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HOMBRES SANOS: EXPOSURE AND RESPONSE TO A SOCIAL MARKETING HIV PREVENTION CAMPAIGN TARGETING HETEROSEXUALLY IDENTIFIED LATINO MEN WHO HAVE SEX WITH MEN AND WOMEN

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This study examined the reach and impact of a social marketing intervention to reduce HIV risk among heterosexually identified (HI) Latino men who have sex with men and women (MSMW). Repeated cross-sectional intercept surveys were conducted in selected community venues during and after the campaign with 1,137 HI Latino men. Of them, 6% were classified as HI Latino MSMW. On average, 85.9% of the heterosexual respondents and 86.8% of the HI MSMW subsample reported exposure to the campaign. Responses to the campaign included having made an appointment for a male health exam that included HIV testing and using condoms. Campaign exposure was significantly associated with HIV testing behavior and intentions and with knowledge of where to get tested. The campaign reached its underserved target audience and stimulated preventive behaviors. Social marketing represents a promising approach for HIV prevention among HI Latinos, in general, and HI Latino MSMW, in particular.

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BACKGROUND

Latinos are disproportionately affected by HIV/AIDS, accounting for 14.7% of the US population (U.S. Census Bureau, 2008) but 17.6% of HIV/AIDS cases diagnosed in 2006 (Centers for Disease Control and Prevention [CDC], 2008a). Self-identified sexual orientation frequently does not correspond to sexual behavior (Millett, Malebranche, Mason, & Spikes, 2005; Montgomery, Mokotoff, Gentry, & Blair, 2003; Wolitski, Jones, Wasserman, & Smith, 2006; Zellner et al., 2009). Research suggests that Latino men are more likely than White men to engage in bisexual behavior (Chu, Peterman, Doll, Buehler, & Curran, 1992; Doll et al., 1992; Montgomery et al., 2003), but are less likely to disclose their sexual orientation to others (Mason, Marks, Simoni, Ruiz, & Richardson, 1995; Zea, 1999; Zea, Reisen, & Diaz, 2003). Homophobia and social stigma attached to same-sex practices may inhibit Latino men who have sex with men from self-identifying as gay or bisexual (Carrillo, 2002; Diaz, 1998; Doll & Beeker, 1996; Wolitski et al., 2006; Zea et al., 2003).

Recent research suggests that men who have sex with men and women (MSMW) are at greater risk for HIV than men who exclusively have sex with men (MSM) and men who exclusively have sex with women (MSW) (Brooks, Rotheram-Borus, Bing, Ayala, & Henry, 2003; Los Angeles County Department of Health Services, 2000; Munoz-Laboy & Dodge, 2007; Prabhu, Owen, Folger, & McFarland, 2004; Zellner et al., 2009). Men's nondisclosure of same-gender sexual practices also has implications for the health of their female sex partners (Chu et al., 1992; Montgomery et al., 2003; Siegel, Scrimshaw, Lekas, & Parsons, 2008). In the United States in 2006, 52% of Hispanic women with HIV were infected via heterosexual contact (CDC, 2008a). Although most of these cases are related to sex with injection drug users partners (CDC, 2007), unprotected sex with heterosexually identified (HI) MSMW is likely to contribute to this toll.

A number of evidence-based interventions have been found to be effective at increasing HIV preventive behaviors in a variety of at-risk populations (CDC, 2008b; Lyles et al., 2007); however, few have been developed specifically for the heterosexual Latino male population, and to our knowledge, none targets HI Latino MSMW.

SOCIAL MARKETING AND HIV PREVENTION

Social marketing uses the principles and techniques of commercial marketing to promote behavioral change or goals for the good of the target audience, community, or society at large (Andreasen, 1995; Weinrich, 1999). It has been used to address a variety of health-related issues, including HIV. Exposure to social marketing programs has been related to increased condom use (Kennedy, Mizuno, Seals, Myllyluoma, & Weeks-Norton, 2000; Plautz & Meekers, 2007; Van Rossem & Meekers, 2007) and other psychosocial determinants of HIV-related behaviors (Geary, Burke, et al., 2007a; Keating, Meekers, & Adewuyi, 2006; Kennedy et al., 2000). A social marketing campaign promoting HIV awareness and HIV testing that specifically targeted Latinos living in the U.S.-Mexico border region documented increased HIV testing at partner clinics, with 28% of testers reporting exposure to the campaign (Olshefsky, Zive, Scolari, & Zuniga, 2007).

