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PROJECT SALUD: EFFICACY OF A COMMUNITY-BASED HIV PREVENTION INTERVENTION FOR HISPANIC MIGRANT WORKERS IN SOUTH FLORIDA

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Abstract

Project Salud evaluates the efficacy of a community-based intervention to reduce risk behaviors and enhance factors for HIV-preventative behaviors. A randomized controlled trial of 278 high risk Latino migrant workers was conducted between 2008 and 2010. Participants completed an audio computer-assisted self-interview questionnaire at baseline and 3- and 9-month post-intervention follow-ups. Participants were randomly assigned to the community-based intervention (A-SEMI) or the health promotion condition (HPC). Both interventions consisted of four 2.5–hour interactive sessions and were structurally equivalent in administration and format. Relative to the comparison condition, A-SEMI participants reported more consistent condom use, were less likely to report never having used condoms, and were more likely to have used condoms at last sexual encounter during the past 90 and 30 days. A-SEMI participants also experienced a positive change in regard to factors for HIV-preventive behaviors over the entire 9-month period. Our results support the implementation of community-based, culturally tailored interventions among Latino migrant workers.

At 16.7% of the U.S. population, Latinos are the largest and fastest growing ethnic minority in the United States (U.S. Department of Commerce, 2012). The Latino community living in the United States has been disproportionally impacted by the HIV/AIDS epidemic. The Centers for Disease Control and Prevention (CDC) estimate that Latinos accounted for 20% of new HIV infections in 2009 while they represented only 16% of the U.S. population. In 2009, Latino men accounted for 79% of new infections among all Latinos, and the rate of new infections among Latino men was two and a half times as high as that of white men (39.9 per 100,000 vs. 15.9 per 100,000). While Latina women accounted for 21% of new infections among Latinos in 2009, their rate of HIV infection was more than four times that of white women (11.8 per 100,000 vs. 2.6 per 100,000) (CDC, 2008).

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Despite this alarming epidemiologic trend, the development, implementation, and evaluation of HIV prevention interventions designed to reduce the risk of infection among Latinos lags behind prevention efforts targeting other communities (CDC, 2008). This public health gap is even more evident when considering the sparse attention received by Latino migrant workers (LMWs) in the U.S. despite their high risk for HIV infection. Research has specifically linked migration to increased HIV incidence and vulnerability in a variety of contexts and places. First, migrant workers are a large and growing population with an estimated five million people living and working in the U.S. Second, migrant populations have a greater risk for poor health in general—and HIV infection in particular—due to circumstances including their economic transitions, decreased accessibility of health services, and complication of the host country health systems to address the needs of migrants. Third, the uniqueness of migrants often fosters a kind of ethnic/racial intolerance and hostility by the host community, which is likely to be even more severe with HIV-positive migrants, particularly in terms of stigmatization and discrimination. Thus, migrants may hide their HIV status as long as possible, making support services unavailable to them. Fourth, even if health providers were prepared to assist migrant populations, they would likely encounter great difficulties reaching out to them since many migrants live in constant fear of deportation, having no stay or work permit for the host country. Therefore, any contact with official government agencies increases that fear and is often accompanied by suspicion. Finally, compared to migrant worker populations in other areas of the United States, workers in the southeastern United States are more likely to live away from their families while doing farm and nursery work (Shtarkshall & Soskolne, 2000; Soskolne & Shtarkshall, 2002).

