exposed to the PSI. While using zip codes to assess the intervention effects may be a methodological limitation, many churches do not release individual-level parish membership data, as it is potentially damaging to the trusting relationship required to implement this intervention. According to the Archdiocese of Denver's Hispanic Ministry, a large proportion of Latinos attend their neighborhood church (i.e., in the same zip code) because of a recent increase in the number of churches offering masses in Spanish.

Mammogram screening rates

Mammogram claims obtained from Medicaid fee-for-service administrative data were used for the analysis. We compared the rates obtained during the baseline period before the intervention (January 1998–December 1999) with those obtained during a follow-up period (January 2000–December 2001) for Medicaid-enrolled women in each of the intervention groups.

Mammogram use was determined by having the claims with any of the following codes: *International Classification of Diseases, Ninth Revision, Clinical Modification* (*ICD-9-CM*) procedure codes 87.36, 87.37, or diagnostic code V76.1X; Healthcare Common Procedure Coding System (HCPCS) codes GO202, GO203, GO204, GO205, GO206, or GO207; *Current Procedural Terminology* (CPT) codes 76085, 76090, 76091, or 76092; and revenue center codes 0401, 0403, 0320, or 0400 in conjunction with breast-related *ICD-9-CM* diagnostic codes of 174.x, 198.81, 217, 233.0, 238.3, 239.3, 610.0, 610.1, 611.72, 793.8, V10.3, V76.1x.

The outcome variable was mammography screening status as determined by the above codes. The main predictors were ethnicity as determined by the Passel-Word Spanish surname algorithm (18), time (baseline and follow-up), and the interventions. The covariates collected from Medicaid administrative data were date of birth (to determine age); total length of time on Medicaid (determined by summing lengths of time spent within dates of enrollment); length of time on Medicaid during the study periods (determined by summing only the lengths of time spent within dates of enrollment corresponding to study periods); number of spans of Medicaid enrollment (a span defined as a period of time spent within one enrollment date to its corresponding disenrollment date); Medicare–Medicaid dual eligibility status; and reason for enrollment in Medicaid. Reasons for enrollment in Medicaid were grouped by categories of aid, which were: 1) old age pension, for persons aged 60 to 64; 2) disabled or blind, representing those with disabilities, along with a small number of refugees combined into this group because of similar mammogram screening rates; and 3) those receiving Aid to Families with Dependent Children (AFDC).

Statistical analysis

The chi-square test or Fisher exact test (for cells with expected values less than 5) was used for categorical variables, and ANOVA testing was used on continuous variables with the Welch modification when the assumption of similar variances did not hold. An analysis with generalized estimating equations (GEE) was conducted to determine intervention effects on mammogram screening before and after intervention while adjusting for differences in demographic characteristics, dual Medicare–Medicaid eligibility, total length of time on Medicaid, length of time on Medicaid during the study periods, and number of Medicaid spans enrolled. GEE analysis accounted for clustering by enrollees who were present in both baseline and follow-up time periods. About 69% of the PI enrollees and about 67% of the PSI enrollees were present in both time periods.

GEE models were used to directly compare PI and PSI areas on trends in mammogram screening among each ethnic group. The hypothesis for this model was that for each ethnic group, the PI was associated with a larger increase in mammogram rates over time than the PSI. To test this hypothesis, the following two statistical models were used (one for Latinas, one for NLWs):

$$\text{Logit } P = \alpha + \beta 1\text{time (follow-up vs baseline)} + \beta 2\text{intervention (PI vs PSI)} + \beta 3\text{ (time*intervention)} + \beta 4\ldots n\text{ (covariates)},$$

where "P" is the probability of having a mammogram, "α" is the intercept, "β1" is the parameter estimate for time, "β2" is the parameter estimate for the intervention, and "β3" is the parameter estimate for the interaction between time and intervention. A positive significant interaction term suggests that the PI had a greater impact on mammogram screening over time than the PSI among that ethnic group.