THE *HOMBRES SANOS* CAMPAIGN

Hombres Sanos was a formative research-informed social marketing campaign to promote risk reduction among HI Latino MSMW in North San Diego County, California. The campaign recognized that HI Latino MSMW saw themselves as, and

adhered to normative values held by, heterosexual Latino men. Consequently, the campaign was aimed at promoting condom use and HIV/STI (sexually transmitted infection) testing among the heterosexual Latino male population. In addition, some campaign components were designed to more specifically address the particular prevention needs of the HI Latino MSMW population. Examples of these components were posters and postcards that focused on promoting condom use specifically during sexual encounters with other men, incorporated references to settings where same-sex encounters were likely to take place for these men (e.g., public bathrooms, a local public beach), and featured condom use as a means to keep same-sex practices secret.

Central to the promotion of HIV and STI testing was a comprehensive male health exam, the *Hombres Sanos* Exam (HSE), offered by the local community clinic that acted as partner for this study. The HSE included a battery of tests for low stigma and high prevalence health conditions (e.g., diabetes, hypertension, and hypercholesterolemia) in addition to HIV/STI risk assessment, testing, and counseling. This exam was conceived as a nonthreatening service where Latino men could get tested for HIV and other STIs and access risk reduction counseling without fear of being stigmatized. The HSE was offered on an extended schedule, based on a sliding-fee scale, provided by bilingual and bicultural staff, and available to everyone regardless of legal or insurance status. In addition, transportation to and from the HSE was also made available for free to those in need.

Campaign elements included Spanish-language print materials, such as posters, brochures, comic books, and business cards; mobile ads placed on local buses and clinic vans; radio-based ads; free condom distribution throughout the community; and promotional activities in local clubs. The campaign ran from June 2006 through December 2006. Over 170 community venues were involved in some capacity, ranging from the placement of printed materials or condoms to allowing project staff to distribute materials or conduct outreach on-site.

This study evaluated the reach and behavioral impact of the *Hombres Sanos* campaign among HI Latino men in general, and HI Latino MSMW in particular. In addition, this study examined sociodemographic and behavioral factors associated with exposure to the *Hombres Sanos* campaign.

METHODS

DESIGN AND PROCEDURES

Bimonthly cross-sectional surveys were conducted with independent community-based samples of Latino men recruited from local venues during (four waves) and after (two waves) the implementation of the campaign. Based on formative research, venues were selected to represent public locations in North San Diego County where HI Latino men in general, and HI Latino MSMW in particular, could be found. Both high- and low-risk locations were included, with risk level determined by the extent to which sexual risk practices were likely to occur at or in close proximity to the venue. Twelve sites covering the geographic region of North San Diego County were identified, including seven low-risk venues (e.g., a workplace, a migrant camp, a labor pickup site, two shopping centers, an English-as-a-second-language (ESL) center, and a men's shelter) and five high-risk venues (an adult bookstore and four bars/clubs).

Sampling shifts at each venue were selected based on days and times when sampling venues were operating (e.g., bars and clubs were only open in the evening) and during which access to Latino men could be ensured (e.g., men congregated in labor pickup sites only in the morning). Depending on the venue, different selection procedures were used to screen and recruit eligible participants and maximize the representativeness of our sample with respect to the Latino men who frequented these locations. Given the volume of patrons and characteristics of access to the bars, clubs, adult bookstore, and one of the shopping centers, men in these venues where intercepted and recruited consecutively from the beginning to the end of each sampling shift. In the ESL center and the men's shelter, a lottery system was used to select those to be approached for screening and recruitment from all men present during sampling shifts. At all other venues, dice were used to determine the number of men to be counted before the first man was to be approached for participation in the study. After the first man had completed the survey, the die was tossed again and the resulting number used again to determine the number of men to be counted before the next man was to be approached for screening and potential recruitment. This procedure was repeated from the beginning to the end of each sampling shift. Eligibility included self-reported Latino ethnicity, age 18 or older, and being alone or in the company of other men. Venue-specific recruitment goals were established based on previous enumeration activities, so as to be proportional to the size of the target population visiting each site. The response rate across all venues was 64% (70% for low-risk and 56% for high-risk venues). No information was collected from individuals who refused participation.

