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AIDS Knowledge Among Latinos: Findings From a Community and Agricultural Labor Camp Survey

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The authors assessed knowledge about AIDS and its modes of transmission in Latino adults from northern California via a survey administered in 2000 to 461 women and 356 men from a community sample and 188 men from a labor camp sample. The majority of respondents viewed AIDS as a serious problem in their community. Knowledge about how AIDS is transmitted varied from accurate beliefs about the virus being transmitted by biomedical modes to inaccurate beliefs about its transmittal through casual contact. A multiple regression analysis identified three groups with the highest misconceptions about AIDS transmission: Latinos with low educational attainment, particularly men from labor camps; Latinos who were the oldest in the sample (40 to 64 years of age); and Latinos with low educational attainment who had not visited a doctor recently. These findings identify groups with high misconceptions about AIDS who will benefit from special outreach and education.

Keywords: *AIDS; knowledge; health behaviors; Hispanic Americans; surveys*

The national incidence rate of AIDS among Latinos is more than three times that of non-Latino Whites (23% versus 7%, respectively) (Centers for Disease Control, 2000); in California, the incidence rate is 29% versus 18%, respectively (California Health and Human Services Agency, 2002). Latino-White disparities in AIDS mortality rates also exist; Latina women are five times as likely as non-Latino White women to die from AIDS, and Latino

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men are twice as likely as non-Latino White men to die (National Alliance for Hispanic Health, 2000).

Past studies have identified several Latino groups at high risk of contracting AIDS. Women and men having unprotected sex with HIV-positive men are at the highest risk (California Health and Human Services Agency, 2002). A second high-risk group is composed of men born in Mexico. Approximately 40% of Latino AIDS cases are among men of Mexican origin, and 86% of these men are born in Mexico (California Health and Human Services Agency, 2002). A third high-risk group includes men who live in agricultural labor camps. Because most of these men are from Mexico, it is unclear whether they form a separate risk group apart from men born in Mexico; however, they are an important group because some return home to Mexico and infect their wives (Hirsch, Higgins, Bentley, & Nathanson, 2002; Organista & Balls Organista, 1997). The migration patterns of these men may therefore contribute to the increasing number of AIDS cases in Mexico (Salgado de Snyder, Díaz Pérez, & Maldonado, 1996).

Poor knowledge about the AIDS virus and its modes of transmission most likely contributes to the growing AIDS epidemic in the Latino community. Overall, U.S. Latinos appear to have less general knowledge about AIDS than do non-Latino Whites (Hardy, 1990; McCaig, Hardy, & Winn, 1991). Knowledge about the modes of transmission has generally varied from accurate beliefs about the virus being transmitted by biomedical factors (e.g., passed through unprotected sex or transmitted during childbirth) to inaccurate beliefs about the virus being transmitted through casual contact (e.g., being coughed on or being near someone with AIDS). Studies suggest that Latinos are more likely to believe that AIDS is transmitted by casual modes than are non-Latino Whites, who are more likely to believe that AIDS is transmitted by biomedical modes (Hardy, 1990; McCaig et al., 1991).

Despite the disparity in AIDS incidence and mortality among Latinos and misconceptions about its modes of transmission, few studies have been conducted with representative samples to examine the extent to which knowledge about AIDS and its modes of transmission differs within subgroups of

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this diverse population. Past studies have shown that knowledge about AIDS does not vary greatly by age, gender, or length of time lived in the United States (Miller, Guarnaccia, & Fasina, 2002). However, studies have shown that knowledge varies by level of acculturation and education, with less acculturated Latinos and those with fewer than 12 years of education being more likely to believe that AIDS can be transmitted via casual modes (Marín & Marín, 1990; Nyamathi, Bennett, Leake, Lewis, & Flaskerud, 1993). Knowledge about AIDS also appears to vary by ethnic subgroup; Latinos of Mexican origin are more likely to inaccurately believe that AIDS is transmitted through casual contact compared with those from Puerto Rico, Cuba, or other Latin American countries (Biddlecom & Hardy, 1991). Furthermore, one third to one half of Mexican women living on agricultural labor camps believe in casual modes of AIDS transmission (Balls Organista, Organista, & Soloff, 1998).