An analysis was also conducted to measure the effect of each of the interventions on reducing the disparity of mammogram screenings between ethnic groups. This analysis involved creating two separate models for each of the interventions (PI and PSI) to test two hypotheses: 1) Among women exposed to the PI, screening disparity between Latinas and NLWs is smaller at follow-up than at baseline; and 2) Among women exposed to the PSI, screening disparity between Latinas and NLWs is smaller at follow-up than at baseline. The two statistical models used (one for the PI, one for the PSI) were:

$$\text{Logit } P = \alpha + \beta 1\text{time (follow-up vs baseline)} + \beta 2\text{ethnicity (Latina vs NLW)} + \beta 3\text{ (time*ethnicity)} + \beta 4\ldots n\text{ (covariates)},$$

where "P" is the probability of having a mammogram, "α" is the intercept, "β1" is the parameter estimate for time, "β2" is the parameter estimate for ethnicity, and "β3" is the parameter estimate for the interaction between time and ethnicity. A significant, positive two-way interaction would indicate that for each intervention, mammogram screening improvement (before and after) was significantly greater in Latinas than in NLWs.

Results

Study subjects

The baseline period included 16,277 women aged 50 to 64, of whom 5865 (36%) were enrolled in Medicaid HMO and subsequently removed, leaving 10,412 with fee-for-service reimbursements for analysis. Analyses were restricted to the 6696 (64%) women enrolled in Medicaid fee-for-service longer than 18 months (Table 1). Latinas represented 22% of this Medicaid population, whereas NLWs represented 57%. More than half of the enrollees in this database (59%) were disabled, a small minority (2%) received AFDC, with the remaining receiving old age pensions (39%). The disabled category consisted of enrollees with disabilities and enrollees who are blind. The majority of enrollees receiving old age pensions and the majority of disabled enrollees were dually eligible for Medicare and Medicaid, in contrast to those receiving AFDC, where the majority were eligible for Medicaid only. Sixty percent did not have any mammogram procedure during the baseline study period. Similar characteristics were observed in the follow-up study population (data not shown).

The baseline demographic characteristics of the study population by intervention region and ethnicity are shown in Table 2. Latinas were significantly older than NLWs in both intervention areas ($P = .002$ for the PI, $P < .001$ for the PSI) and significantly less likely to be dually eligible for Medicare and Medicaid in the PSI ($P < .001$). In the follow-up time period, similar observations were made (data not shown).

Mammogram rates

The crude biennial mammogram rates for Latinas and NLWs enrolled in Medicaid during the baseline and follow-up periods by intervention are shown in Figure 1 and Table 3. In the PI region, follow-up mammogram rates for both Latinas and NLWs slightly increased over time, from 25% to 30% for Latinas (unadjusted GEE, $P = .30$) and from 32% to 38% for NLWs (unadjusted GEE, $P = .40$); however, this difference was not statistically significant compared with baseline rates. No significant disparities in mammogram rates were observed in either time period, regardless of intervention group, although Latinas had slightly lower rates in the PI area. In the PSI area, follow-up mammogram rates for Latinas remained unchanged when compared with baseline rates (45% in baseline compared with 43% in follow-up [unadjusted GEE, $P = .27$]). NLWs in the PSI demonstrated a significant increase in mammogram rates over time (41% in baseline compared with 44% in follow-up [unadjusted GEE, $P = .02$]). Latinas in the PSI had significantly higher mammogram rates than NLWs in the baseline period only (chi-square test, $P = .02$).