MEASURES

Participants completed a self-administered intercept survey on a handheld computer. The survey was anonymous and available in either Spanish or English. The topics covered by the survey included sociodemographics, exposure and behavioral responses to the *Hombres Sanos* campaign, and risk and protective factors for HIV infection. Exposure questions used visual or verbal prompts and asked participants whether they had heard of the *Hombres Sanos* campaign and recalled seeing or hearing specific campaign components (e.g., the campaign logo; each of the posters, brochures, and radio ads developed; condoms containing the campaign logo distributed throughout the community, etc.). Using a checklist, participants who reported having seen or heard at least one of the campaign components were asked whether, as a result of it, they had enacted one or more of a list of potential behavioral responses to the campaign (e.g., made an appointment to receive the promoted male health exam, had been tested for HIV, used condoms every time they had sex, etc.). Participants who reported having heard of the campaign but did not recognize any of the specific components of the campaign were not asked about their responses to the campaign.

STATISTICAL ANALYSIS

Only first-time survey respondents were included in analyses; data from repeat surveys were excluded. Exposure variables were collapsed into larger categories representing exposure to one or more campaign channels, including printed materials, radio ads, mobile ads, club events, and campaign condoms. Survey participants were classified as exposed to the campaign if they reported having heard of the campaign and/or exposure to one or more of these channels; participants were classified as

TABLE 1. Sociodemographic Characteristics and Exposure to the HS Campaign by Sexual Orientation Among a Community-Based Sample of Heterosexually Identified Latino Men (*N* = 1,137) in North San Diego County, 2006-2007

	All (*N* = 1,137)	Heterosexual (*N* = 1,069)	HI MSMW (*N* = 68)	*p*[a]
Sociodemographic characteristics				
Age, mean (standard deviation)	28.1 (8.8)	28.0 (9.0)	28.4 (8.6)	0.456
Marital status (single/never married), %	61.3	61	66.2	0.395
Education (completed high school), %	28.3	28.2	30.9	0.629
Birthplace, %				
United States	7.5	6.9	16.2	0.005
Mexico	87.6	88.6	72.1	<.001
Other country	4.9	4.5	11.8	0.007
Length of residence in the United States[b], %				
Less than 1 year	25.9	25.7	29.8	0.485
1-5 years	33.3	33.7	26.3	0.248
More than 5 years	40.8	40.6	43.9	0.627
Occupation[c],%				
Agriculture	24.6	25.2	16.2	0.095
Construction	23.8	24.8	8.8	0.003
Factory	18.8	18.2	27.9	0.047
Services	21.2	20.8	27.9	0.16
Completed interview in Spanish, %	95.1	95.3	94.5	0.555
Campaign exposure,%				
Heard of the campaign, %	43.2	42.8	50	0.242
Recognized the campaign logo, %	46.7	46.8	45.6	0.849
Saw printed materials, %	75.5	75.4	77.9	0.636
Saw mobile ads, %	54.8	55.7	41.2	0.02
Heard radio ads, %	47.3	47.5	44.1	0.586
Saw/heard of club events, %	25.7	25.7	25	0.894
Saw/took campaign condoms, %	24.7	24.3	30.9	0.224
Exposure to any of the above, %[c]	85.9	85.9	86.8	0.838

Note. HI MSMW = Heterosexually identified men who have sex with men and women. [a]P values are based on *t* tests for independent samples for continuous outcomes and on chi-square and Fisher's Exact tests for categorical outcomes. [b]Applicable to foreign-born respondents only. [c]Percentages may not add up to 100 because of omitted categories. [d]Exposure to one or more of the campaign elements listed above (i.e. name of campaign, logo, printed materials, mobile ads, club events, and/or campaign condoms).