Whereas previous studies have identified Latino subgroups that are most likely to have misconceptions about AIDS and its modes of transmission, many of these studies are limited by outdated information, small sample sizes, and/or nonrepresentative samples. Latinos who only speak Spanish, who do not have listed telephones, or who live in labor camps have often been excluded from previous work.

We conducted a survey to assess knowledge about AIDS and its modes of transmission in a representative sample of Latino women and men from northern California. Our primary aims were to (a) determine the extent to which knowledge about biomedical and casual modes of AIDS transmission differed in three groups (women from a community sample, men from a community sample, and men from a labor camp sample) and (b) identify sociodemographic and health-related factors that were most strongly related to knowledge about AIDS transmission. Results from this study allowed us to learn more about the AIDS educational needs of Latino subgroups and develop recommendations for programs that can address their needs.

Method

Design and Procedure

A cross-sectional survey was administered in 2000 to two samples of Latinos, aged 18 to 64, from Monterey County, California, a coastal community known for its agricultural industry and diverse Latino population. The survey assessed AIDS, cancer risk factors, and other important issues in the community (Winkleby, Snider, Davis, Jennings, & Ahn, 2003). The first sample con-

sisted of women and men living in the community who were contacted by telephone (community sample). The second sample consisted of men residing in agricultural labor camps who were contacted in person (labor camp sample). Questions for the 166-item survey were adapted from the Centers for Disease Control and Prevention's (1998) Behavioral Risk Factor Surveillance System survey (see <http://www.cdc.gov/nccdphp/brfss>). The survey was administered by bilingual, bicultural interviewers in either Spanish or English to ensure high response rates.

Sampling Scheme

The sampling scheme was designed to yield a representative sample of Latino adults while maximizing the efficiency of survey administration. A total of 87% of Latinos in Monterey County reside in the 34 census tracts that compose the eastern part of the county (U.S. Census Bureau, 2000). Therefore, sampling was limited to this region, which was divided into two strata to ensure an equal number of participants from the urban areas (Stratum 1 = 28 census tracts and 68% Latino) and the more rural areas (Stratum 2 = 6 census tracts and 78% Latino).

For the women and men in the community sample, telephone numbers were purchased from a commercial sampling firm. All telephone exchanges (i.e., area code and prefix) used within Stratum 1 and 2 were identified. Based on these exchanges, listed and unlisted telephone numbers were drawn for each of the two strata. More than 75% of the telephone numbers were unlisted. Once a household was determined to be eligible, one Latino aged 18 to 64 was randomly selected using a method developed by Kish (1995). If the selected respondent did not wish to participate or was unavailable during the survey period, another household was selected.

For men in the labor camp sample, Latino adults were selected from all of the county-licensed camps ($n = 24$) and a portion of the unlicensed camps ($n = 5$; the total number of unlicensed labor camps is unknown). Housing units within each camp were randomly selected, and three visits were made to determine whether an age-eligible Latino lived in the housing unit. Once a household was determined to be eligible, one Latino aged 18 to 64 was randomly selected using the same method as that for the women and men in the community sample. Because of the small number of women who were found to be living in labor camps and thus sampled ($n = 13$), their surveys were excluded from the analysis. For both the community and labor camp samples, approximately equal numbers of interviews were completed within Stratum 1 and 2.

Definition of Variables

Ethnicity. This variable was defined by a single screening question: "Are you of Mexican, Latino, or Hispanic background? This includes people who were born, or whose relatives were born in Mexico, Central America, or South America."

Sociodemographic factors. These variables included age (in years), education (in years), length of time lived in the United States (in years), primary language spoken at home (Spanish, English, or both equally), marital status (married, living as married, or not married), and country of birth (United States, Mexico, or Central or South America).

Health-related factors. These factors included insurance status (none, private, or public), time since last visit to a doctor or health care provider (within past year, 1 to 2 years ago, 2 to 5 years ago, more than 5 years ago, or never), and whether a doctor or health care provider had ever discussed HIV/AIDS with the respondent (yes or no).

Perceived extent of the AIDS problem. This variable included one question asking respondents how much they felt AIDS was a problem for Latinos in their community. Responses were rated on a 4-point Likert-type scale ranging from *a lot* to *not at all*.

