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Tu Salud ¡Sí Cuenta! Your Health Matters!: A quasi-experimental design to assess the contribution of a community-wide campaign to eating behaviors and anthropometric outcomes in a Hispanic border community in Texas

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Abstract

Objective—To evaluate a community-wide campaign, Tu Salud ¡Si Cuenta! (TSSC), in improving eating behaviors and anthropometric outcomes in Hispanic border communities.

Design—A quasi-experimental study with matched intervention and comparison communities. Cross-sectional assessments with randomly sampled adults, examined by actual exposure and site (Unexposed Intervention, Exposed Intervention, Unexposed Comparison).

Setting/Participants—Predominately Mexican-Americans located in Brownsville, TX (intervention) and Laredo, TX (control).

Intervention—TSSC included TV and radio segments, community health worker (CHW) discussions, and newsletters delivered in Brownsville from 2005–2010.

Main outcome measures—Healthy and unhealthy eating indices and average hip and waist circumferences.

Analysis—Univariable and multivariable regression models.

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Results—Sample (N=799; 400 comparison, 399 intervention) was 98% Mexican origin, and 54% completed grade 9 or higher. Exposure to any TSSC component was associated with a lower rate of unhealthy food consumption. As compared to the Unexposed Intervention group, the Exposed Intervention for the newsletter had a higher rate of healthy eating (adjusted rate ratio (RR) = 1.18, $p < 0.01$). As compared to the Unexposed Intervention, the Exposed Intervention for the CHW discussion had a smaller hip circumference (adjusted mean difference = -5.77 cm, $p < .05$) and a smaller waist circumference (adjusted mean difference = -5.25 cm, $p < .05$).

Conclusions and Implications—This study provides evidence for the use of community-wide campaigns for nutrition and obesity-related outcomes in Hispanic communities.

Keywords

community-wide campaign; health disparities; Hispanics; quasi-experimental design; community health worker

INTRODUCTION

Some of the most effective methods for preventing and managing chronic disease include weight reduction for obese or overweight individuals and improved nutrition,^{1–6} however, strategies to achieve these outcomes among populations experiencing disparities are still needed. The *Guide to Community Preventive Services*, a resource intended to provide policymakers and program planners with well-informed and evidence-based information on strategies to prevent disease, recommends the use of community-wide campaigns as a population health strategy to increase physical activity.^{7, 8} These multicomponent, community-wide campaigns include highly visible media messages, social support, and risk factor screenings and often target eating behaviors; however, the *Guide* does not explicitly recommend community-wide campaigns for eating behaviors or to improve obesity-related anthropometric outcomes.⁹ There have been limited studies testing the effectiveness of the campaigns for eating behavior and anthropometric outcomes, the results of which have been mixed.^{10–16} Given these mixed results, there is a need to further study the effect of community-wide campaigns on these outcomes, particularly in a U.S. context.

While the overall need to know the impact of community-wide campaigns and their components on eating and anthropometric outcomes is clear, studying these campaigns within a primarily Hispanic population is important for several reasons. Hispanics are the largest minority group in the U.S., and the population is expected to continue to grow.^{17, 18} Furthermore, they have higher rates of obesity than non-Hispanic Whites.^{19, 20} Hispanic border communities experience ever greater disparities; they have a higher prevalence of obesity²¹ and are less likely to meet fruit and vegetable intake guidelines when compared to Hispanics nationally.²² Community-wide campaigns have not been tested as a strategy to impact nutrition and obesity in a predominately Hispanic community or a border community.

In this paper, results of a community-wide campaign are presented that compared intervention and comparison communities in an attempt to contribute additional evidence for community-wide campaigns to promote healthy eating behaviors and improve

anthropometric outcomes. Many community-wide campaigns do not detail the exposure to and effect of individual components,^{16, 23, 24} thus limiting understanding of which components generated positive outcomes or possibly masking important effects of individual components despite an ineffective overall campaign. The objective of this study was to assess the associations of exposure to a community-wide campaign with healthy eating, unhealthy eating, and average hip and waist circumference by comparing 2 Hispanic communities, the intervention and comparison groups, as well as to evaluate the associations of exposure to each of the community-wide campaign components with the outcomes.