nonexposed if they reported no exposure to any of them. HI respondents were classified as heterosexual if they reported no history of sexual activity with men and as HI MSMW if they reported a lifetime history of sex with men. Because the campaign targeted HI Latino men, and HI Latino MSMW in particular, survey respondents who self-identified as homosexual, bisexual, or other sexual orientations were excluded from our analyses. The only exception was the inclusion of all survey respondents, regardless of sexual orientation, to examine the association between exposure to the campaign and having a heterosexual identity.

Descriptive statistics, frequencies, and bivariate analyses were computed for sociodemographic variables, exposure, and behavioral responses to the campaign by

sexual orientation. Risk and protective factors for HIV were compared between the exposed and nonexposed subsamples using chi-square and Fisher's Exact tests. In addition, logistic regression models were estimated to test for significant associations between exposure to the campaign and risk/protective factors for HIV, adjusting for age, marital status, education, foreign born status, length of residence in the United States, occupation, and language of interview. Because of the limited sample size of the HI MSMW subsample, these analyses were done for the whole sample, including both men classified as heterosexual and as HI MSMW. All analyses were computed using SPSS, Version 14.0 (SPSS Inc., Chicago, Ill).

RESULTS

STUDY SAMPLE

During the campaign and postcampaign phases, 1,559 surveys were completed by 1,242 Latino men of different sexual orientations (approximately 20.3% of the surveys were completed by repeat participants). On average, 207 unique respondents completed each survey wave, with sample sizes ranging between 198 and 215 participants per survey wave. The percentage of repeat participants ranged from 17.6% to 23.8%, with no significant differences between the postcampaign (22.1%) and the campaign phases (19.4%, p = .216). After excluding repeat participants and participants of sexual orientations other than heterosexual, the final analytical sample consisted of 1,137 HI unique participants, of which 1,069 were classified as heterosexual and 68 as HI Latino MSMW. Sociodemographic characteristics of the study sample are shown in Table 1.

Participants were 28.1 year old on average (SD = 8.8) and mostly single or never married (61.3%). About 28.3% had completed high school or a higher educational level. The majority of the respondents were born in Mexico (87.6%). Among the foreign-born subsample, 59.2% had been in the United States for 5 or fewer years. Compared to the heterosexual subsample, HI MSMW were less likely to be born in Mexico (72.1% vs. 88.6%, p <.001) and more likely to be born in the US (16.2% vs. 6.9%, p =.005) or another country (11.8% vs. 4.5%, p =.007). HI MSMW were also less likely to work in the construction sector (8.8% vs. 24.8%, p =.003), and more likely to work in the factory sector (27.9% vs. 18.2%, p =.047).

By survey wave, the percentage of HI MSMW participants within the final sample ranged from 3.0% to 9.7%. When collapsed by study phase, approximately 6.6% and 4.7% of the participants during the campaign and postcampaign phases, respectively, were HI MSMW. More HI MSMW respondents were recruited in high-risk venues compared to heterosexual respondents (55.9% vs. 45.0%), but the difference did not reach statistical significance (p = .081). By specific venue, the venue that yielded higher percentages of HI MSMW respondents relative to all respondents recruited from the same venue was the adult bookstore (41.4%), followed by the workplace (10.4%) and one of the night clubs (8.1%). On the other end of the spectrum, the venues that yielded lower percentages of HI MSMW respondents were the men's shelter (2.0%) and the ESL center (2.5%).

