Published in final edited form as:
J Assoc Nurses AIDS Care. 2014 ; 25(4): 330–340. doi:10.1016/j.jana.2013.09.001.

Risky Sexual Behaviors: The Role of Ethnic Identity in HIV Risk in Migrant Workers

Nancy Shehadeh, PhD, CHES and **H. Virginia McCoy, PhD**
Nancy Shehadeh, PhD, CHES, is a postdoctoral fellow at the Department of Health Promotion and Disease Prevention, Robert Stempel College of Public Health and Social Work at Florida International University, Miami, Florida, USA. H. Virginia McCoy, PhD, is a Professor at the Department of Health Promotion and Disease Prevention, Robert Stempel College of Public Health and Social Work at Florida International University, Miami, Florida, USA.

Abstract

Migrant workers have been shown to be at a heightened level of risk for HIV, and ethnic identity has been posited to have an impact on engagement in risky sexual behaviors. Our longitudinal study examined associations between baseline and short term changes in ethnic identity and high-risk sexual behaviors. Baseline (N = 431) and 6-month assessment (n = 270) data were obtained from a larger HIV prevention study conducted among African American and Hispanic migrant workers. Repeated measures MANCOVA and multiple linear regressions were used. Ethnic identity explore, a subscale of ethnic identity, was a significant predictor of overall sexual risk (F[8, 422] = 6.953, p < .001) and unprotected vaginal acts (F[8, 422] = 8.444, p < .001) at baseline. However, ethnic identity had no bearing on changes in risky sexual behaviors. Ethnic identity explore was associated with safer sexual behaviors.

Keywords

ethnic identity; HIV risk behaviors; migrant workers; sex-related alcohol expectancy

Migrant workers are located in 42 of the 50 states in the United States and are primarily concentrated in Texas, Florida, Washington, California, Oregon, and North Carolina (Arcury & Quandt, 2007; Carroll, Samardick, Bernard, Gabbard, & Hernandez, 2005; Coppel, Dumont, & Visco, 2001). Migrant workers are one of the most rapidly growing populations in the United States. About 75% of all migrant workers are from Mexico (Carroll et al., 2005; Villarejo et al., 2010), and this population has been significantly affected by HIV infection (Coppel et al., 2001; Villarejo et al., 2010). Little formal education and low income

Corresponding author: Nancy Shehadeh, PhD nancyshehadeh@gmail.com.

Conflict of Interest Statement.
The authors report no real or perceived vested interests that relate to this article that could be construed as a conflict of interest.

status contribute to the challenges that migrant workers face, making them more susceptible to negative health outcomes and HIV infection (McCoy, Hlaing, Ergon-Rowe, Samuels, & Malow, 2009; Shehadeh et al., 2012)).

Migrant workers are at a heightened level of risk for HIV when they engage in a number of HIV risk behaviors, such as risky sexual behaviors and alcohol and substance use (Duke & Carpintiero, 2009; Fernandez et al., 2004; Weatherby et al., 1997). The prevalence of HIV infection is between 2.6% and 13% for migrant workers in the United States (Organista, Carrillo, & Ayala, 2004).

Social isolation is a major problem affecting migrant workers. Social isolation issues may be a result of language barriers and not knowing anyone in a new place of residence (Hirsch, Higgins, Bentley, & Nathanson, 2002; Muñoz-Laboy, Hirsch, & Quispe-Lazaro, 2009). Migrant workers often cope with social isolation by seeking comfort in sexual intimacy and engaging in unsafe sexual practices (Apostolopoulos et al., 2006; Arcury & Quandt, 2007; Organista et al., 2004). These risky sexual behaviors put migrant workers, as well as their families, at high risk for sexually transmitted infections, including HIV.