Knowledge of AIDS transmission. These variables included three questions on perceived biomedical modes of transmission (caused by a virus, passed through unprotected sex, or transmitted during pregnancy) and five questions on perceived casual modes of transmission (being coughed or sneezed on, working near someone with AIDS, attending school with someone with AIDS, using public toilets, or eating in a restaurant where the cook has AIDS). Responses were rated on a 4-point Likert-type scale and ranged from *definitely true* to *definitely false* or from *very much at risk* to *not at risk*. Respondents were given 1 point for each correct answer. A summary score for knowledge of AIDS transmission was created using the three biomedical transmission questions and the five casual transmission questions. Scores ranged from 0 to 8, with 8 reflecting the highest level of knowledge.

Statistical Methods

We divided the community and labor camp samples into the following three groups for analyses: women in the community sample, men in the com-

munity sample, and men in the labor camp sample. Missing data ranged from a low of 0% for age to a high of 4% for time since last visit to a doctor or health care professional. Because of the low number of missing values, they were deleted from the analyses rather than being imputed.

We used a multiple regression model to identify which sociodemographic and health-related factors were most strongly associated with knowledge about AIDS and its modes of transmission. The 8-point summary score for knowledge of AIDS transmission was used as the dependent variable. Based on associations found in past studies, the following eight sociodemographic and health-related factors were considered as possible independent variables: age, education, years lived in the United States, primary language spoken at home, marital status, country of birth, insurance status, and time since last visit to a doctor or health care provider. For the final model, preference was given to independent variables that were not highly collinear. Primary language spoken at home and country of birth were excluded because of high collinearity with education and length of time in the United States ($r \geq .55$).

Independent variables included in the final model were age in years (centered on the sample mean to aid in the interpretation of the regression coefficients, i.e., age minus mean age; Cronbach, 1987), education in years (centered on 12 years), years lived in the United States (centered on the sample mean), marital status, insurance status, and time since last visit to a doctor or health care provider. Group sample (women in the community sample, men in the community sample, and men in the labor camp sample) was also included as an independent variable to assess whether knowledge about AIDS and its modes of transmission differed across the three groups. We used a stepwise forward procedure that forced in all main effects and allowed the entry of all first-order interactions that were significant at $p \leq .01$.

Results

A total of 1,005 Latino women and men participated in the survey; 100% had complete data on knowledge of AIDS transmission. There were high response rates, with 87% of eligible adults in the community sample (461 women and 356 men) and 98% of eligible men in the labor camp sample (188 men) completing the survey. Eligible adults who did not participate either refused to be interviewed ($n = 108$) or terminated the survey before it was completed ($n = 15$). Spanish versions of the survey were administered to 35% of the community sample and 98% of the labor camp sample.

Table 1. Sociodemographic and Health-Related Factors of Latino Women and Men Ages 18 to 64 by Group Sample

	Community Sample		Labor Camp Sample
	Women (<i>n</i> = 461)	Men (<i>n</i> = 356)	Men (<i>n</i> = 188)
Sociodemographic factors			
Mean age (\pm <i>SD</i>)	36.6(\pm 11.3)	34.9(\pm 11.8)	33.3 (\pm 9.1)
Mean education (\pm <i>SD</i>)	9.1 (\pm 4.4)	9.4 (\pm 4.4)	4.3 (\pm 2.8)
Mean years in			
United States (\pm <i>SD</i>)	22.6(\pm 13.9)	21.9(\pm 13.5)	10.4 (\pm 8.5)
Spanish primary language spoken at home (%)	66.6	67.7	100.0
Country of birth (%)			
United States	30.8	29.2	0.5
Mexico	67.2	69.4	98.5
Central or South America	2.0	1.4	1.0
Married or lived as married (%)	68.8	66.6	31.6
Health-related factors			
Insurance status (%)			
None	28.1	30.9	65.4
Private	51.0	62.6	33.5
Public	20.9	6.5	1.1
Last visit to a doctor or health care provider (%)			
Within past year	89.7	74.3	45.6
1 to 2 years ago	6.3	10.1	3.5
2 to 5 years ago	2.2	8.4	24.3
More than 5 years ago or never	1.8	7.2	26.6
Doctor or health care provider never discussed HIV/AIDS with respondent (%)	57.5	73.5	79.8