CAMPAIGN EXPOSURE RATES

Figure 1 shows the levels of exposure to different campaign channels by survey wave and sexual orientation. Exposure rates for the whole sample increased markedly from 55.9% in June 2006 to 97.5% in December 2006 (last month of

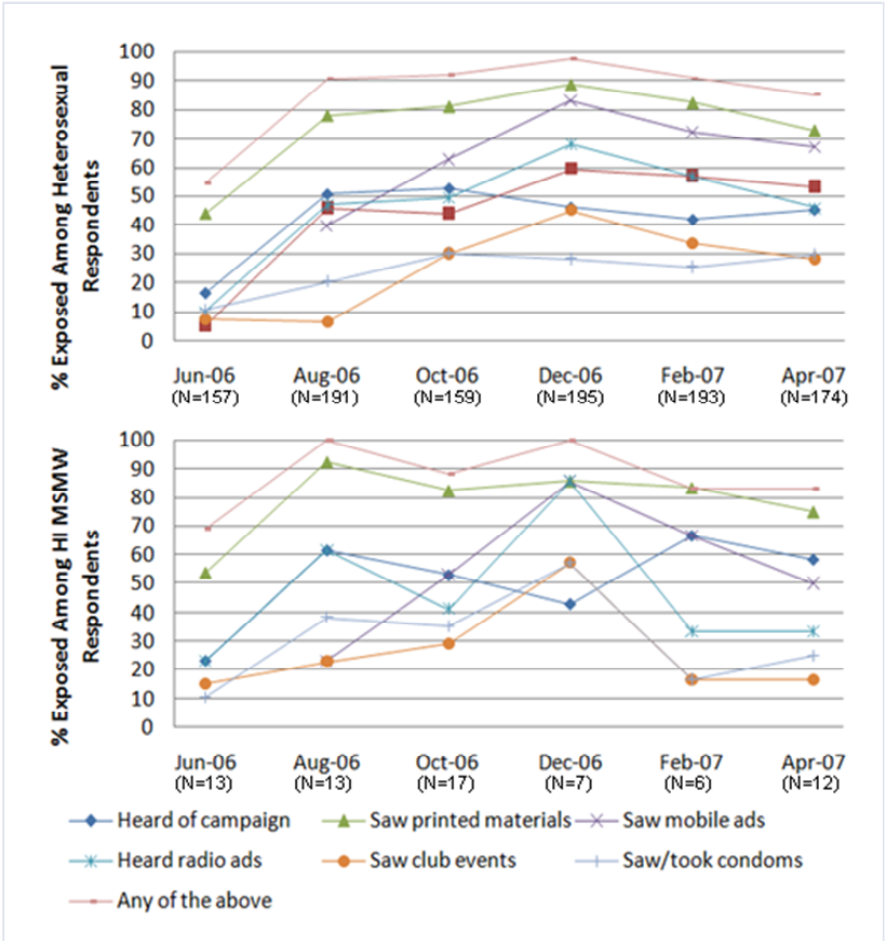

FIGURE 1. Exposure to the campaign channels by survey wave among the heterosexual subsample (N = 1,069) and the heterosexually-identified (HI) men who have sex with men and women (MSMW) subsample (N = 68). Note. The campaign was implemented from June 2006 through December 2006. The last two survey waves were completed once the campaign had been withdrawn. Mobile ads were not assessed during the first survey wave because this component was added later in the campaign.

the campaign) and then decreased gradually to 90.5% and 84.9% during the two subsequent waves. Table 1 displays average levels of exposure achieved by each of the different campaign channels. On average, about 85.9% of all respondents surveyed during the campaign and postcampaign periods (85.9% of heterosexuals and 86.8% of HI MSMW) reported exposure to at least one of the campaign channels. The highest exposure rates were achieved by printed materials (75.5%), followed by mobile ads (54.8%) and radio ads (47.3%). Exposure was not significantly different for the heterosexual and HI MSMW subsamples, with the exception of exposure to mobile ads. HI MSMW were less likely to be exposed to this campaign component than their heterosexual counterparts (p =.020; see Table 1).