In terms of health, studies have posited that ethnic identity may be associated with positive health behaviors such as healthy lifestyle practices (Brook & Pahl, 2005; Stevens-Watkins, Perry, Harp, & Oser, 2012). Such healthy lifestyle practices include low consumption of alcohol, no/low substance use, and practicing HIV prevention behaviors (Brook, Whiteman, Balka, Win, & Gursen, 1998; Nesdale, Rooney, & Smith, 1997). Ethnic identity, as defined by Phinney, DuPont, Espinosa, Revill, and Sanders (1994), is “a feeling of belonging to one's group, a clear understanding of the meaning of one's membership, positive attitudes toward the group, familiarity with its history and culture, and involvement in its practices” (p.169). Ethnic identity is connected with the language, behaviors, norms, and knowledge of one's background or ethnicity (Persky & Birman, 2005; Salgado de Snyder, Díaz Pérez, & Maldonado, 2006). Phinney (1992) further defined the components of ethnic identity as ethnic identity exploration and ethnic identity belonging. Ethnic identity belonging reflects ethnic pride, positive feelings toward one's ethnic group, and satisfaction with being a member of one's ethnic group, while ethnic identity “explore” measures the extent to which an individual searches for a sense of meaning in his/her ethnicity (Phinney, 1992).

Although the literature on the relationship between ethnic identity and risky sexual behaviors is sparse, several studies have been conducted among differing ethnic groups. Some of the studies presented a theory of ethnic identity as being a safeguard against practicing risky sexual and substance use behaviors. For example, a study conducted with African American heterosexual females demonstrated differences in risky sexual acts in the previous 4 months depending on the level of ethnic identity: Those with higher levels of ethnic identity had lower levels of risky sexual behaviors compared those with lower ethnic identity levels (Beadnell et al., 2003). A decline in identifying with one's ethnic group, which has been found among those who have been in the United States for long periods of time, has been linked to higher levels of depressive symptoms as well as lower self-esteem, as was found in a study by Umana-Taylor and Updegraff (2007) on Latino adolescents.

The limited literature has suggested that ethnic identity changes over time, depending on the stage of development an individual was in at the time and the life changing circumstances they may have experienced (Phinney, 1992, 2003). The only research that addressed ethnic identity change in adulthood was a study by Torres et al. (2012). The findings of that study suggested that ethnic identity did change, and that it might change in adulthood when experiencing life changing or stressful circumstances.

Our study focused on exploring three critical relationships: (a) does a relationship exist between ethnic identity belonging and/or ethnic identity explore with risky sexual behaviors (sexual risk and the number of vaginal sex acts without a condom), and (b) does ethnic identity change over a 6-month time period, and, if so, (c) are changes in ethnic identity belonging and ethnic identity explore associated with changes in risky sexual behaviors over the 6-month period?

Methods

Sample

South Florida is an area that has been severely affected by the HIV epidemic, with elevated risks being detected in the migrant worker community (Fernandez et al., 2004). Data were obtained from a larger HIV risk reduction intervention study conducted in the South Florida agricultural area of Immokalee in Collier County, Florida. The parent study was approved by the institutional review board of Florida International University. The parent study was implemented from 2005 through 2010. The focus of the parent study was to explore the effectiveness of two HIV risk reduction intervention approaches (McCoy et al., 2009; Shehadeh et al., 2012). A targeted sampling method was used to recruit migrant workers in the study. Migrant workers who were 18 years of age or older, had engaged in at least one unprotected sexual encounter in the previous 90 days, and had consumed alcohol or other drugs in the previous 90 days were included in the study. Participants needed to speak English or Spanish.

We used baseline (N = 431) and 6-month follow-up (n = 270) data in our study, and our definition of migrant workers conformed to the Public Health Services Act of 1944 (Rosen, 1993) definition with two exceptions. Our study criteria included migrant workers who commuted at least 75 miles or across county lines to work. We also included migrant workers who were employed in jobs that weren't directly related to farm work, such as in packinghouses. Seasonal workers were those migrant workers who moved from one place to another based on the picking season for crops.

The participants included in this study were recruited from camps. In the community, camps referred to trailer parks, dormitory-style housing, apartment buildings, motels, duplexes, and neighborhoods of single/duplex housing in the immediate and surrounding areas. In the setting described above, potential participants were approached and asked a few questions to see if they met the eligibility criteria of the HIV prevention intervention project.