METHODS

Intervention

The Tu Salud ¡Si Cuenta! (Your Health Matters!; TSSC) community-wide campaign began in 2005 in the Lower Rio Grande Valley on the Texas-Mexico border, primarily in the city of Brownsville, as a Spanish-language campaign. Details of the component implementation and timeline from 2005 to 2010 have been reported elsewhere.^{25, 26} Briefly, TSSC is an intervention with multiple components, including TV and radio segments, newsletters, and home-based, individual and small-group discussions with community health workers (CHWs), to disseminate culturally and language-appropriate messages on physical activity and eating behaviors to a primarily Mexican-American population; the focus of this manuscript is on eating behaviors. The radio and TV segments, and the newsletters used behavioral change techniques from both Social Cognitive Theory²⁷ and Transtheoretical Model²⁸, including instructions on healthy eating, pros and cons of healthy eating, and local, relatable role models talking about increasing their fruit and vegetable intake. The discussions led by the CHWs were guided by the content of the monthly newsletters to spark discussions with participants, during which the CHWs used brief motivational interviewing techniques to help participants set goals for healthy eating behaviors, identify a source of social support, and provide feedback on eating behaviors and verbal persuasion about participants' ability to eat healthy. Components' content also included cooking demonstrations with recipes, seasonal options to make increasing fruit and vegetable intake more affordable, simple gardening ideas to grow vegetables in containers or in the backyard, and portion control strategies using the USDA Food Pyramid²⁹ originally and then transitioning to the USDA MyPlate guidelines.³⁰ CHWs canvassed the community to offer education and motivation, going door-to-door, as well as offering education in community spaces. CHWs delivered their education in people's homes a maximum of once a month (average of 20 minutes of conversation), while newsletters (4 page brochure) were distributed to the home but also through churches monthly. TV segments (average 4–5 minutes within 1-hour TV shows) were aired weekly and radio segments (30 seconds) were aired daily on 3 stations.

Study Design

The Committee for the Protection of Human Subjects approved this study. This post-test only, quasi-experimental design tested the effectiveness of TSSC using intervention and comparison cities on the Texas-Mexico border. Although there are repeated cross-sectional data from 3 time points, for clarity, only Time 3 data is reported. Brownsville, Texas, the

intervention city, received all of the TSSC components previously mentioned. Laredo, Texas, the comparison, is some 200 miles from Brownsville, outside of Brownsville media's broadcast area, but with similar demographics (Table 2). The communities and research staff were not blinded, but the comparison community would likely not have knowledge of the intervention in the intervention community. Two neighborhoods, 1 from each city, were selected as the sampling frame and were matched on various characteristics, including size, percentage of Hispanic population, and income. A 2-stage cluster sampling methodology that was previously used with this population in a similar area of Texas was adapted and utilized.³¹ After matching the sampling frames from each city, a simple random sample was used to select census tracts in both neighborhoods and then we used a 1-in-10 systematic sampling of housing units to identify the households to approach.

Data Collection and Management

CHWs were trained to administer the TSSC survey. Training consisted of: classroom instruction and practice, feedback from peers and supervisors, pairing with more experienced data collectors to observe, observation of data collectors in the field at least once by supervisors, and meetings with time for feedback and data collection questions. CHWs administered the TSSC survey (see Measures section) in late 2010 to early 2011 in the communities by going door-to-door to every randomly selected household. Individuals had to be 18 years or older, and only 1 adult per household was allowed to participate. If more than 1 adult in the household was eligible, then the adult with the next birthday was invited to participate. Households were approached up to 5 times, if there was no answer, and logs documenting approaches, recruitment, and refusals were strictly maintained. In an attempt to recruit Hispanic males to this study, who are typically underrepresented in research, surveys were also conducted in the early evening. Informed consent was obtained prior to the survey, and each individual received a \$15 incentive for completing the survey. The supervisor reviewed completed surveys on a daily basis for the first week and then on a weekly basis as the study progressed. Trained personnel entered data into SPSS (Armonk, NY: IBM Corp), checked for outliers and checked 10% of the surveys for accuracy. Mistakes were corrected, and another 10% sample was taken until no mistakes were identified.