TABLE 2. Response to the Hombres Sanos Campaign by Sexual Orientation among Heterosexually identified Latino Men (N = 1,051) Exposed to the Campaign in North San Diego County, 2006-2007

	All (960)	Heterosexual (*N* = 901)	HI MSMW (*N* = 59)	
	%	%	%	*p*[a]
Made appointment/went to see a doctor	9.9	9.8	10.8	.808
Made appointment for/ had a male health exam	24.1	24.4	18.5	.275
Used condoms when having sex	25.5	25.8	21.5	.449
Obtained or bought condoms	9.1	9.2	7.7	.677
Got tested for HIV	3.4	2.9	10.8	.001
Got tested for other STI	5.1	4.9	9.2	.123
Talked to sexual partner about using condoms	7.0	6.9	9.2	.476
Talked to sexual partner about STIs	8.5	8.3	10.8	.491
Thought of ways to reduce HIV/STI risk	2.6	2.2	7.7	.022
Any of the above	34.3	34.6	30.8	.530

Note. HI MSMW = Heterosexually-identified men who have sex with men and women; STI = sexually transmitted infection. Data are based on the subsample who reported having seen or heard specific elements of the campaign (respondents who had heard of the campaign [*n* = 17], but did not recall any of the specific elements of the campaign were not asked about their responses to the campaign). [a]*p* values are based on chi-square and Fisher's Exact tests.

RESPONSES ELICITED BY THE CAMPAIGN

The most common responses triggered by the campaign were using condoms when having sex (26.9%) and making an appointment to receive the HSE (25.5%). In all, 31.7% of the respondents exposed to the campaign reported at least one behavioral response that could reduce their risk for HIV infection. Responses to the campaign were generally higher among HI MSMW compared to the heterosexual subsample. In particular, HI MSMW were significantly more likely to report that as a consequence of the campaign they had been tested for HIV ($p < .001$) or thought of ways to reduce their risk for HIV infection ($p = .007$; Table 2).

SOCIODEMOGRAPHIC AND BEHAVIORAL FACTORS RELATED TO EXPOSURE

Personal Characteristics. Compared to the survey respondents not exposed to the campaign, exposed individuals were more likely to have completed high school or a higher education degree ($p = .020$), less likely to have been in the United States for less than a year ($p = .046$), and more likely to have been in the United States for 1 to 5 years ($p = .042$).

Sexual Orientation. When survey respondents of sexual orientations other than heterosexual ($N = 105$) were retained in the analyses, exposed participants were more likely to self-identify as heterosexual than their nonexposed counterparts (92.3% vs. 87.4%, $p = .030$). Adjusting for other sociodemographic variables and language of interview, HI respondents were 1.9 times more likely to report exposure to the campaign than respondents who self-identified as gay, bisexual, or other sexual orientation (95% CI: 1.1, 3.2, $p = .019$; data not shown).

TABLE 3. Association Between Campaign Exposure and HIV Risk Among a Community-Based Sample of Heterosexually-Identified Latino Men (*N* = 1,137) in North San Diego County, 2006-2007

	Nonexposed (*N* = 160) %	Exposed (*N* = 977) %	*p*[a]	AOR (95% CI)[b]	*p*[c]
Ever tested for HIV	27.5	37.7	.013	1.8 (1.2, 2.6)	.005
Tested for HIV during the last 6 months	5.9	10.0	.111	1.9 (.89, 4.0)	.097
Intends to get tested for HIV next 6 months	43.6	64.2	<.001	2.3 (1.6, 3.3)	<.001
Knows where to go for HIV testing	41.7	66.5	<.001	2.9 (2.0, 4.1)	<.001
Tested for other STIs	23.1	21.4	.622	.95 (.62, 1.4)	.808
Vaginal or anal sex with female during the last 60 days	53.1	66.9	<.001	1.6 (1.2, 2.3)	.006
Unprotected vaginal or anal sex with female during last 60 days	61.2	48.3	<.026	.67 (.42, 1.1)	.102
Anal sex with male during last 60 days	1.2	3.6	.151	3.4 (.79, 14.9)	.099
Unprotected anal sex with male during last 60 days	100	42.9	.204	—	—
Low perception of risk	71.7	65.0	.100	.72 (.49, 1.1)	.089
Carries condoms	11.3	18.2	.033	1.7 (.98, 2.8)	.060
Knowledge of community clinic	48.8	70.0	<.001	2.6 (1.8, 3.7)	<.001
Had a male health exam at community clinic	21.8	27.3	.295	1.3 (.72, 2.3)	.395
Intends to have Hombres Sanos exam	52.6	65.6	.022	1.5 (.94, 2.5)	.088

Note. STI. = sexually transmitted infections. [a]*p* values are based on chi-square and Fisher's Exact tests. [b]Adjusted odds ratios, 95% confidence intervals. [c]*p* values based on logistic regression models on the influence of campaign exposure on factors related to HIV risk, with adjustment for age, marital status, level of education, U.S. nativity status, length of residence on the U.S., occupation sector, and interview language.