Measures

Dependent variables—The dependent variables were self-reported and collected through the HIV/AIDS Risk Reduction Questionnaire (HRRQ), composed of 204 questions utilized in the parent study. We retrieved dependent variable information from the sex behavior section of the questionnaire. The dependent variables labeled as HIV risk behaviors were examined and included in the regression models: Vaginal Episode Equivalent (VEE; defined below), VEE change (change in sexual risk), number of vaginal sex acts without a condom, and number of vaginal sex acts without a condom change (changes in the number of unprotected vaginal sex acts). Change variables were created for each dependent variable to examine the impact of any changes (changes in scores or frequency of sexual behaviors) over the 6-month time period. The change variables were created by computing a new variable that calculated the difference between 6 months and baseline for the frequency of the behavior or score of the scales reported.

VEE allowed the risk associated with oral, vaginal, and anal sex acts to be equated with one unprotected vaginal sex act (Susser, Desvarieux, & Wittkowski, 1998). This index is advantageous because it provides a score that reflects overall risky sexual behavior. Higher VEE scores represent higher sexual risk-taking behaviors. The formula for measuring VEE is: “(number of unprotected vaginal sex acts) + (2 × number of unprotected anal sex acts) + (0.01 × number of unprotected oral sex acts)” (Susser et al., 1998; p. 671). Vaginal acts without a condom are the total number of episodes of vaginal intercourse a participant had in the previous 30 days without the use of a condom.

Independent variables—The independent variables for our study included demographic variables and ethnic identity subscales. The demographic variables included were age, gender, education, country of birth, length of stay in Immokalee, and ethnicity. All demographic information was based on participants’ self-reported data. Age was calculated by subtracting the date of the interview by the participant's birth date.

The tool utilized to measure participants’ levels of ethnic identity was the Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992). The MEIM instrument is composed of 12 items that measure the participants’ levels of belonging and identification with their ethnic groups. The questionnaire explores three elements of ethnic identity: (a) level of identification with one's group, (b) ethnic identity pride, and (c) ethnic behaviors and practices. The items were divided into two subscales, which were used in this study: ethnic identity explore and ethnic identity belonging. Ethnic identity belonging was composed of seven items from the MEIM scale and examined the extent to which an individual felt a sense of positive belonging to his/her ethnic group. Ethnic identity explore was the aspect of the MEIM scale that measured the degree to which an individual explored or took an active role to become better acquainted with and learn about his/her ethnic group. Ethnic identity explore consisted of five items from the MEIM scale. Dichotomous variables were created for ethnic identity belonging and ethnic identity explore at baseline and for change by splitting the continuous variable into two groups: low and high or no/negative change and positive change. The four dichotomous variables were used to analyze differences with demographic characteristics of the sample.

Because the two subscales measured different theoretical concepts, it is possible that they each may have had different associations with risk variables. For this reason, the subscales were entered in a separate block for each multiple regression equation. The change variable for the ethnic identity scales calculated the difference between mean score for baseline assessment and that of the 6-month assessment. A mean score was calculated to examine the ethnic identity level of each participant. Participants with a high level of ethnic identity had a high MEIM mean score. The higher the ethnic identity of a participant, the higher the level of attachment and the more comfortable the participant felt with his/her ethnic group and ethnic culture. Cronbach's alpha for MEIM measure was 0.85.

Statistical Analysis

The data were analyzed using bivariate correlations, multiple regressions, and Repeated Measures MANCOVA (RMANCOVA). Changes in scores for ethnic identity subscales were included in each linear regression model that assessed changes in risky sexual behaviors. The total score for MEIM was utilized for the RMANCOVA. All variables were assessed to determine if they met assumptions for linear regressions. A $\log_{10}$ transformation was performed on the variables in order to retain maximum power and to ensure that none of the assumptions for linear regression models were violated. The outcome variable that had a $\log_{10}$ transformation was the change score for vaginal acts without a condom.

Demographic variables included in the models were age, gender, education, country of birth, length of stay in Immokalee, and ethnicity (see Table 1). Intervention assignment was also included as a control variable in the model. The criteria for including demographic variables in the multivariate analyses depended on whether they showed a correlation approaching significance ($p < .10$) with the dependent variables.