Sociodemographic and Health-Related Factors

Overall, the women and men in the community sample were similar on most of the sociodemographic factors when compared with men in the labor camp sample (see Table 1). Respondents from all three samples were between 33 and 37 years of age on average. Educational attainment was generally low, with women and men from the community sample having approximately a ninth-grade education and men from the labor camp sample having a fourth-grade education. Whereas many respondents were long-term resi-

dents of the United States, length of time in the United States varied across the three samples, with women and men from the community sample having lived in the United States about twice as long as men from the labor camp sample (approximately 20 versus 10 years). The majority of all respondents spoke Spanish at home. About two thirds of the community sample and almost all of the labor camp sample were born in Mexico. Approximately two thirds of the women and men in the community sample were married or lived as married compared with one third of the men in the labor camp sample.

There were more differences between women and men in the community sample and men in the labor camp sample on health-related factors (see Table 1). For example, about 70% of the women and men in the community sample had private or public health insurance compared with only 35% of the men in the labor camp sample, among whom 65% had no health insurance. Women and men in the community sample were also much more likely to have seen a doctor or health care provider within the past year compared with men in the labor camp sample; more than one fourth of the labor camp sample had not seen a doctor or health care provider in more than 5 years. Finally, a doctor or health care provider was less likely to have discussed HIV/AIDS with men from both samples compared with women from the community sample.

Knowledge of AIDS and Its Modes of Transmission

A high proportion of respondents from each of the three group samples viewed AIDS as a serious problem in their community (56% to 81%), with men in the labor camp sample being the most likely to view AIDS as a serious problem (see Table 2).

The majority of respondents from each of the groups correctly identified three biomedical modes of AIDS transmission: that it is caused by a virus, can be passed through unprotected sex, or can be transmitted during pregnancy (62% to 91%, with women and men in the community sample scoring the highest percentage of correct answers and men from the labor camp sample scoring the lowest; see Table 2). When including answers that were almost correct ("probably true"), almost 100% of respondents from each of the three groups correctly identified the three biomedical modes of AIDS transmission.

In contrast, a much larger proportion of respondents had misconceptions about the five casual modes of AIDS transmission. For example, 8% to 12% of the women and men in the community sample compared with 30% of the men in the labor camp sample felt that AIDS could be transmitted by being coughed or sneezed on or by working or attending school with someone with

Table 2. Knowledge of AIDS and Its Modes of Transmission (in percentages)

AIDS Questions	Community Sample		Labor Camp Sample
	Women (n = 461)	Men (n = 356)	Men (n = 188)
Extent of problem			
How much is AIDS a problem for Latinos in your community?			
A lot	58.5	55.8	81.1
Some	23.8	19.5	13.9
A little	11.8	13.1	4.4
Not at all	5.9	11.6	0.6
Biomedical modes of AIDS transmission			
It is an infectious disease caused by a virus.			
Definitely true	72.8	82.2	61.7
Probably true	21.9	14.9	36.0
Probably false	1.3	1.7	1.1
Definitely false	4.0	1.1	1.1
It can be passed through unprotected sex.			
Definitely true	89.5	90.6	61.7
Probably true	10.0	8.8	36.1
Probably false	0.2	0.0	2.2
Definitely false	0.2	0.6	0.0
Pregnant women with AIDS can give it to baby.			
Definitely true	70.8	73.3	64.8
Probably true	26.5	23.8	33.5
Probably false	2.0	2.3	0.5
Definitely false	0.7	0.6	1.1
Casual modes of AIDS transmission			
It is possible to get AIDS by being coughed or sneezed on.			
Definitely true	9.5	8.3	29.6
Probably true	23.5	21.7	19.5
Probably false	24.8	24.0	40.2
Definitely false	42.2	46.0	10.7
Working near someone with AIDS puts you			
Very much at risk	11.9	9.4	29.9
Somewhat at risk	15.4	16.0	13.0
Not very much at risk	29.2	33.0	37.9
Not at risk	43.5	41.6	19.2

(continued)

Table 2 (continued)