The few available studies on HIV transmission and prevention specifically conducted among LMWs highlight the role played by risk factors such as inadequate or incorrect HIV transmission knowledge, limited access to HIV risk reduction information, unprotected sexual practices, alcohol and other drug use, cultural and gender roles, and immediate survival problems (i.e., housing and employment) (Aranda-Naranjo & Gaskins, 1998; Fernández et al., 2004; Hernández et al., 2004; Organista, Organista & Soloff, 1998; Sanchez et al., 2004). While these studies have made a critical contribution to advance our understanding of the Latino migrant population in the U.S. and highlight numerous potential differences between this and other populations, their HIV prevention interventions have demonstrated only limited effectiveness and documented a critical need for tailoring effective HIV prevention interventions for the Latino migrant population (McCoy, McCoy, & Lai, 1998; McCoy, McCoy, Lai, Weatherby, & Messiah, 1999; Mishra & Conner, 1996; Weatherby et al., 1995, 1997). These adaptations, however, cannot be limited to the cultural translation of existing interventions as they would not be responsive to the cultural uniqueness of Latino migrant populations. The development of new interventions to address HIV prevention in Latino migrant communities needs to take into account their specific circumstances as well as their traditional mistrust of conventional research, which they view as paternalistic and irrelevant to their needs. Consequently, culturally adapted interventions must prompt community engagement and participation at every phase of the program if they do not want to remain culturally blind. Latino migrant workers are most likely to benefit from HIV prevention efforts when these efforts are supported at the community level, sustained over time, and other needs in the community are also addressed. The purpose of this article is to extend current knowledge about sexually related risk factors for HIV infection and report on the efficacy of a community-based HIV prevention pilot intervention in reducing risky sexual behaviors and enhancing factors (i.e., HIV knowledge) for HIV-preventive behaviors among Latino migrant workers.

Project Salud—officially entitled “HIV Risk Reduction Among High Risk Latino Migrant Workers in South Florida”—was a 3-year study funded by the National Institute on Minority

Health and Health Disparities as part of C-Salud, a P20 Exploratory Center of Excellence at Florida International University. Project Salud was conceived as a community-based participatory research (CBPR) project with the goal of engaging the LMW community in the Homestead/Florida City area in the development and implementation of a culturally tailored HIV prevention intervention. By framing Project Salud within the CBPR approach, this study responded to the National Institutes of Health (NIH) priority on establishing equitable partnerships between community members and researchers, with the final goal of increasing community participation in all stages of the research process, improving community health, and reducing HIV-related health disparities.

The main objective of Project Salud was to assess the differential efficacy of an Adapted Stage-Enhanced Motivational Interviewing (A-SEMI) condition compared to a Health Promotion Comparison (HPC) condition for producing reductions in HIV risk and increased health behaviors among LMWs. The design of the A-SEMI intervention is considered to be an enhancement over existing cognitive behavioral risk reduction approaches because A-SEMI integrates key contextual components from effective HIV prevention interventions (i.e., peer counseling) linked to maintenance of risk reduction effects. The A-SEMI intervention was culturally adapted in collaboration with the LMW community. Eight focus groups consisting of 83 community members and key community partners were conducted at the offices of the Farmworkers Association of Florida (FWAF) to discuss the factors that increased their HIV risks. Data obtained from the focus groups along with the existing body of literature informed the development of a culturally tailored intervention (A-SEMI) that reflected their cultural background, living conditions, and lifestyle, and was likely to be adopted by the community (Sanchez, Serna & De La Rosa, 2012).

Focus groups provide several advantages over the conventional methods in instrument development. First, focus groups are useful for developing insights into the perceptions and points of view of persons who have some common characteristics related to the research topic and for appreciating the variation in people's experiences (Morgan, 1993). The resulting intervention is more likely to be grounded in the experiences of the population under study. Generating knowledge from focus groups can provide reasonable assurance that the instrument is culturally anchored. Second, focus groups inform researchers about the language and terminology that particular groups of people use regarding the construct under study (Morgan, 1993). By preserving the terminology from the focus group, items included in the intervention may reflect the language of the population of interest. Third, the focus groups' social nature often stimulates stories and insights that would be missed otherwise (Asbury, 1995). Focus groups also reinforced the importance of getting community members involved in all stages of the study. Accordingly, we initiated a training program to train community members as community health workers (CHWs). Two CHWs played a key role as outreach workers and interviewers while four different CHWs delivered both interventions. A detailed description of this training program is described in a recently published article (Sanchez, Silva-Suarez, Serna, & De La Rosa, 2012).