Measures

The TSSC survey consisted of paper-and-pencil, interviewer-administered questions. Measures are described below, with additional details in Table 1.

Exposure—Measurement of exposure to the TSSC community-wide campaign and its components, as well as specifics about data management, has been described elsewhere.²⁵ Participants were first asked to recall exposure to the campaign generally without the use of aids, then asked questions about the level of last 6-month exposure to specific TSSC components, regardless of their response to the first question. Exposure was confirmed by asking the participant to describe their favorite media message or their interaction with the CHW, using simple visual aids. This second stage of questions resulted in no reclassifications from unexposed to exposed and 13 reclassifications from exposed to unexposed. One or more exposures to a component results in an individual being considered exposed to that component.

Dietary Patterns—Yesterday's healthy and unhealthy food consumption was assessed using an 19-item food frequency questionnaire based on the School Physical Activity and Nutrition Survey (SPAN),^{32, 33} which itself was based on the 2000 Dietary Guidelines for Americans and a needs assessment.³⁴ The research team adapted SPAN for Mexican-American adults with lower education levels; this included translation, back translation and pilot testing with local Spanish and English speaking adults to ensure the survey used appropriate dialect and wording for foods consumed in the local context and did captured foods commonly consumed. The adapted SPAN instrument also was updated to align with newer Dietary Guidelines for Americans including the recommended consumption of seafood. The healthy food index included 10 items and unhealthy food index included 9 items, listed in Table 1. Response options for both healthy and unhealthy items indicated how many times (0–5) foods were eaten yesterday, generating count data (see Table 1 for details). Healthy and unhealthy indices were based on initial psychometric development and have been used previously with this population.^{35, 36} Most items showed fair (Kappa .21 to .40) to moderate (Kappa .41 to .60) agreement^{37, 38} with similar food groups on a 24-hour recall.³⁹

Anthropometric measures—Using a tape measure, waist and hip circumference was measured to the nearest 0.2 cm at the umbilicus and at widest point of the hip, respectively, following the MESA study protocol⁴⁰ with the participant standing and breathing normally. This was done twice, with the average of the 2 used for analyses. These variables were continuous.

Demographic variables—Covariates such as age, sex, ethnicity, education, employment and marital status were all collected using questions modeled on the Behavioral Risk Factor Surveillance Survey.⁴¹

Statistical Analysis

Univariable analyses, using Pearson's Chi-square test and Independent samples t-test, were conducted to compare demographic characteristics and TSSC component exposure for intervention and comparison communities. Multivariable analyses were conducted, after controlling for age, sex, marital status, education, and employment, to assess differences in anthropometric and dietary outcomes at Time 3 between the intervention and comparison groups (independent variable). The survey collection location (intervention or comparison) and the exposure variables were combined as 1 variable with 4 categories (Exposed Intervention, Unexposed Intervention, Exposed Comparison, Unexposed Comparison) because location and exposure were highly correlated. Thus, the authors were able to assess differences in the anthropometric and dietary outcomes at Time 3 between the Exposed Intervention and Unexposed Intervention, as well as the Exposed Comparison and Unexposed Comparison groups (independent variable). Comparisons were also made between the Exposed Intervention and the Exposed Comparison groups, but the data are not presented due to the very small sample size in the latter group.

Linear regression models were conducted for average hip and waist circumference outcomes separately and Poisson regression models for healthy and unhealthy foods indexes outcomes.