AIDS Questions	Community Sample		Labor Camp Sample
	Women (<i>n</i> = 461)	Men (<i>n</i> = 356)	Men (<i>n</i> = 188)
Attending school with someone with AIDS puts you			
Very much at risk	9.5	8.2	30.4
Somewhat at risk	10.1	9.7	9.4
Not very much at risk	29.5	33.2	33.7
Not at risk	50.9	48.9	26.5
Using public toilets puts you			
Very much at risk	23.2	16.4	47.2
Somewhat at risk	20.5	20.7	11.1
Not very much at risk	29.4	35.4	28.9
Not at risk	26.9	27.4	12.8
Eating in a restaurant where the cook has AIDS puts you			
Very much at risk	25.5	26.7	37.6
Somewhat at risk	23.9	25.0	8.8
Not very much at risk	28.6	30.7	24.9
Not at risk	22.0	17.6	28.7
Knowledge of AIDS transmission			
Summary score of biomedical and casual modes of transmission (\bar{x}) ^a	4.3	4.4	2.6

a. Summary score of the three biomedical transmission questions and the five casual transmission questions scored from 0 to 8, with 8 reflecting the highest level of knowledge.

AIDS. About 20% to 25% of the community sample and 40% to 50% of the labor camp sample felt that using public toilets or eating in a restaurant where the cook has AIDS put them "very much at risk" for AIDS. The women and the men in the community sample obtained a higher summary score for knowledge about AIDS transmission (4.3 and 4.4 answers correct, respectively, out of 8) compared with men in the labor camp sample (2.6 answers correct).

The results of the multiple regression analysis, which identified sociodemographic and health-related factors most strongly associated with knowledge of AIDS transmission, are shown in Table 3. Years of education was the only main effect that was significantly associated with greater knowledge of AIDS transmission ($p < .002$). Group sample was not significant largely because of the substantial differences in years of education between

Table 3. Multiple Regression Analysis for Sociodemographic and Health-Related Factors Associated With the Summary Score for Knowledge of AIDS Transmission (biomedical and casual modes)

	β	SE	<i>p</i> Value
Main effects			
Sociodemographic factors			
Age	0.01	0.01	0.30
Education	0.24	0.03	< 0.002
Years lived in United States	0.001	0.01	0.86
Married or lived as married	0.23	0.14	0.10
Health-related factors			
Insurance status	-0.10	0.11	0.38
Last visit to doctor	0.01	0.09	0.91
Group sample	-0.20	0.11	0.06
Interactions			
Age \times Years in United States	-0.001	0.0004	0.01
Education \times Last Visit to Doctor	0.06	0.02	< 0.01

the community and the labor camp samples (mean of 9 years versus 4 years, respectively).

The following two interaction terms from the model were statistically significant: Age \times Years Lived in the United States and Education \times Years Since Last Visit to a Doctor (see Table 3). The first interaction (Age \times Years Lived in the United States) showed that higher knowledge about the transmission of AIDS was associated with increasing years lived in the United States for the two youngest age groups (aged 18 to 29 and 30 to 39) but not for the oldest age group (aged 40 to 64), who had the lowest knowledge score regardless of the number of years lived in the United States (see Figure 1). The second interaction (Education \times Years Since Last Visit to a Doctor) showed that knowledge about AIDS transmission was highest and did not differ substantially for higher educated respondents (6 to 11 and more than 12 years of education) according to years since the last visit to a doctor. However, knowledge of AIDS transmission differed for lower educated respondents (0 to 5 years of education) who had lower knowledge scores if they had not visited a doctor within the past 2 years.