Behavioral Factors. Results from bivariate analyses indicated that respondents exposed to the campaign were more likely than nonexposed respondents to have been tested for HIV (p =.013); know where they could get tested (p <.001); and intend to get tested within the next 6 months (p <.001). Exposed males were also more likely to report vaginal or anal intercourse with a female during the last 60 days (p <.001), but among those who had done so, exposed individuals were less likely to have had unprotected sex than their nonexposed counterparts (p <.001) (Table 3). Exposed respondents were also more likely to be carrying condoms than the nonexposed subsample (p <.033); to know the participating community clinic (p <.001); and intend to have the HSE (p =.022) than the subset who reported no exposure to the campaign (see Table 3).

The results of adjusted logistic regression models on behavioral factors were generally consistent with those from bivariate analyses.

DISCUSSION

This study examined the reach and impact of *Hombres Sanos*, a social marketing intervention to reduce HIV risk among HI Latino MSMW. Formative research con-

ducted to inform the design of the campaign suggested the need to use a dual campaign strategy focused on both heterosexual Latino men, in general, and HI Latino MSMW, in particular. The extent to which HI Latino MSMW identified with the general Latino male population, their efforts to blend with this larger group of reference, and their adherence to normative values held by the heterosexual Latino male population called for campaign efforts directed at changing HIV testing and condom use among the general population of Latino men as a way to effect changes within the HI Latino MSMW population. Our formative assessment and previous literature revealed high levels of stigma associated with HIV testing and important barriers to accessing preventive health services among our target audiences, including lack information on and availability of HIV testing services, fear of legal issues, transportation limitations, and language barriers. These findings suggested that HIV testing would be more acceptable and likely to be adopted by Latino men if it were embedded within more general, low-stigma preventive services. Further, they indicated the importance of advertising these services in a culturally sensitive manner and addressing issues of immigration legal status, monolinguism, and transportation.

The results of this evaluation suggest that the campaign was highly effective at reaching HI Latino men in general, and HI Latino MSMW in particular. The combination of multiple channels, targeted efforts in venues identified through formative research, and involvement of a large number of community venues throughout the intervention region translated into a high level of exposure, with almost 86% of heterosexual Latino men and HI Latino MSMW reporting having seen or heard about the campaign and their components. The level of exposure achieved is remarkable in light of the vast region the campaign tried to cover and the relatively low cost of the campaign. North San Diego County extends over about 1,020 square miles and consists of an estimated population of 842,000 people, of whom 31% are of Hispanic origin (SANDAG, 2008). Excluding the cost of the formative research, the evaluation component, and staff salaries, the net cost of the *Hombres Sanos* campaign activities, materials, and media pieces was about $60,000.

The levels of exposure achieved by the *Hombres Sanos* campaign compare favorably to previous social marketing and mass media campaigns to prevent HIV and other STIs among various populations. Geary, McClain, et al. (2007) estimated exposure to MTV's Staying Alive mass media campaign at 12% in Kathmandu, 23% in São Paulo, and 82% in Dakar. Keating et al. (2006) found exposure rates to the VISION campaign to increase HIV/AIDS awareness and prevention in Nigeria ranging from 24% to 59%. About 70% of adolescents in Sacramento, California, were estimated to have been exposed to a social marketing campaign to increase their condom use (Kennedy et al., 2000). A recent social marketing campaign to prevent syphilis among MSM in Miami, Florida, achieved a 36.5% exposure rate (Darrow & Biersteker, 2008).