The design of the A-SEMI intervention was guided by the theoretical foundations of social cognitive theory (Bandura, 1994), enhanced with peer education and motivational-enhancing therapy, with the objective of producing a stronger, more sustained HIV risk reduction effect among LMWs. Two trained CHWs delivered A-SEMI in Spanish during four 2.5–hour interactive group sessions that took place at the FWAF office in Homestead, Florida, on two consecutive weekends. Based on their schedule, group participants decided whether they wanted to have two sessions—one in the morning and one in the afternoon—on the same day (i.e., Sunday) or on different days (i.e., one session on Saturday and another on Sunday). On average, each group was composed of six participants. Session 1 of A-SEMI focused on developing group cohesion and addressing HIV education. Session 2 was devoted to

motivational enhancement and goal setting. Study subjects were helped in developing a specific and relevant personal risk-reduction plan that could be realistically accomplished with a sense of mastery and success. Session 3 focused on increasing commitment to and empowerment for safer sex. Session 4 focused on identifying high risk situations and negotiation skills through problem solving, assertiveness, and communication.

A Peer Counseling Intervention Component (PCIC) was integrated into the A-SEMI. PCIC has been employed in a number of effective HIV intervention studies (Baldwin, 1995; Latkin, 1998; Morisky, Ang, Coly, & Tiglao, 2004; Morisky & Ebin, 2000; Pearlman, Camberg, Wallace, Symons, & Finison, 2002). One of the strongest theoretical factors to a PCIC approach involves peer credibility. Community members—especially in isolated and hard to reach social environments—identify their peers as reliable and preferred sources of information on sexuality-related topics, including sexually transmitted infections and HIV. As a result, peers are more effective educators and yield higher levels of commitment.

Motivational Enhancing Therapy (MET) has been integrated into effective interventions for reducing substance abuse and HIV risk behaviors (Kalichman, Somlai, & Sikkema, 2001; Miller & Rollnick, 2002). Existing studies revealed that in many instances participants could demonstrate adequate post-intervention skills and knowledge associated with reducing risk, but lacked the motivation to actually do so. This evidence prompted us to incorporate MET strategies into A-SEMI. One added MET component is the provision of normative feedback. Based on the baseline assessment, normative feedback will be offered to assist A-SEMI participants in identifying reasons for changing HIV attitudes and risk behavior, and in eliciting self-motivating statements. This addition was based on Kalichman and colleagues' (Kalichman, Cherry & Browne-Sperling, 1999; Kalichman et al., 2001) adaptation for group administration of the MET normative feedback technique for HIV prevention. The influence of MET is also reflected in A-SEMI, which throughout places great emphasis on actively engaging participants in developing their own risk-reduction strategies and hierarchies of safety, rather than prescribing specific strategies as in more traditional cognitive behavioral interventions. When participants actively choose and develop risk-reduction strategies, this tends to increase personal involvement and the motivation to change (Miller & Rollnick, 2002).

For instance, Session 2 began with a brief review of Session 1 during which CHWs had initiated a discussion about ways to prevent HIV infection, including the use of condoms. Group members were provided with feedback that included their responses to the condom attitude measure collected at baseline. Condom attitudes were discussed via group activities that allowed participants to sort those attitudes into pros and cons of condom use. CHWs utilized the negative aspects of condom use as examples for the problem-solving skills addressed during Session 4.

The Health Promotion Condition (HPC) served as the comparison condition and targeted specific health issues of special relevance to LMWs, including general health strategies such as hygiene and living in crowded conditions, first aid, and skin problems. A-SEMI and HPC were structurally equivalent in administration, time, and format. They also were designed to be of a similar level of interest. Both interventions were guided by a written manual and were held in the same community setting, with refreshments/snacks and identical compensation for participation. In addition, equal quality control provisions were used, particularly regarding the need to verify that both interventions were delivered as designed (intervention fidelity), which was stressed during training and at the beginning of each session. All intervention sessions were digitally recorded by an attending staff member. A structured coding system was created and used to determine fidelity based on the digital recordings. The staff member also took notes during the sessions that were utilized to ensure

fidelity. Recordings and notes were reviewed by the project staff and discussed during biweekly meetings to ensure fidelity and to provide feedback to project staff.

METHODS

STUDY POPULATION

In order to be eligible for the study, potential participants had to meet the following eligibility criteria: (1) be of Latino origin; (2) 18 years of age or older; (3) have a “farm card”; (4) self-reported one or more episodes of unprotected sex in the past three months; (5) willing to be randomized to treatment and contacted for follow-up assessments; (6) likely to be in the general geographic area for six months; and (7) able to understand and provide written informed consent.