Over dispersion and zero-inflation in the Poisson model were examined to determine whether a negative binomial or zero-inflated model was needed to supersede the Poisson model. The researchers also evaluated potential confounders such as age, sex, education, employment, and marital status, and effect modifiers while developing the final multivariable model. Analyses were performed using SAS 9.4 (SAS Institute Inc., Cary, NC) at a statistical significance level of 0.05.

RESULTS

The total sample of individuals who were enrolled and completed the survey at Time 3 was 799 and demographics for each group as well as the total sample are in Table 2. Age, Mexican origin, sex, and marital status were similar between groups (Table 2). However, there was a significant difference in education and employment; the comparison group was more educated and employed.

Campaign Exposure

There were varying levels of exposure to TSSC components at Time 3 (Table 3). The overlap between exposure to the TSSC components was assessed, with indication that there was some overlap between exposure to the TV segments and newsletters (8%). The overlap of exposure to the TSSC components was typically much less than that, with some components overlapping in exposure as little as 1%. Therefore, the researchers assessed the association of each TSSC component individually with the outcomes. Few individuals were ever exposed to TSSC in the comparison community and 42.75% of individuals in the intervention community were exposed (Table 3).

Healthy and Unhealthy Food Consumption

There was a difference in outcome between the intervention and comparison cities, regardless of TSSC component exposure (Table 4). The intervention community consumed significantly fewer unhealthy foods compared with the comparison community, after adjusting for potential confounders. However, given that not all individuals in the intervention community were exposed, the association between actual exposure and the outcomes was assessed.

The adjusted multivariable association between exposure to TSSC by community and healthy and unhealthy food consumption with adjustment for the potential confounders identified significant differences (Table 5). Compared with the Unexposed Comparison group, there were significantly lower rates of unhealthy eating in the Exposed Intervention group for any component and each of the individual components. As compared to the Unexposed Intervention group, the Exposed Intervention group for the newsletter had an 18% improvement in the rate of eating healthy foods.

Anthropometric Measures

Adjusted multivariable association between exposure to TSSC by community and anthropometric measures were examined (Table 5). As compared to the Unexposed Intervention, the Exposed Intervention group for the CHW discussion had on average a 5.25

cm smaller waist circumference and a 5.77 cm smaller hip circumference. Furthermore, as compared to the Unexposed Comparison, the Exposed Intervention group for the TSSC CHW discussion had a significantly smaller hip circumference.

DISCUSSION

The TSSC campaign was specifically designed to reach Hispanics in a Texas-Mexico border community with culturally and linguistically appropriate media messages and materials. This study provides evidence for the association of exposure to this community-wide campaign with eating behaviors and anthropometric outcomes. Without considering the potential exposure to TSSC, the intervention community had lower rates of unhealthy eating compared to the comparison community. Unhealthy eating included eating foods considered to be of low nutritional value or prepared in unhealthy ways. Furthermore, exposure to any of the TSSC components in the intervention community was associated with a lower rate of eating unhealthy foods, as compared to those unexposed in the comparison community. However, this same result was not found when comparing Exposed Intervention to Unexposed Intervention. This could be for several reasons. First, it is possible that other policies and environmental changes including those established as part of the TSSC campaign were influencing individuals, including both those exposed and unexposed to the media elements of the campaign. Some TSSC policy and environmental changes in place in the intervention community at this time related to nutrition included a farmer's market and a city-wide weight loss challenge promoting healthy food choices. It is also possible that Unexposed Intervention individuals were actually exposed and unconsciously affected by that exposure, while not able to consciously recall the exposure on the TSSC survey. Either explanation does not discount the partial contributions of TSSC to the lower rate of unhealthy food consumption in the intervention community, with results similar to other community-based and community-wide multicomponent campaigns. One study that used TV and radio segments in its campaign was successful in reducing high-fat milk consumption.^{42, 43} Another that included mass media, community activities, and health services successfully decreased fat and meat consumption.¹² The Healthy Bergeyk project in the Netherlands used newspaper articles and advertisements, cooking courses and group sessions and was successful in decreasing dietary fat consumption.⁴⁴ The Stanford Five-City Project, the model for TSSC, decreased dietary cholesterol among both men and women and saturated fat consumption among women.¹⁰