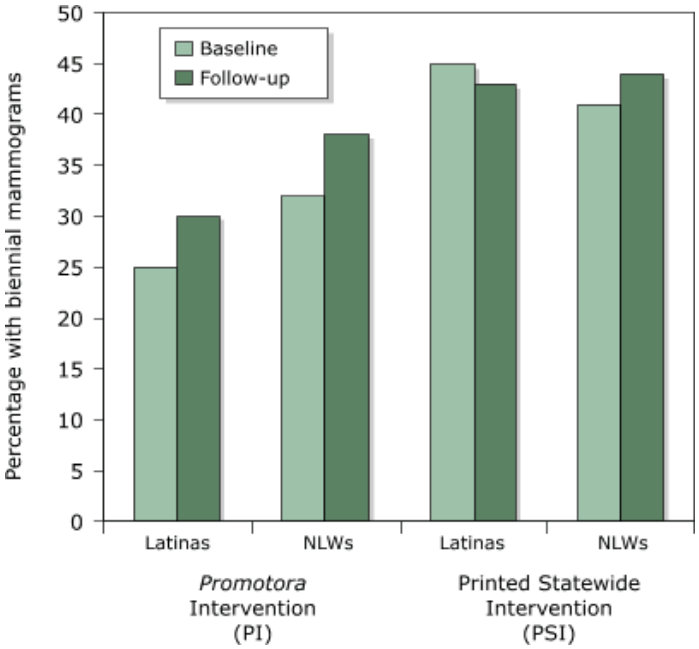

Figure 1. Unadjusted Medicaid biennial mammogram rates in Colorado by intervention during baseline (January 1998–December 1999) and follow-up (January 2000–December 2001) periods for Latinas and non-Latina whites (NLWs).

The GEE analysis directly compared the effects of the interventions on mammogram screening rates for each ethnic group. There was a marginally significant positive interaction term between time and intervention (adjusted GEE, $P = .07$), suggesting that the PI was more effective than the PSI in increasing mammogram screening among Latinas (Figure 2). Among NLWs, the PI was associated with increases in mammogram screening over time (adjusted GEE, $P = .10$) (Figure 3). These results suggest that the PI was the only intervention in which Latinas demonstrated modest increases in mammogram screening rates.

GEE was also used to determine the effect of each intervention on mammogram disparity between Latinas and NLWs. No significant ethnic disparities in screening were

observed in the PI regions. Although Latinas residing in the PI regions had less screening than NLWs, the difference was not statistically detectable (adjusted GEE, P = .19). The improvement in the PI region among Latinas did not entail a statistically significant difference (adjusted GEE, P = .90). Interestingly, Latinas in the PSI initially had higher mammogram screening rates than NLWs (adjusted GEE, P = .03). Only the PSI group had a negative significant two-way interaction between time and ethnicity due to an increase in mammogram rates for NLWs compared with Latinas over time (adjusted GEE, P = .04 for baseline and adjusted GEE, P = .24 for follow-up).

An additional analysis excluding the nonparticipating churches in the PSI showed no significant differences in mammogram rates between nonparticipating and participating PSI groups in either ethnic group.

Discussion

Type of health insurance coverage is an important factor in determining the use of preventive services (19,20). This report is the second in a series that examines the effects of the Tepeyac Project, a community-participatory, church-based educational initiative to increase mammogram screening among Latinas who have different types of health insurance coverage. The focus of this paper has been on the publicly funded Medicaid health insurance program. It is our hope that initiatives that increase use of preventive screening services among populations with relatively low screening rates may provide public health benefits and decrease future costs of late-stage detection.

Results from the Tepeyac Project in a Medicare population (15) suggested that a personalized, church-based educational initiative was more effective than a printed intervention in changing mammogram screening over time among Latinas. In that population, the PI was associated with a reduction in screening disparity between Latinas and NLWs, whereas PSI and control region rates increased slightly but disparity remained unchanged. The decrease in disparity observed in the PI region was associated with a significant increase in mammogram rates among Latinas over time after adjustment for confounders. However, large differences in baseline rates limit the evaluation.