Chi-square and independent *t*-tests were executed to assess participants' high or low ethnic identity belonging or ethnic identity explore scores at baseline with sexual risk. Similar tests were conducted to assess participants with increases in ethnic identity belonging and ethnic identity explore and participants with no change/negative changes in ethnic identity belonging and ethnic identity explore for any differences in sexual behaviors.

Missing data were minimal in the data set among those who were followed, not exceeding a range of 0-2%. A mean replacement method was used for missing values.

One hundred sixty-one participants from the original data set were not included in the analyses that examined changes in ethnic identity and risky sexual behaviors because they did not have 6-month follow-up data. Table 2 displays baseline information on those lost to follow-up, followed participants, and baseline participants.

We used the migrant worker sample at two time points, baseline ($N = 431$) and 6-month follow-up ($n = 270$). The post-hoc power analysis was conducted with G*Power 3 (Faul, Erdfelder, Lang, & Buchner, 2007) for both time periods yielding power estimates ranging between .955 and .999. This level of power provided enough strength to assume that the number of participants was sufficient for the analyses conducted in this study.

All data analyses were conducted using the IBM SPSS Program 19.0 for Windows (SPSS Inc., Chicago, IL, USA). Independent variables were assessed through the use of means, frequencies, standard deviations, and chi-square analyses. Multiple linear regressions were conducted to assess relationships between ethnic identity changes subscales and change in HIV risk behaviors. RMANCOVA was executed to examine short-term change in ethnic identity total, ethnic identity belonging, and ethnic identity explore over the 6-month time period. The assignment to intervention groups was included as a covariate in the regression models executed in this study in order to reduce the likelihood of confounding the results (McCoy et al., 2009). Before the final analysis was executed, mutlicollinearity between variables was examined to enhance validity of the results in each model presented. Work status (seasonal or not) was omitted from the final regression model due to high correlation with race, language, and country of birth.

Results

Demographics

The mean age of the baseline sample (N = 431) was 41.56 years (SD = 12.39). Hispanics (M = 38.79, SD = 11.65) were significantly younger than African Americans (M = 46.22, SD = 12.24; t = 6.29, $p < .001$) in the sample. The overall education level was generally low in both ethnic groups. The mean level of educational achievement for the full sample was 8.45 (SD = 3.39); however, Hispanics (M = 7.30; SD = 3.25) were found to have a significantly lower education level than African Americans (M = 10.39, SD = 2.66; t = 10.20, $p < .001$). Females accounted for 27.6% (n = 119); 30.2% of the sample were born outside of the United States. Sixty-one percent (n = 78) of the African Americans were single, 42% of the African Americans were female, and all of the African Americans were born in the United States and spoke English. Hispanic females accounted for 25% of the Hispanics in the sample, and 54% of Hispanics were married.

Those participants who were lost to follow-up displayed the riskiest behaviors (highest levels of crack use, alcohol use, and the highest percentage of participants with a previous STI diagnosis), the lowest level of education (M = 7.37, SD = 3.57; t = −5.108, $p < .001$), and were much younger (M = 39.86, SD = 11.48; t = −2.97, p = .027) than baseline and 6-month follow-up samples. Table 1 illustrates the demographic characteristics for baseline, 6-month follow-up, and those participants lost to follow-up. No statistically significant differences were found between African Americans and Hispanic migrant workers in relation to risky sexual behaviors at baseline or 6-month follow-up.

Ethnic Identity and Overall Sexual Risk

At baseline (N = 431), males had significantly lower scores in ethnic identity explore than females (χ^2 = 3.98, p = .029). Those participants who had resided in Immokalee for more than 5 years had significantly lower scores in ethnic identity explore than participants who had relocated there more recently (χ^2 = 6.87, p = .006). Regarding ethnic identity belonging, participants who spoke English had significantly lower scores in ethnic identity belonging than Spanish speaking participants (χ^2 = 3.57, p = .038). At baseline, participants with lower scores in ethnic identity explore had a significantly higher overall sexual risk (t =

3.24, $p = .001$), a higher number of vaginal acts without a condom ($t = 3.46$, $p = .001$), and a higher consumption of alcohol in the previous month ($t = 3.14$, $p = .002$).