Exposure to the newsletter was associated with a higher rate of eating healthy foods when comparing the Exposed Intervention and Unexposed Intervention groups. The newsletters based on the Transtheoretical Model and Social Cognitive Theory included role model stories discussing coping techniques related to food choice, the pros and cons of selecting healthy foods and step-by-step guidance to make the healthy recipe of the month, among other behavioral change techniques previously reported.²⁵ This finding indicates that even within a community that may have been experiencing other policy and environmental changes related to nutrition effecting both those exposed and unexposed to TSSC, the TSSC components had an additional statistically significant, though small positive effect. This small effect is not unusual, as despite the theory-based behavioral techniques incorporated into the newsletter content,²⁵ this is a non-tailored, low intensity intervention component.

However, this change on a population level is meaningful for an area (Lower Rio Grande Valley) with such great need and disparities.^{20–22} Furthermore, the newsletters' association with healthy food consumption, which was not seen with other components, may be attributable to the ability to return to this reference material, as opposed to the fleeting nature of TV and radio segments. Unlike some other multi-component media campaigns with impacts on only unhealthy foods,^{13, 14, 24} at least 1 TSSC component was associated with higher rates of healthy eating. This outcome was not surprising and is similar to a few other multi-component studies with mass media, often accompanied by print materials, that have increased healthy food consumption generally¹² or fruit and vegetable consumption specifically.¹¹

Exposure to a CHW discussion over the previous 6 months was associated with a reduction in average hip and waist circumference, which is in contrast to some other previous mass media campaigns or community interventions with multiple components, which have been ineffective in changing objective obesity-related anthropometric measures.^{15, 23, 45, 46} However, the CHW component used in TSSC campaign is more intensive and personal than other community-wide campaign components, and included the CHW working with participants to set personal goals for behaviors, building on motivational interviewing techniques. Thus this result was not surprising. The significant mean differences seen, about 5–6 cm, is slightly larger than reductions found with other CHW-focused interventions with Hispanic populations,^{47–49} but mirrors successful outcomes seen with this approach in Hispanic populations.^{50, 51}

Limitations

Given the repeated cross-sectional design, a sample from only 1 data collection time point was used, limiting both the ability to draw causal inferences, to assess changes over time, be certain that the changes are attributable to the TSSC intervention, or to draw conclusions about the sustainability of the intervention effect. Although exposure to the campaign was assessed using previously validated measures and was intended to capture a variable that preceded prevention behaviors, it is possible that individuals already performing these behaviors sought out the TSSC components in the media or more willingly participated in the surveys. The comparison community limits some of the threats to internal validity and the distance between the communities also helps protect from other threats to internal validity. Despite the attempts to match intervention and comparison communities, some statistically significant differences in education and employment remained. Strong statistical methodology was used to account for the different data distributions and dependency of observations by allowing the extra parameters to be estimated for model development.

However, the authors were not able to account for history effects, such as the farmer's market or the city-wide weight loss challenge, limiting the authors' ability to definitely attribute the results to the TSSC intervention. The influence of policies and environments on better nutrition in the intervention and comparison communities, not controlled for in the analysis, could have contributed to the improvements in eating and anthropometric measures in the intervention community, and the differences seen between the intervention and comparison communities. There was fairly low exposure in the intervention community,

limiting the ability to assess the full effect of the campaign. However, this allowed examination of those in the intervention community specifically, comparing the Unexposed Intervention group to the Exposed Intervention group, 2 groups who likely have similar exposures to policies and environmental features.