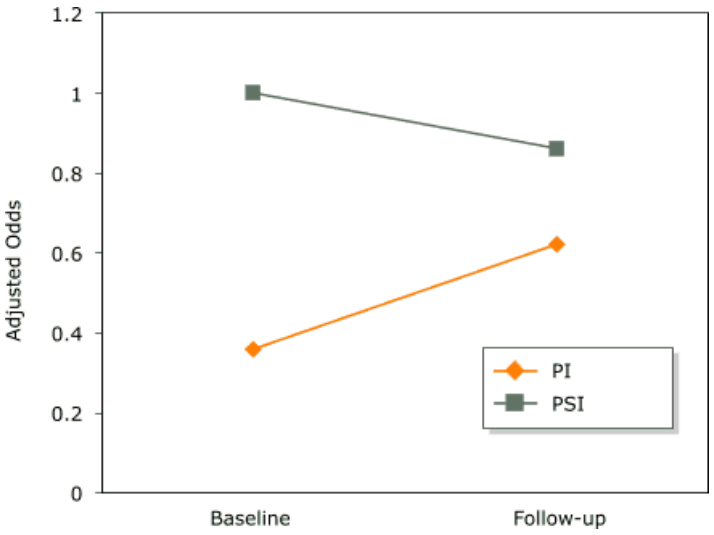

Figure 2. Adjusted odds of having a mammogram during baseline (January 1998–December 1999) and follow-up (January 2000–December 2001) periods by intervention for Latinas insured by Medicaid in Colorado. Odds calculated using generalized estimating equations (GEE) (interaction time x intervention, P = .07). PI indicates *promotora* intervention; PSI, printed statewide intervention.

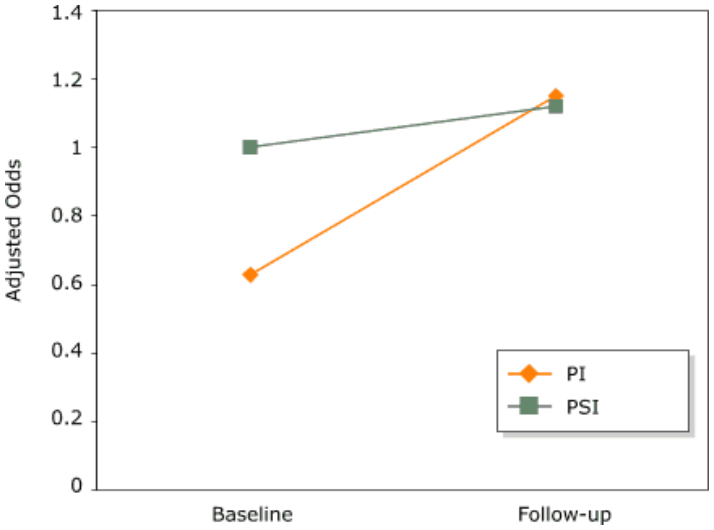

Figure 3. Adjusted odds of having a mammogram during baseline (January 1998–December 1999) and follow-up (January 2000–December 2001) periods by intervention for non-Latina whites (NLWs) insured by Medicaid in Colorado. Odds calculated using generalized estimating equations (GEE) (interaction time x intervention, P = .10). PI indicates *promotora* intervention; PSI, printed statewide intervention.

Screening rates for Medicaid beneficiaries in our study ranged from 25% to 38% in the PI and 41% to 45% in the

PSI region. These results are similar to those reported by the Behavioral Risk Factor Surveillance System (BRFSS) for women with incomes less than $25,000 in 1998–1999 (3) and the Health Plan Employer Data and Information Set (HEDIS) for Colorado Medicaid recipients in 2000 (21). Of women with incomes less than $25,000 residing in Colorado, 55% reported receiving biennial mammogram screenings, whereas HEDIS rates for Medicaid recipients in Colorado were 52% for PCCM and 36% for fee-for-service. One report studying the effects of health insurance on cancer detection found that people insured by Medicaid were more likely to be diagnosed with late-stage cancer than people with other insurance plans, suggesting low use of cancer screening (22).

Another potential reason for low mammogram screening rates among our study population may be the high proportion of participants with disabilities. Results from several studies report that individuals with disabilities are at increased risk for not receiving preventive services (23,24). The Department of Health Care Policy and Financing (HCPF) for the state of Colorado reported in *Access to Preventive Care for the Disabled* that the mammogram rate among disabled women aged 52 to 64 years enrolled in Medicaid was 20% (25).