HIV Risk

The means computed for baseline ($N = 431$) risky behaviors were as follows: 3.36 vaginal sex without a condom in the previous 30 days ($SD = 6.967$), 2.14 sexual partners in the previous 30 days ($SD = 4.316$), and .76 (approximately 1) unprotected partner in the previous 30 days ($SD = 1.703$). Alcoholic drinks consumed in the previous month by migrant workers in the sample were 103.77 ($SD = 138.32$). When comparing participants by race/ethnicity, Hispanics ($M = 8.5995$, $SD = 8.11715$) were found to have a statistically significant higher level of sexual risk than their African American counterparts ($M = 5.3552$, $SD = 15.62187$) as measured by the VEE index ($t = -2.107$, $p = .036$). Hispanics were found to have a statistically significant higher number of sexual partners in the previous 30 days than African Americans (Hispanics: $M = 2.68$, $SD = 5.086$; African Americans: $M = 1.55$, $SD = 3.17$; $t = -2.175$, $p = .031$) at baseline.

Ethnic Identity and HIV Sexual Risk Behaviors

Multiple linear regressions were conducted to examine the relationships between ethnic identity belonging/ethnic identity explore and HIV sexual risk variables at baseline. Multiple linear regressions were then executed for changes in ethnic identity explore/ethnic identity belonging with changes in risky sexual behavior variables. Demographic variables and ethnic identity subscales were divided and entered into two blocks in the reported regression to assess if a relationship existed between demographic variables and risky sexual behaviors. Ethnic identity subscales were added to the model to examine how ethnic identity might have influenced any relationships with risky sexual behaviors.

Multiple regression for VEE revealed that the final model significantly predicted VEE, F (8, 422) = 6.953, $p < .001$. R^2 for the model was .116. The adjusted R^2 was .100. Table 3 displays the unstandardized regression coefficients (B), standard error, and standardized regression coefficients (B) for ethnic identity explore and the adjusted R^2 for the model with only demographic variables and the final model with the ethnic identity explore and ethnic identity belonging. The variables in the first block contributed significantly to the prediction of level of sexual risk, $R^2 = .067$, Adjusted $R^2 = .053$, F (6, 424) = 5.048, $p < .001$. Statistically significant predictors of VEE in the final model were ethnic identity explore ($\beta = -.183$, $t = -3.223$, $p < .001$), gender ($\beta = .153$, $t = 2.813$, $p = .005$), and marital status ($\beta = .166$, $t = 3.483$, $p < .001$). Participants with a lower level of ethnic identity, male participants, and those who were married were more likely to have a higher level of sexual risk, as measured by VEE.

The multiple linear regression analyzing the number of vaginal acts without a condom was found to be statistically significant in both blocks, final block: F (8, 422) = 8.444, $p < .001$. The model had an R^2 of .138, and the adjusted R^2 was *.122*. The unstandardized regression coefficients (B), standard error, and standardized regression coefficients (B) for the subscales of ethnic identity, ethnic identity explore and ethnic identity belonging, and the demographic variables for both blocks of the regression model are displayed in Table 3.

Ethnic identity explore was one of the statistically significant predictors of vaginal acts without a condom (β = −.186, t = −3.304, p = .001), and an inverse relationship was found between ethnic identity explore and the number of vaginal acts without a condom. Gender (β = .173, t = 3.232, p =.001) and marital status (β = −.172, t = 3.634, p < .001) were also statistically significant predictors in both blocks of the regression. Female migrant workers, married participants, and those with lower levels of ethnic identity were more likely to have a higher number of vaginal acts without a condom than their representative counterparts.

No statistically significant relationships were found between changes in ethnic identity belonging and/or ethnic identity explore and changes in all four risky sexual behaviors analyzed. These regressions suggested that changes in ethnic identity belonging and ethnic identity explore had no positive or negative impact on changes of the risky sexual behaviors.

Changes in Ethnic Identity

Regarding changes over the 6-month follow-up period in ethnic identity, participants with an increase in ethnic identity belonging and ethnic identity explore and participants with no change/negative changes in their ethnic identity belonging and ethnic identity explore were assessed for any differences in sexual behaviors. Table 2 describes positive and negative/no changes in ethnic identity by demographic variables in the migrant worker sample.