From November 2008 through March 2010, outreach workers screened 407 LMWs who were recruited by means of a stratified network-based (snowball) sampling design (Watters and Biernaki, 1989) from neighborhoods and migrant camps in the Homestead/Florida City area in South Florida, which is known for its high concentration of LMWs. Of these, 290 (70%) LMWs met eligibility criteria and consented to participate in the study. Of those who were ineligible, 53% were not sexually active or engaged in safe sex all the time, 21% were out of the age range, 16% were not likely to be in the target geographical area, and 10% declined to participate. All data collection and interventions took place in the Homestead office of the FWAF. Transportation and snacks were provided at every session. This study was approved by the Institutional Review Board (IRB) Human Subjects Office at Florida International University.

PROCEDURES

Assessments were conducted at baseline and at 3- and 9-month intervention follow-ups. Data were collected via an audio computer-assisted self-interview (ACASI) with the purpose of enhancing confidentiality among participants as well as increasing comprehension among participants with low literacy. A project staff member was always available during data collection to assist participants with any questions and/or technical difficulties. Each assessment was conducted in Spanish and took approximately 90 minutes. A project staff member secured the interview data as soon as participants had finished the assessment. Following the baseline assessment, participants were randomly assigned to the A-SEMI or HPC interventions using a computer-generated randomization table. Following each assessment and intervention session, participants received a monetary incentive as approved by the IRB.

MEASURES

Self-reported consistent condom use, the primary outcome, was defined as use of a condom during every episode of vaginal intercourse in the 30 days and 90 days prior to baseline and at the 3- and 9-month follow-up assessments. We selected consistent condom use during vaginal intercourse as the primary outcome for the study because of its demonstrated effectiveness against HIV transmission (De Vicenzi, 1994; Saracco et al., 1993). We decided to assess vaginal sex based on its significantly higher prevalence at baseline compared to anal sex (only 15.8% of female participants and 4.1% of male participants self-reported having engaged in anal sex during the last 3 months prior to baseline assessment) and its higher risk for HIV infection compared to oral sex (CDC, 2009). Other self-reported behavioral outcomes were never using condoms and condom use at last sexual encounter. Several techniques were utilized to enhance the validity of participants’ self-reported sexual behaviors. Calendaring techniques and consistency checks were used to enhance accurate recall.

Psychosocial variables were derived from the underlying theoretical frameworks and a review of the empirical literature. Constructs were assessed using scales with acceptable psychometrics previously used in similar studies (Marin, Gomez, Tschann, & Gregorich, 1997, 1998; Sikkema et al., 2000; St. Lawrence et al., 1999; Wingood & DiClemente, 1998). Traditional view of gender roles was measured with a gender roles scale comprising 10 items, with higher scores indicating a less traditional view of gender roles ($\alpha = .70$). HIV prevention knowledge was measured using an 8-item scale ($\alpha = .78$), with higher scores indicating greater knowledge about HIV. Perceived barriers to condom use were measured using a 29-item scale ($\alpha = .95$), with higher scores indicating fewer perceived barriers. Condom use self-efficacy was measured with a 9-item scale ($\alpha = .90$) reflecting participants' confidence in their ability to properly use condoms, with higher scores indicating greater self-efficacy.

DATA ANALYSIS

Analyses were performed using an intent-to-treat protocol in which participants were analyzed in their original assigned study conditions irrespective of the number of sessions attended (Piantadosi, 1997; Pocock, 1993). Baseline differences between participants in the two interventions on sociodemographic, behavioral, and psychological variables with *p* values of .05 or lower were considered significant for purposes of identifying potential covariates. We assessed differences between interventions with the t-test for continuous variables and χ^2 analysis for categorical variables. Of these variables, only having a primary physician was statistically significant. Overall, the majority of participants (75.5%, $n = 210$) did not have a primary physician. At baseline, 64.3% ($n = 90$) of participants randomized to A-SEMI and 87% ($n = 120$) of participants randomized to HPC did not have a primary physician. Because of the significant difference between participants in the two interventions in the prevalence of primary physician at baseline ($p < .001$), we included this variable as a covariate in all subsequent data analyses.