Our datasets do not include information on whether a woman received a mammogram outside of the fee-for-service Medicaid system; therefore, we may have underestimated mammogram rates. Because mammograms may have been paid by other insurers, we compared the rates of Medicaid enrollees with and without dual Medicare–Medicaid eligibility status. A lower rate among these dually eligible subjects would suggest claims were being paid by Medicare. This was not the case, since dual eligibility status did not affect our screening rates. Since HEDIS reports of Medicaid fee-for-service are also alarmingly low, we believe that the screening rates are probably accurate, underscoring the continuing need for concentrated efforts to increase screening practices in this population.

A usual source of care has often been cited as a factor influencing preventive screening practices (6,26). Interestingly, our results found that one third of Medicaid enrollees obtained mammograms from hospitals, suggesting a possible lack of a usual source of care. This is consistent with results reported by McCall and colleagues, where an association was found between decreased diabetes care and emergency department use in a population of dual Medicare–Medicaid-eligible elderly (27). This may also have contributed to low screening rates in our Medicaid population.

Latinas have typically been described in the literature as an ethnic group at increased risk for not obtaining mammograms and receiving routine screening when compared with NLWs (2,28). This has been consistent with evidence that Latinas are diagnosed with later stages of breast cancer (4,29,30). However, we observed this trend toward screening disparity only in the lowest-income region of Colorado. Interestingly, our study did not demonstrate significant disparities in mammogram screening rates between Latinas and NLWs residing in the rest of Colorado. This observation has also been made in other studies with low-income populations. Hedegaard and colleagues examined factors associated with obtaining mammograms among low-income women attending a community health center in Denver. After controlling for subsidized care and other variables, little difference in screening rates between racial groups was found (20). In a more recent study, researchers using data from the National Health Interview Survey (NHIS) analyzed the contribution of sociodemographic factors to differences in screening practices between Latinas and NLWs covered by private health insurance. Latina mammogram screening rates were initially lower than NLW rates; however, after controlling for age, education, and family income, disparities in mammogram screening between Latinas and NLWs were no longer significant (31). Similarly, trends in breast cancer and breast cancer survival observed in Latinas residing in Colorado were largely associated with poverty (32).

Despite the slight increases in screening observed, the Tepeyac Project interventions were not associated with large improvements in mammogram screening rates among Medicaid recipients. Women residing in the PI regions still remained at higher risk for not obtaining mammogram screening than women residing in the rest of Colorado. Several study limitations may contribute to the finding of a lack of significant improvement in screening including lack of study power, potential underestimation of mammogram claims by Medicaid fee-for-service, heterogeneity of church intervention, and differences in baseline rates of mammogram screening between interventions. Some of these limitations are inherent to community research studies using large databases. For example,

diagnostic codes may be subject to variation and incompleteness and are originally intended for reimbursement purposes rather than research (33).

The lack of study power is related to the pilot nature of this study, which had financial constraints that limited the number of churches reached by the *promotora* intervention to four. Another study limitation is that the interventions were placed in the churches, but the outcomes were measured in the neighborhood population with the assumption that a church intervention will diffuse into the community. The qualitative evaluation done by Sauaia et al (15) as part of the Tepeyac Project using eight focus groups across the intervention regions showed that Latinas saw the churches as a trusted and convenient place to receive health messages and voiced a strong preference for personally delivered education. These findings will be tested by a survey being conducted in the neighborhood surrounding the churches that will allow for a measure of exposure to the intervention among Latinas as well as further characterization of how this intervention addresses barriers to preventive health care that they encounter.

In addition, the printed materials have been improved in Phase II of the Tepeyac Project, with development of new, locally produced printed materials reflecting local community barriers, language, and misconceptions. Future research should also evaluate the effect of having paid versus volunteer *promotoras* and the feasibility of a randomized controlled trial to overcome some of the study design issues experienced in this pilot study.