Discussion

Our results offer insight about AIDS-related knowledge among Latino women and men from community and labor camp samples who are largely

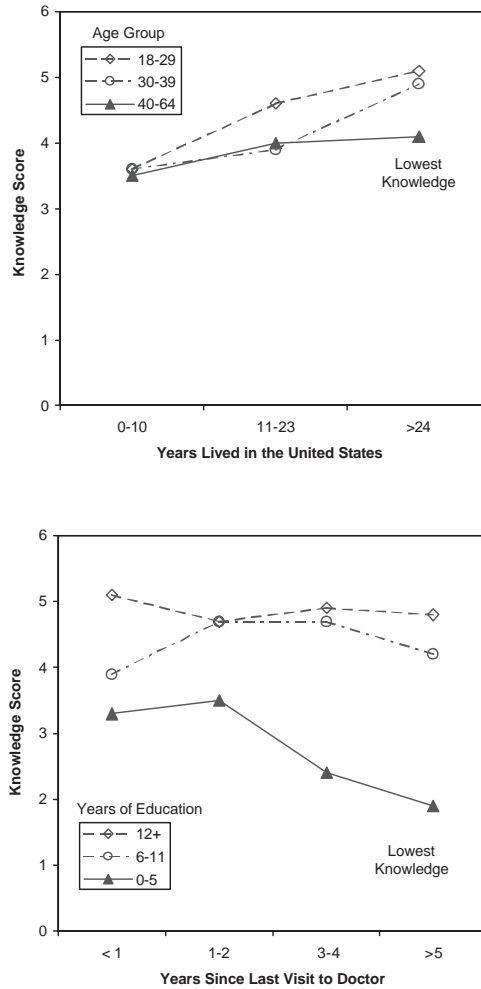


Figure 1. Significant interactions for knowledge of AIDS transmission: Age × Years Lived in the United States and Education × Years Since Last Visit to a Doctor.

similar in their cultural and social background. Whereas the women and men in our community sample were younger and had lower educational attainment than Mexican Americans in the United States (U.S. Census Bureau, 2000), the men in the labor camp sample appear to be representative of agricultural workers in California (Villarejo et al., 2000). We found that a high percentage of respondents were knowledgeable about the biomedical modes

of AIDS transmission; when including answers that were almost correct, almost 100% of respondents from each of the three groups knew that AIDS is caused by a virus and can be passed through unprotected sex or transmitted during pregnancy. These results are consistent with prior studies examining AIDS knowledge among Latinos from community (Marín & Marín, 1990) as well as labor camp samples (Balls Organista et al., 1998; Organista & Balls-Organista, 1997) but are surprising given the low educational attainment of our survey respondents (ninth-grade education for the community sample and fourth-grade education for the labor camp sample). In contrast with the high percentage of respondents who were knowledgeable about biomedical modes of transmission, there were many misconceptions about casual modes of transmission (such as feeling that AIDS could be contracted by working or by attending school with someone with AIDS), especially among the labor camp sample.

These results are comparable with past surveys that have shown that Latinos have misconceptions about the casual modes of AIDS transmission. One 1990 survey of 460 Latino women and men in San Francisco (aged 18 to 60, with 30% of Mexican origin) compared AIDS knowledge in high- and low-aculturated Latinos (acculturation status based on language preference) and found that 13% to 25% of high-aculturated Latinos and 30% to 57% of low-aculturated Latinos had misconceptions about the casual modes of AIDS transmission (Marín & Marín, 1990). Furthermore, those with low educational attainment were more likely to hold these misconceptions. A 1998 survey of 32 Mexican women from a labor camp sample (aged 20 to 48) found that 37% of the women inaccurately believed that AIDS could be contracted from using public toilets (Balls Organista et al., 1998). Collectively, the results from past surveys and our survey demonstrate that Latinos with lower levels of education and/or acculturation have more misconceptions about the casual modes of AIDS transmission than do their higher educated and/or higher acculturated counterparts. This may be explained in part by their shorter time in the United States and by Spanish being their primary language. An additional explanation is that AIDS education in Mexico has not yet reached the populations who reside in Mexico's rural areas. These populations tend to have less educational attainment and are more likely to migrate to the United States to work in agriculture. Thus, AIDS education for less educated Latinos in the United States who are from rural areas in Mexico is not only a U.S. concern but also a binational concern because of the interdependence of the American agricultural economy and the Mexican labor force.

Our study has a number of strengths. Our sampling method allowed for the inclusion of Latino subgroups that are often missed by AIDS knowledge

surveys. We administered surveys by phone and in person as well as in Spanish and English, which led to (a) participation of adults with unlisted telephone numbers (75% of the women and men in the community sample), (b) high participation rates (87% of the community sample and 98% of the labor camp sample), and (c) few missing data (range = 0% to 4%). Our sample also included relatively high numbers (461 women and 356 men in the community sample and 188 men in labor camp sample) that allowed for comparisons among three distinct subgroups.