An RMANCOVA was conducted to assess if any short-term changes in ethnic identity as a total measure, ethnic identity explore, and ethnic identity belonging actually took place over the 6-month follow-up period. The total measure of ethnic identity, ethnic identity explore, and ethnic identity belonging significantly changed over the 6-month assessment period (Table 4). After controlling for intervention assignment, language, marital status, education, gender, country of origin, and length of stay, the time effect for ethnic identity total and ethnic identity belonging was not significant (F(1, 262) = 2.45, p = .119) and F(1, 262) = .826, p = .364) respectively. However, the time effect for ethnic identity explore was found to be statistically significant after controlling for covariates, (F (1,262) = 4.02, p =.046), but the variance explained was very small. The changes in all three analyses were small but were found to be statistically significant.

Discussion

Ethnic Identity: Risky Sexual Behaviors

Ethnic identity explore was associated with the sexual behaviors assessed, overall sexual risk (the weighted vaginal, anal, and oral sex index), and vaginal acts without a condom in the previous 30 days at baseline (Table 3). Ethnic identity belonging was not found to have an association with overall sexual risk or vaginal acts without a condom. Ethnic identity explore was found to have an inverse relationship with vaginal acts without a condom and overall sexual risk, suggesting that participants with a higher ethnic identity explore had a lower number of vaginal acts without a condom and a lower level of overall sexual risk than participants with lower ethnic identity explore scores. Both behaviors, relating to sexual acts without the use of a condom, vastly increased risk for HIV infection and other STIs, reported by the Centers for Disease Control and Prevention (2010).

Higher levels of ethnic identity explore may help reduce risky sexual behaviors, as suggested by Espinosa-Hernandez and Lefkowitz (2009) regarding the ethnic identity belonging component of the ethnic identity scale. Espinosa-Hernández, and Lefkowitz (2009) study found that ethnic identity belonging was a protective element against risky attitudes toward sexual behaviors among African Americans, Hispanics, and European Americans (Espinosa-Hernandez & Lefkowitz, 2009). Our study lacked significant findings regarding the ethnic identity belonging component and risky sexual behaviors, which may be a reflection of the type of population assessed in our study. Migrant workers face many obstacles and hardships that other ethnic and racial groups found in the United States do not experience, which may contribute to our outcomes. Similar findings have suggested that higher levels of ethnic identity take on a protective role or a buffer effect, enhancing positive outcomes, when associated with areas such as academic achievement (Kerpelman, Eryigit, & Stephens, 2008; Schwartz, Zamboanga, & Jarvis, 2007), higher level of quality of life (Utsey, Chae, Brown, & Kelly, 2002), and a reduced level of mental stress and an increase of positive well-being (Iwamoto & Liu, 2010; Utsey et al., 2002).

Limitations

This study included several limitations, one of which was the brief time period assessed. Only minor changes were likely during such a short period of time. When proposing this study, we were unaware of what changes would happen over this short time period. We anticipated that these changes could be measured because of the level of stress migrant workers experienced on a daily basis; however, it is likely that changes would be greater over a longer period of time. We encourage future studies to explore ethnic identity change and HIV risk behaviors over a longer time period, preferably 12 months. Another limitation of this study was the bias associated with self-report. It is possible that in this high-risk group of migrant workers, there may have been an enhanced likelihood of inaccurate reporting, possibly among those participants with higher levels of ethnic identity. Those with higher levels of ethnic identity may have reported more protective behaviors or, possibly, the opposite may have occurred with the machismo stereotype found among Hispanic males. A minimal difference was found in ethnic identity from baseline to 6-month follow-up period; such a minimal difference can be a result of error. Another limitation to this study is how the 161 participants lost to follow-up were clearly a riskier group than the participants followed in the 6-month follow-up sample. The results regarding change may be limited to people with less risky behavior.

Future Directions

In order to attain a clearer understanding of the mechanism of how ethnic identity may influence risky sexual behaviors, especially in this marginalized population, further studies must be implemented. Future studies must include a longer time period to see how changes might affect this relationship (preferably 24 months) and emphasize examining sexual behaviors without the use of a condom.