IMPLICATIONS FOR RESEARCH AND PRACTICE

Future studies could continue to assess the use of community-wide campaigns in other Hispanics communities, not only communities of predominately Mexican-origin and border communities, but also more diverse Hispanic communities. Also, future community-wide campaign intervention studies could use longitudinal data collection to assess the impact of community-wide campaign components, both separately and jointly over time, to achieve improvements in eating behaviors and anthropometric measures.

This study provides guidance on the specific community-wide campaign components that are associated with positive eating behaviors and outcomes among a Mexican-origin population on the U.S.-Mexican border. Overall, this study demonstrates that exposure of the Hispanic population to these campaigns is associated with healthier eating behaviors and positive obesity-related anthropometric outcomes and further suggests that community-wide campaigns may have a role to play in addressing health disparities associated with obesity.

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Table 1

Main measures from TTSC survey

Construct	Number of items	Example item	Components/Foods	Potential Range
Ever exposure to any TSSC component	1	Have you regularly read, seen, or heard any health messages from the Tu Salud ¡Si Cuenta! campaign?	--	Yes No
Last 6 month exposure to TSSC components	4	In the last six months how many times have you read a "Tu Salud, ¡Si Cuenta!" newsletter?	Newsletter, Radio segment, TV segment, CHW discussion	0 – 6
Healthy Food Index	10	Yesterday, did you eat any <u>orange vegetables</u> like carrots, squash, or sweet potatoes?	1) Fruit, 2) fruit juice, 3) baked/grilled/broiled/steamed fish, chicken or turkey, 4) whole grain breads, 5) whole grain cereals, 6) eggs, 7) orange vegetables, 8) salad/green vegetables, 9) beans, and 10) other vegetables	0–50
Unhealthy Food Index	9	Yesterday, did you eat any <u>fried meat</u> with a crust, like fried chicken, chicken nuggets, chicken fried steak, fried pork chops, fried fish, fish sticks, or milanesa?	1) Regular soda, 2) sweetened drinks/sports drinks, 3) frozen desserts, 4) baked goods, 5) other candy, 6) white breads, 7) hamburger meat/hot dogs/chorizo/meat/bacon/ribs, 8) fried meat, and 9) French fries or chips	0–45

Table 2

Demographic Characteristics for Intervention and Comparison Communities

Variable	All n=799	Comparison n=400	Intervention n=399	<i>p</i>
Age, Mean (SD)	43.7 (14.18)	42.7 (13.09)	44.6 (15.17)	.122 ^a
Female, n (%)	678 (85.28)	340 (85.64)	338 (84.92)	.775 ^b
Completed grade 9 or higher, n (%)	431 (54.08)	254 (63.66)	177 (44.47)	<.001 ^{b*}
Married, n (%)	524 (66.75)	274 (69.90)	250 (63.61)	.062 ^b
Mexican origin, n (%)	764 (98.20)	388 (98.73)	376 (97.66)	.264 ^b
Employment, n (%)	242 (30.44)	138 (34.67)	104 (26.20)	<.01 ^{b*}

Note:

^aIndependent samples t-test;^bChi-square test;

* indicates statistical significance. Individuals missing exposure data for a particular variable were removed from the total when calculating percentages; Missing %: Age 1.5%, Sex 0.5%, Education 0.25%, Marital status 1.75%, Mexican origin 2.63%, Employment 0.5%

Table 3

Exposure to Tu Salud ¡Si Cuenta! Your Health Matters!

Variable	Comparison n=400 n (%)	Intervention n=399 n (%)
Ever exposure to any component	8 (2.01)	168 (42.75)
Exposure in last 6 months to newsletter	2 (.51)	115 (31.42)
Exposure in last 6 months to CHW discussion	2 (.51)	44 (12.19)
Exposure in last 6 months to TV segment	0 (0)	84 (22.16)
Exposure in last 6 months to radio segment	1 (.25)	22 (5.80)

Note: Individuals missing exposure data for a particular variable were removed from the total when calculating percentages. Missing %: Exposure to any component 1%; 6 month newsletter 4.8%; 6 month discussion 5.6%; 6 month TV 3.6%; 6 month radio 3.4%.