We assessed the intervention effects of A-SEMI from baseline to the 3-month follow-up, from the 3-month follow-up to the 9-month follow-up, and for the entire 9-month period from baseline to the 9-month follow-up. We analyzed the intervention effects for each assessment period with logistic regression to compute adjusted odds ratios (AORs) for dichotomous outcomes and linear regression to compute adjusted means and mean differences for continuous variables (Hosmer & Lemeshow, 1989; Kleinbaum, Kupper, Muller, & Nizam, 1998). Each regression model included the corresponding baseline measure as a covariate in the analysis as well as a measure of intraclass correlation.

To assess the A-SEMI intervention effects for the entire 9-month follow-up period, we utilized logistic and linear generalized estimating equation regression models to control for repeated within-person measurements (Hardin & Hilbe, 2003; Liang & Zeger, 1986). These models incorporated the study conditions as well as covariates and outcomes. We adjusted models for the corresponding baseline measure and covariates to obtain AORs and adjusted mean differences. We also computed the 95% confidence interval (CI) and the corresponding *p* value. For each model, we calculated adjusted means and standard errors. We calculated percentage relative change for continuous variables as the difference between the adjusted means for each condition divided by the adjusted mean for the comparison condition.

RESULTS

Of the 290 randomized participants, 145 were allocated to the A-SEMI intervention and the other 145 to the HPC intervention. Data on 12 study participants were incomplete and therefore not included in data analysis. As a result, results are based on the remaining 278

study participants, of which 140 were assigned to the A-SEMI intervention and 138 to the HPC intervention.

Table 1 contains a description of the 278 participants in the sample by intervention group. Study participants were 54.3% male. Mean age at baseline was 37.2 years (*SD* = 5.88). Mexico represented the largest group (43.2%) by country of origin, followed by Guatemala (20.1%), Honduras (10.1%), and others (26.6%). Slightly more than one-quarter of participants (27.7%) did not have any formal education and more than two-thirds (68.7%) had not graduated from high school. A large majority (88.1%) of study participants did not have health insurance and slightly more than three-quarters (75.5%) did not have a primary physician. Almost two-thirds (61.9%) of study participants reported not having received needed medical care in the last 12 months. During the last year prior to baseline assessment, study participants reported having an average of 3.15 sexual partners (*SD* = 1.8). Almost half (48.6%) of the sample reported having only one sexual partner. However, in the past 90 days, most participants (77.6%) reported having only one sexual partner, who was often (61.1%) described as a main sexual partner. No significant differences were observed across gender.

In both interventions, 94% of the curricula activities were conducted according to protocol. Participants' attendance was high: 88.3% (*n* = 128) of participants completed all four A-SEMI sessions, and 86.2% (*n* = 125) completed all four HPC sessions. On a 7-point scale, study participants in both interventions reported comparable high satisfaction ratings (A-SEMI mean = 6.3, *SD* = 0.22 vs. HPC mean = 6.14, *SD* = .37). We found no significant differences in attrition across the two interventions (A-SEMI 3-month assessment = 91.1%, 9-month assessment = 88.3% vs. HPC 3-month assessment = 88.7%, 9-month assessment = 86.2%). We strongly believe that our partnership with the FWAF and the fact that all study-related activities were conducted at their Homestead office contributed to the study's high retention rates.

Effects of the intervention on the primary outcome, consistent condom use, and other dichotomous outcomes are presented in Table 2. These analyses were performed separately at the 3-month assessment (baseline to 3-month assessment), at the 9-month assessment (3- to 9-month assessment), and over the entire 9-month assessment (baseline to 9-month assessment). Over the entire 9-month follow-up period, A-SEMI participants were 4.6 times as likely as HPC participants to report using condoms consistently during the past 90 days ($p < .001$) and 3 times as likely to report using condoms consistently during the past 30 days ($p < .001$). Similarly, over the entire 9-month follow-up period, A-SEMI participants were 55% less likely compared to HPC participants to report never having used condoms during the past 90 days (AOR = 0.45; 95% CI = 0.27, 0.80) and 49% less likely to report never having used condoms during the last 30 days (AOR=0.51; 95% CI = 0.28, 0.93). Finally, A-SEMI participants were 2.6 times more likely to report using condoms at last sexual encounter ($p < .001$) compared to HPC participants.