Migrant workers are an extremely vulnerable sector of the population that tends to be overlooked due to low socioeconomic status as well as illegal immigration status. There have been slight improvements in the attention placed on this vulnerable group in the past

decade in relation to health, but additional work is needed to reduce HIV risk. Future research should explore the mechanisms of how ethnic identity affects HIV risk because taking advantage of such information could assist in fine tuning prevention programs. Initiatives should be implemented that help low-income, vulnerable groups identify practical means to cope with ongoing challenges and to maintain a healthier lifestyle.

Acknowledgments

Funding agency: NIAAA- grant number: RO1AA015810

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Key Considerations

- Individuals who take initiative to explore their cultural backgrounds, also known as having a higher level of ethnic "identity explore," have been found to engage in less risky sexual behaviors and overall sexual risk. Those with higher sexual risk were more likely to have less attachment to their ethnic groups, which may be helpful to know when working with sexually active migrant workers from Hispanic and African American ethnicities.
- Male migrant workers with a lower level of attachment to their ethnic groups were more likely to have a higher level of sexual risk taking behaviors, which ultimately increased their HIV risks.
- Female migrant workers, married migrant workers, and migrant workers with lower levels of attachment to their ethnic groups were more likely to have a higher number of vaginal-sex acts without a condom, increasing the risk of STIs and HIV.

Table 1

Demographic Characteristics of Participants at Baseline (N = *431), 6-Month Follow-Up (*n = *270), andLost-to-Follow-Up* (n = *161)*

Measure	Baseline	6-month Follow-up or Followed	Lost-to-Follow-Up or Not Followed	*p*-value
Age (*M* ± *SD*)	41.56 ± 12.39	42.58 ± 12.82	39.86 ± 11.48	.022
Education (*M* ± *SD*)	8.45 ± 3.39	9.19 ± 3.10	7.37 ± 3.57	.0001
Gender *n* (%)				
Female	119 (27.6%)	90 (33%)	30 (19%)	
Male	312 (72.4%)	180 (67%)	131 (81%)	
Marital Status *n* (%)				.176
Single	350 (81.2%)	155 (57%)	83 (57%)	
Married	81 (18.8%)	115 (43%)	78 (43%)	
Ethnicity *n* (%)				.001
Hispanic	270 (62.6%)	142 (52%)	129 (80%)	
African American	161 (37.4%)	128 (48%)	32 (20%)	
Prior STI Diagnosis *n* (%)	102 (23.7%)	27 (17%)	75 (28%)	.009
Number of UVA (*M* ± *SD*)	3.26 ± 10.15	2.14 ± 4.32	4.06 ± 17.43	.554
Number of AC (*M* ± *SD*)	103.77 ± 138.32	54.42 ± 71.83	101.09 ± 140.44	.137
Marijuana Use (*M* ± *SD*)	9.27 ± 18.94	6.60 ± 15.91	10.72 ± 31.98	.122
Crack Use (*M* ± *SD*)	15.61 ± 34.24	4.01 ± 23.34	27.55 ± 85.91	.001

Note: STI = Sexually Transmitted Infection; SP = Sexual Partners; UVA= Unprotected Vaginal Acts; AC = Alcohol Consumption. All sexual acts and consumption of alcohol and illegal substances refer to the previous 30 days.

Table 2

Differences in Ethnic Identity Explore and Ethnic Identity Belonging by Demographics and Sexual Risk (N = *431; 6 months:* n = *270)*