Our study also has several limitations. First, despite efforts to include women in labor camps, we were unable to sample sufficient numbers to include in our analyses ($n = 13$). Most likely, this was a result of our sample of labor camps being largely populated by men. Several recent studies have focused on Mexican women in labor camps and have shown that although the majority of women are knowledgeable about the biomedical modes of AIDS transmission, one third to one half have inaccurate beliefs about the casual modes of AIDS transmission (see Organista & Balls Organista, 1997). A second limitation is that information collected from this survey was cross-sectional by design and therefore any predictive interpretations between socio-demographic and health-related factors and knowledge of AIDS transmission are not feasible. Longitudinal studies examining factors associated with AIDS knowledge over time would allow for such interpretations.

Implications

Our findings have implications for AIDS education programs in the Latino community. In particular, three groups were identified that have low AIDS knowledge and that will benefit from special outreach and education. The first group was composed of Latinos with low educational attainment who had many misperceptions about how AIDS can be transmitted, such as through casual contact with people (e.g., going to work or eating in a restaurant with someone who has AIDS). Our sample had very low educational attainment that most likely translates into low health literacy, both verbal and written, that is complicated by language barriers. Despite their low educational attainment, the large majority of men in the labor camp sample identified AIDS as a serious problem for Latinos in their community and correctly knew about the biomedical modes of AIDS transmission. Education programs should build on the concern that men in labor camps have about AIDS as well as their accurate beliefs about the biomedical modes of transmission. AIDS education programs for Mexican men with low educational attainment, whether they live in the community or in labor camp housing, is of particular priority given that they may contract AIDS in the United States and

then return home to Mexico and infect their wives or partners (Salgado de Snyder et al., 1996). AIDS information provided by Spanish radio or television in both the United States and Mexico may be an appropriate way to reach those with low literacy skills. In addition, AIDS telephone hotlines that have bilingual health educators and messages may be effective in increasing AIDS knowledge among Latino groups (Scott, Jorgensen, & Suarez, 1998).

A second group with low AIDS knowledge is Latinos with low educational attainment who had not seen their doctor or health care provider recently (see Figure 1). We found that Latinos with low educational attainment who had visited their doctor or health care provider within the past 2 years were more knowledgeable about the modes of AIDS transmission than those who had not. It is interesting that one study has shown that Latinos with low educational attainment view health information from health care providers as highly reliable (Essien, Ross, Linares, & Osemene, 2000). Although visits to doctors allow opportunities for health care providers to discuss AIDS with Latinos, we found that this potential avenue for health education is underused; about 60% of women in the community sample and 75% to 80% of men in the community and labor camp samples reported that their doctor or health care provider have never discussed AIDS with them. The frequency of these discussions needs to be increased and be tailored to patients' language and educational levels to improve accurate understanding of health information.

A third group with low AIDS knowledge was composed of the oldest Latinos in our sample (aged 40 to 64). In contrast with their young counterparts, older Latinos had low AIDS knowledge regardless of how long they had lived in the United States. Developing AIDS education programs for this group may be particularly important as older Latinos can be very influential in giving advice to younger family and community members. By raising knowledge about how AIDS is transmitted in this group, they can be a respected source of accurate information for younger family members and peers.

In summary, we recommend two approaches for AIDS educational programs for Latinos. First, community-wide strategies need to reach Latino youth and women and men of all ages because all are at risk and social norms need to be consistent at the population level. Second, tailored strategies need to be developed for Latinos who are at high risk and who have low knowledge. Both approaches need to use written and verbal information that is tailored to educational, literacy, language, and cultural needs. Furthermore, broader policy-level approaches that improve health care access and increase the number of health care providers who are from similar social and cultural backgrounds are needed to address the growing epidemic of AIDS among Latinos. Finally, although AIDS education in the United States can increase

knowledge of AIDS transmission, this disease is a binational concern, and health education programs need to reach men living in Mexico who come to the United States to work. Only with active partnerships among countries that are interrelated in our global economy will the AIDS epidemic in all subgroups in the United States be effectively addressed.

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