The effects of the hypothesized psychosocial factors for HIV risk reduction behaviors are presented in Table 3. We observed that psychosocial factors for HIV risk reduction behaviors experienced a positive change over the entire 9-month follow-up period. A-SEMI participants reported fewer traditional views of gender roles ($p = .006$) than did HPC participants. They also featured higher HIV knowledge ($p = .009$) and reported fewer perceived barriers to condom use ($p < .001$) and greater condom use self-efficacy ($p < .001$).

DISCUSSION

Most of the few HIV prevention interventions that target LMWs were initially developed for nonmigrant populations and eventually adapted to target this community (Painter, Organista, Rhodes & Sañudo, 2012). The existing literature identifies only three interventions that were specifically developed to address HIV prevention among LMWs and demonstrated some degree of efficacy (Painter, Organista, Rhodes & Sañudo, 2012). Project Salud makes a significant contribution to this limited body of literature by developing—in close collaboration with the LMW community—a culturally tailored HIV prevention intervention (A-SEMI) that addressed the specific needs of the community. Over the entire 9-month period, promising A-SEMI intervention effects were observed for consistent condom use over the last 90 and 30 days prior to assessment. Similarly, positive intervention effects were observed for never having used condoms over the last 90 and 30 days prior to assessment, and using a condom at their last sexual encounter. We also observed favorable changes in hypothesized psychosocial factors for HIV risk reduction over the 9-month follow-up period.

The success of the A-SEMI intervention may be attributable to several factors. A review of various studies (Herbst et al., 2007) underlined the importance of using trained community members as health educators to implement HIV sexual risk reduction interventions. Our results reinforce this finding by describing how community members were trained as community health workers and played a key role in administering the interventions. These CHWs delivered the intervention curriculum with outstanding fidelity and received very positive ratings from study participants. The observed improvements may also be partly attributable to the adaptation of the intervention to highlight the underlying cultural background, living conditions, and lifestyle of the LMW community. This community background was integrated into the different phases of the study, from recruitment and retention of study participants to the administration of questionnaires and interventions. Moreover, community members and partners were deeply involved and played a key role at every stage of the study. Without their collaboration, this study would have not been possible.

This study is not without limitations. First, the study did not test participants for HIV and other STIs. Prevalence and incidence information among LMWs is very sparse, and this study could have made a significant contribution in that regard. However, community members and partners considered that making HIV testing an eligibility criterion would have compromised participation and interfered with the process of gaining trust in the community. A second methodological concern is the fact that behavioral risk data in the study were self-reported and subject to recall bias. We attempted to minimize this concern through the use of calendaring techniques designed to maximize recall (McElrath, Chitwood, Griffin, & Comerford, 1994). Moreover, prior research has established the validity and reliability of self-reported risk behaviors (Jaccard & Wan, 1995; Miller, Turner & Moses, 1990; Ochs & Binik, 1999). Third, this study does not claim to be representative of all LMWs in South Florida because it is impossible to enumerate this population and sample it in a random manner. We attempted to increase the representativeness of the sample by selecting study participants from different neighborhoods and camps within the Homestead/Florida City area.

Project Salud demonstrated the feasibility of developing and delivering a brief HIV prevention intervention to LMWs, traditionally considered a hard to access population at high risk for HIV infection. This study has laid the groundwork for a more comprehensive study that will test the efficacy of Project Salud to promote long-term behavioral changes among this population. Project Salud will also benefit from adopting a socioenvironmental

framework in which HIV-related risk behaviors are embedded within the dynamic interplay of key social, environmental, and individual factors. Finally, Project Salud will conduct testing for HIV and other STIs to assess objective biological outcomes that estimate incident infection rates as well as intervention efficacy.