As important as the reach achieved by a campaign is the extent to which the population reached represents the target audience. Our results suggest this was the case for the *Hombres Sanos* campaign. Not only were reported levels of exposure high among heterosexual Latino men and HI Latino MSMW included in our survey, but exposure was found to be positively correlated to a heterosexual identity. These findings support the notion that the campaign was appealing to and effectively reached the targeted audiences.

Previous literature on behavioral interventions to reduce HIV risk among Latinos has indicated that using ethnographic formative research methods and incorporating cultural beliefs increase the efficacy of such interventions (Herbst et al., 2007).

Our survey documented positive behavioral responses to the campaign among both heterosexual Latinos and HI Latino MSMW, including making an appointment for or receiving the HSE, using and/or obtaining condoms, and talking to sexual partners about condom use and HIV infection. In all, almost one out of three survey respondents exposed to the campaign reported having enacted at least one of several potential risk reduction measures as a result of the *Hombres Sanos* campaign. The campaign was particularly more effective in triggering responses, such as getting tested for HIV and thinking of ways to reduce HIV risk, among HI Latino MSMW than heterosexual Latinos. Survey respondents exposed to the campaign were significantly more likely to report a history of HIV testing, intentions to get tested for HIV, and knowledge of HIV-testing locations. The significant correlation between exposure to the campaign and factors that may help prevent HIV infection further suggest that the campaign may have reduced HIV risk in HI Latino men.

The study results are subject to several limitations. First, data are solely based on self-report measures and may be affected by recall bias, underreporting of sensitive information, and social desirability. Moreover, exposure to the campaign was measured through aided recall. These methods may have resulted in an overestimation of the reach of the campaign and incorrect classification of subjects' exposure status. Research has shown a moderately high and positive correlation between answers to unaided and aided recall questions (Ferber & Wales, 1958). The construct validity of our exposure measures is supported by the trends observed throughout successive survey waves, with exposure levels increasing over time during the campaign phase and then decreasing once the campaign was withdrawn.

The use of a cross-sectional design does not allow us to disentangle the direction and causality of the association found between campaign exposure and behavioral factors that may reduce HIV risk. We cannot rule out the possibility that it was a lower risk profile that increased the odds of exposure to the campaign or that both exposure and reduced risk were caused by a third variable. However, the validity of our inferences is increased by statistical adjustment for an important range of potential confounders. The lack of a comparison community or baseline data to which exposure and response data can be compared is another important limitation to the generalizability of the findings and represent design features to be improved in future studies.

Finally, the small size of the HI Latino MSMW subsample raises the question of the representativeness of this subsample with respect to the overall HI Latino MSMW population. The percentage of HI Latino MSMW found in our sample increases the generalizability of our results. Although HI Latino MSMW represented only 6% of the final sample, this percentage was greater than estimates of behavioral bisexuality in studies in Mexico and U.S. national samples (Izazola-Licea et al., 2003; Jeffries & Dodge, 2007; Mosher, Chandra, & Jones, 2005; Smith, 1991). The figure was slightly lower than that estimated by previous studies with Latino men in the United States (Montgomery et al., 2003; Wolitski et al., 2006), but this may have resulted from our use of anal sex as a defining criterion for sexual orientation, as opposed to including both anal and oral sex as sufficient conditions. It is possible that some of the respondents who were classified as heterosexual would have been classified as HI MSMW had we included oral sex as part of the classification criteria. Estimates of exposure rates and behavioral responses for the HI Latino MSMW subsample may have been different if alternative criteria and/or a larger sample had been used.

Despite these limitations, the results of this study suggest that the *Hombres Sanos* campaign was successful in reaching its underserved target population and may

have triggered behavioral changes associated with HIV testing and risk reduction among heterosexual Latino males and HI Latino MSMW. Given its reach potential and the complications in accessing a secretive and hard-to-reach population, our findings suggest that similar social marketing campaigns may be effective to promote HIV protective behaviors among HI Latino MSMW. Further, these results call for future studies with more rigorous designs and larger samples of HI Latino MSMW to further test the potential of this intervention approach, especially in light of the lack of evidence-based HIV prevention interventions for this population.

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