Table 4

Outcome Differences Based on Multivariable Models with Adjustment for Covariates

Variable	Comparison n=400	Intervention n=399	Estimate (95% CI)
	Mean (SD)	Mean (SD)	
Healthy eating ^a	6.38 (3.37)	6.12 (3.10)	0.96 (0.89,1.04)
Unhealthy eating ^a	5.64 (4.43)	4.04 (3.04)	0.71 (0.63,0.79) *
Average waist circumference (cm) ^b	100.60 (15.01)	100.71 (14.26)	0.20 (−2.05,2.44)
Average hip circumference (cm) ^b	110.76(14.01)	110.19 (13.80)	−0.60 (−2.73,1.52)

Note:

*
p<.001;^aRate ratio based on Poisson regression model with adjustment for age, sex, marital status, education, and employment;^bMean difference based on linear regression model with adjustment for age, sex, marital status, education, and employment; Missing %: Healthy eating 14%, Unhealthy eating 14%, Waist circumference 11%, Hip circumference 11%

Eating and Anthropometric Outcomes Based on Adjusted Multivariable Regression Models

Table 5

Exposure	Label	Adjusted Rate Ratio (95% CI) ^a		Adjusted Mean Difference (95% CI) ^a	
		Unhealthy Foods	Healthy Foods	Average Waist Circumference	Average Hip Circumference
Ever any component	Exposed Intervention v. Unexposed Intervention	0.98 (0.83,1.16)	1.09 (0.98,1.21)	-0.60 (-3.89,2.69)	-1.41 (-4.54,1.72)
	Exposed Intervention v. Unexposed Comparison	0.71 *** (0.61,0.82)	1.00 (0.90,1.11)	-0.58 (-3.47,2.31)	-1.80 (-4.55,0.95)
Newsletter	Exposed Intervention v. Unexposed Intervention	0.94 (0.78,1.13)	1.18 ** (1.05,1.33)	-1.03 (-4.65,2.58)	-1.61 (-5.06,1.83)
	Exposed Intervention v. Unexposed Comparison	0.68 ** (0.57,0.82)	1.08 (0.96,1.21)	-0.72 (-4.06,2.63)	-2.18 (-5.37,1.01)
CHW discussion	Exposed Intervention v. Unexposed Intervention	0.95 (0.73,1.24)	1.00 (0.84,1.18)	-5.25 * (-10.30,-0.21)	-5.77 * (-10.56,-0.98)
	Exposed Intervention v. Unexposed Comparison	0.69 ** (0.53,0.90)	0.96 (0.81,1.14)	-4.81 (-9.77,0.15)	-6.27 ** (-10.98,-1.57)
TV segment	Exposed Intervention v. Unexposed Intervention	0.99 (0.81,1.22)	1.06 (0.93,1.21)	-1.25 (-5.19,2.70)	-2.54 (-6.30,1.22)
	Exposed Intervention v. Unexposed Comparison	0.71 *** (0.59,0.87)	1.01 (0.89,1.15)	-1.19 (-4.98,2.60)	-2.96 (-6.57,0.65)
Radio segment	Exposed Intervention v. Unexposed Intervention	0.88 (0.59,1.32)	1.19 (0.95,1.50)	-1.64 (-9.04,5.76)	-0.32 (-7.36,6.72)
	Exposed Intervention v. Unexposed Comparison	0.64 * (0.42,0.95)	1.13 (0.89,1.42)	-1.91 (-9.28,5.45)	-1.49 (-8.50,5.52)

Note:

* p<0.05,

** p<0.01,

*** p<0.001);

^a Adjusted for age, sex, marital status, education, and employment.