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TABLE 1

Characteristics of Study Participants by Intervention

Characteristics	A-SEMI (*n* = 140) %	HPC (*n* = 138) %	Total (*n* = 278) %
Gender			
Male	52.1	56.3	54.3
Female	47.9	43.7	45.7
Age, mean (SD)	36.6 (4.41)	39.4 (3.91)	37.2 (5.88)
Country of Origin			
Mexico	44.2	42.0	43.2
Guatemala	18.6	21.8	20.1
Honduras	10.7	9.4	10.1
Others	26.5	26.8	26.6
Education			
No formal education	28.6	26.8	27.7
< High School degree	66.4	71.0	68.7
> High School degree	5.0	2.2	3.6
Health Insurance			
No	85.7	90.6	88.1
Yes	14.3	9.4	11.9
Primary Physician*			
No	64.3	87.0	75.5
Yes	35.7	13.0	24.5
Received Medical Care when needed in last 12 months			
No	58.6	65.2	61.9
Yes	41.1	34.8	38.1
Number of Sexual Partners in 90 days prior to Baseline			
1	74.3	81.2	77.6
2 or more	25.7	18.8	22.4

* $p < .001$.

TABLE 2

Effects of A-SEMI and HPC Interventions for Latino Migrant Workers on Condom Use Behaviors

	Baseline Assessment[a]		3-Month Assessment[a]				9-Month Assessment[a]				GEE Model Baseline to 9-Month Assessment	
	A-SEMI	HPC	A-SEMI	HPC	AOR[b]		A-SEMI	HPC	AOR		AOR	
Behavior	**%**	**%**	**%**	**%**	**(95% CI)**	***p***	**%**	**%**	**(95% CI)**	***p***	**(95% CI)**	***p***
Consistent Condom Use												
Past 90 days	5.2	5.6	45.3	17.4	5.28 [2.33, 13.58]	< .001	38.2	15.4	4.66 [2.18, 9.96]	< .001	4.62 [2.37, 9.67]	< .001
Past 30 days	10.4	9.8	51.6	23.8	3.03 [1.65, 7.14]	0.004	44.5	24.5	3.33 [1.58, 7.12]	< .001	3.03 [1.65, 5.52]	< .001
Never Used Condoms												
Past 90 days	63.1	66	23.5	41.2	0.29 [0.13, 0.74]	0.006	32.1	45.7	0.51 [0.23, 0.99]	0.05	0.45 [0.27, 0.80]	0.008
Past 30 days	70.5	73.1	30.7	49.1	0.58 [0.24, 0.82]	0.005	36.6	48.4	0.46 [0.26, 1.02]	0.06	0.51 [0.28, 0.93]	0.02
Condom Use at Last Sexual Encounter	14.8	17.2	59.3	31.6	3.49 [1.77, 6.86]	< .001	50.3	34.6	2.03 [1.10, 3.51]	0.02	2.61 [1.58, 4.59]	< .001

[a] *Note*. Unadjusted proportions.

[b] Adjusted for Baseline value of the outcome variable and having a primary physician; HPC (comparison intervention) was the referent for computing the AOR.

TABLE 3

Effects of A-SEMI and HPC Interventions for Latino Migrant Workers on Psychosocial Mediators of Preventive Behavior, Baseline to 9-Month Assessment

	Baseline Assessment		GEE Model Baseline to 9-Month Assessment	
	A-SEMI Unadjusted	HPC Unadjusted	Relative Change[a]	
Mediator	**Mean (*SD*)**	**Mean (*SD*)**	**% (95% CI)**	***P***
Traditional View of Gender Roles (range = 10–40)	21.42 (4.53)	20.12 (3.86)	5.14 (3.40, 6.43)	0.006
HIV Prevention Knowledge (Range = 1–8)	6.19 (1.11)	6.34 (1.08)	2.82 (1.65, 4.06)	0.009
Perceived Barriers to Condom Use (Range = 29–116)	67.15 (14.86)	65.16 (13.39)	13.03 (8.65, 9.12)	<.001
Condom Use Self-Efficacy (Range = 9–27)	20.57 (4.02)	19. 88 (5.13)	9.78 (7.14, 11.66)	<.001

[a] *Note*. Relative Change = (Mean difference between A-SEMI and HPC/mean for HPC × 100%) and 95% CI around the relative change.