Demographics	High EI explore Baseline	Low EI explore Baseline	High EI belonging Baseline	Low EI belonging Baseline	Positive EI explore Δ at 6 months	No/negative EI explore Δ at 6 months	Positive EI belonging Δ at 6 months	No/negative EI belonging Δ at 6 months
Age (*M*±*SD*)	42.81±12.33	40.55±12.37	43.13±12.83	40.83±12.13	41.43±12.58	43.49±12.89	42.65±12.35	42.33 ± 13.28
Education (*M* ± *SD*)	8.29 ±3.54	8.58±3.26	8.34 ±3.27	8.51 ±3.44	8.82 ± 3.27	9.53 ± 2.91	8.99 ± 3.15	9.43 ± 3.04
Marital status *n*, %								
Single	152, 56.6%	198,43.4%	113,32.3%	237,67.7%	84, 54.2%	71, 45.8%	76, 49.0%	79, 51.0%
Married	41, 50.6%	40, 49.4%	24, 29.6%	57, 70.4%	46, 40%	69, 60%	57, 49.6%	58, 50.4%
Language *n*, %								
English	115,43.1%	152,56.9%	76, 28.5%	191, 71.5%	85, 42.9%	113, 57.1%	88, 44.4%	110, 55.6%
Spanish	78, 47.6%	86, 52.4%	61, 37.1%	103,62.9%	45, 62.5%	27, 37.5%	45, 62.5%	27, 37.5%
Gender *n*, %								
Male	149, 47.8%	163, 52.2%	105, 33.7%	207,66.3%	95, 52.8%	85, 47.2%	96, 53.3%	84, 46.7%
Female	44, 37.0%	75, 63.0%	32, 26.9%	87, 73.1%	35, 38.9%	55, 61.1%	37, 41.1%	53, 58.9%
Ethnicity *n*, %								
Hispanic	124,46.%	146,54.0%	88, 32.6%	182,67.4%	75, 52.8%	67, 47.2%	74, 52.1%	68, 47.9%
African American	69, 42.9%	92, 57.1%	49, 30.4%	112, 69.6%	55, 42.9%	73, 57.1%	59, 46.1%	69, 53.8%
VEE (*M* ± *SD*)	3.39 ± 5.36	5.77 ± 8.57	3.27 ± 5.47	4.57 ± 7.33	2.61 ± 9.62	1.98 ± 11.84	2.14 ± 9.34	2.46 ± 12.38

Note: VEE=Vaginal Episode Equivalent (Sexual Risk); EI = ethnic identity; Δ = change. Ethnic identity explore was divided into a dichotomous dummy variable based on the mean.

Table 3

Regression Analysis Summary for Ethnic Identity Predicting Risky Sexual Behaviors at Baseline (N =*431)*

Outcome Variable	Independent Variables	Block 1				Block 2			
		R^2	*B*	*SE*	*β*	R^2	*B*	*SE*	*β*
Vaginal Episode Equivalent (Sexual Risk)		.067				.116			
	Language		−.124	.093	−.134		−.121	.092	−.130
	Gender		.164	.056	.162*		.154	.055	.153*
	Education		.007	.008	.054		.009	.008	.067
	Age		−.001	.002	−.024		.000	.002	−.010
	Country of Birth		−.068	.095	−.074		−.089	.093	−.096
	Marital Status		.174	.056	.150*		.192	.055	.166*
	EI Explore						−.189	.059	−.183*
	EI Belonging						−.067	.061	−.063
Unprotected Vaginal Acts		.080				.138			
	Language		−.087	.090	−.097		−.081	.087	−.090
	Gender		.178	.054	.183*		.169	.052	.173*
	Education		.007	.008	.057		.009	.008	.073
	Age		−.001	.002	−.029		.000	.002	−.013
	Country of Birth		−.021	.091	−.023		−.042	.089	−.047
	Marital Status		.173	.054	.155*		.191	.053	.172*
	EI Explore						−.185	.056	−.186*
	EI Belonging						−.086	.058	−.084

Note: EI = ethnic identity. All sexual acts refer to the previous 30 days.

* $p \leq 0.05$

Table 4

Repeated Measures Analysis of Covariance: Mean Scores and Standard Deviations for Ethnic Identity and Subscales at Baseline (N = 431*) and 6 Months (*n = *270)*

		Baseline	6 Months	*F* time effect only	*F* covariates included
Ethnic Identity Total				12.340*	2.447
	M	2.8639	2.9784		
	SD	.37697	.40347		
Ethnic Identity Belonging				14.075*	.826
	M	3.0476	3.1937		
	SD	.42224	.50141		
Ethnic Identity Explore				3.752*	4.019*
	M	2.6067	2.6770		
	SD	.43125	.45788		

Note: Covariates: language, marital status, country of birth, ethnicity, gender, intervention, length of stay.

* $p \leq 0.05$