However, more important from a policy point of view, our study population may simply represent a group that is particularly difficult to target for outreach activities. Low-income women — especially low-income Latinas — experience multiple barriers that may preclude their participation in preventive care activities, of which education may be only a small component. Low-income women have fewer health services available and are more likely to lack access to available services; low-income women are also more likely to have physical and comorbid conditions (10). More than half of our study participants were categorized as either blind or disabled, potentially limiting exposure to or understanding of the educational interventions. When mammograms were categorized as either preventive or diagnostic, the majority of our study population obtained diagnostic mammograms in the baseline period. This is suggestive of a high prevalence of comorbid conditions, a potential barrier, among these women.

This pilot study has demonstrated provocative results that should be discussed and that should generate hypotheses and new research in public health. To substantially increase preventive care screening, this type of intervention may need to be combined with other strategies to overcome significant barriers faced by these women. Successful cancer screening initiatives targeting Latinas must address not only culturally specific barriers but also access and broader institutional and societal factors. Finally, while a randomized controlled trial may pose ethical and logistical dilemmas quite difficult to overcome, it may be the necessary next step to evaluate this type of intervention and to address some of the limitations experienced in this pilot study.

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Tables

Table 1. Demographic Characteristics of Women Aged 50–64 Years (N = 6696) Enrolled in Medicaid Fee-for-Service Database Longer Than 18 Months During Baseline Period, Colorado, January 1998–December 1999

Characteristic	No. (%)
Ethnicity	
Latina	1500 (22.4)
Non-Latina white	3841 (57.4)
Black	297 (4.4)
Other	1058 (15.8)
Number of mammograms	
0 (procedure not done)	3995 (59.7)
≤2 mammograms (preventive)	980 (14.6)
>2 mammograms (diagnostic)	1725 (25.8)
Category of aid	
Old age pension	2639 (39.4)
Dual eligibility	2123 (80.4)
Disabled/other	3951 (59.0)
Dual eligibility	2852 (72.2)
AFDC[a]	106 (1.6)
Dual eligibility	23 (21.7)

[a]AFDC indicates Aid to Families With Dependent Children.

Table 2. Demographic Characteristics of Women Aged 50–64 Years Enrolled in Medicaid Longer Than 18 Months During Baseline Period, by Intervention Region and Ethnicity, Colorado, January 1998–December 1999

Characteristic	*Promotora* Intervention (PI) Region			Printed Statewide Intervention (PSI) Region		
	Latina (n = 165)	NLW[a] (n = 153)	*P*	Latina (n = 2034)	NLW[a] (n = 5838)	*P*
Age in years, mean (SD)	59.0 (4.1)	57.5 (4.3)	.002	58.4 (4.4)	57.9 (4.5)	<.001
No. study days on Medicaid, mean (SD)	714.1 (41.2)	719.2 (33.2)	.22	716.0 (37.3)	715.1 (37.8)	.35
No. total days on Medicaid, mean (SD)	1585.5 (628.6)	1625.4 (726.1)	.60	1539.3 (795.5)	1565.9 (863.8)	.20
No. subjects dual Medicare–Medicaid eligible (%)	80 (83.3)	79 (78.2)	.91	1008 (71.8)	2968 (79.4)	<.001

[a]NLW indicates non-Latina white.

Table 3. Percentage Biennial Mammograms (Unadjusted) During Baseline and Follow-up Periods, by Intervention and Ethnicity, Colorado, 1998–2001[a]

Study Group	Baseline Proportion (%)	*P* Value[b] Baseline, Latinas Compared with Non-Latina Whites	Follow-up Proportion (%)	*P* Value[b] Follow-up, Latinas Compared with Non-Latina Whites	*P* Value[c] Baseline Compared with Follow-up
***Promotora* Intervention**					
Latina	24/96 (25.0)	.30	25/84 (29.8)	.23	.30
Non-Latina white	32/101 (31.7)		48/127 (37.8)		.40
Printed Statewide Intervention					
Latina	630/1404 (44.9)	.02	574/1323 (43.4)	.74	.27
Non-Latina white	1540/3740 (41.2)		1756/3999 (43.9)		.02

[a]Limited to subjects enrolled in Medicaid longer than 18 months during baseline and follow-up periods.
[b]*P* value determined using chi-square test.
[c]*P* value determined using unadjusted generalized estimating equations (GEE).