

## ***HIV/AIDS Risk Behavior of Mexican Women Working in a Maquiladora***

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### **Compendio**

El objetivo de este estudio era explorar el comportamiento de riesgo de VIH/SIDA en 101 mujeres trabajadoras en una maquiladora en Mexicali, Baja California. Las participantes llenaron donde se les preguntó sobre el uso de drogas, agujas, y alcohol; comportamiento de riesgo sexual; y información demográfica. El uso de drogas casi no se observó, pero está presente el uso de alcohol. Se encontró que era más probable que solteras y mujeres que habían participado en sexo vaginal hubieran ingerido alcohol durante los seis meses anteriores. El uso más común de agujas era para inyectar vitaminas o medicamentos legales; ninguna participante compartió agujas o limpió una aguja para usarla otra vez. La actividad sexual más frecuente fue el sexo vaginal, pero el uso de condones fue bajo. Se encontró que teniendo sexo con un hombre que tiene otras parejas femeninas sexuales y teniendo sexo con una pareja que estaba bajo la influencia de alcohol estaba relacionada significativamente con el uso de condones durante sexo vaginal. Mujeres que tenían sexo con ambos mujeres y hombres reportaban el número más alto de parejas masculinas.

*Palabras clave:* VIH; Síndrome de Inmunodeficiencia; conducta de riesgo; prevención del SIDA.

### **Conducta Riesgo al VIH/SIDA de Mujeres Mexicanas Trabajando en una Maquiladora**

#### **Abstract**

The objective of this study was to explore the HIV-related risk behavior and knowledge of 101 women maquiladora workers in Mexicali, Baja California. Participants filled out a questionnaire asking about use of drugs, needles, and alcohol; sexual risk behavior; and demographic information. Drug use was nearly nonexistent, but alcohol use was present. Single women and those who engaged in vaginal sex were significantly more likely to use alcohol in the past six months. The most common use of needles was to inject vitamins and legal medications; no participants shared needles or cleaned a needle to use it again. Vaginal intercourse was the most frequent sexual activity, but condom use was low. Having sex with a man who has other female partners and who was under the influence of alcohol were significantly related to condom use during vaginal sex. Women who indicated they had sex with both women and men reported the highest number of male sex partners.

*Keywords:* HIV; Acquired Immune Deficiency Syndrome; risk behavior; AIDS prevention.

The first case of a woman diagnosed with AIDS in Mexico occurred in 1985 (del Río-Zolezzi et al. 1995). Since that time the number of women living with HIV/AIDS in Mexico has increased and they now make up 14.3% of the total estimated AIDS cases in Mexico (Magis-Rodríguez, Bravo-García, & Rivera Reyes, 2000). Just as in the U.S., heterosexual contact is the leading exposure category for HIV/AIDS among women in Mexico; unlike the U.S., exposure to HIV/AIDS through injection drug use is less than 1% among both women and men (UNAIDS/WHO Working Group on Global HIV/AIDS and STI Surveillance, 2002).

Outside of studies of women sex workers in Mexico, who show low rates of HIV/AIDS (Bellis, 2001; Hernández-Girón et al. 1997; Uribe-Salas et al. 1997; Uribe-Salas, Conde-Glez, Juárez-Figueroa, & Hernández-Castellanos, 2003; Valdespino Gómez et al. 1995), relatively few studies of the risk behavior and prevention needs of women in Mexico are available. This is particularly the case for women who work in maquiladoras, the foreign-owned assembly plants

that have proliferated in the last 10-15 years in the northern Mexican states adjacent to the U.S.-Mexico border.

Women constitute approximately two-thirds of all employees in the maquiladora industry (California Center for Border and Regional Economic Studies Bulletin Selected Indicators, 2001, May). Women working in maquiladoras tend to be young, single, and either childless or single parents, although the number of older and married women has been increasing (Guendelman & Silberg 1993; La Botz, 1994; Tiano, 1994; von Glasco, Vázquez, González Block, & Guendelman, 1998). Despite being higher than the minimum daily wage in Mexico (currently at approximately \$4.50 per day in Baja California), the wages of women working in maquiladoras remain lower than those of women employed in the service sector (Guendelman & Silberg, 1993) and they tend to be paid less than men working in maquiladoras (Moure-Eraso, Wilcox, Punnett, MacDonald, & Levenstein, 1997). Moreover, most maquiladora women live in poor communities with inadequate water, sewage systems, and electricity (La Botz, 1994).

Some studies indicate that maquiladora workers do not show greater health problems than women who work in the service sector or are non-wage earners (Guendelman & Silberg, 1993; Hovell et al. 1988). Other studies have found that women maquiladora workers are subject to workplace health hazards

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<sup>2</sup> This research was undertaken while the first author was supported by a Fulbright Scholar Award.

such as exposure to chemicals, ergonomic risks, noise, and work-related stress (Cedillo Becerril, Harlow, Sánchez, & Sánchez Monroy, 1997; La Botz, 1994; Moure-Eraso et al. 1997); suffer greater musculoskeletal complaints (Harlow, Becerril, Scholten, Sánchez Monroy, & Sánchez, 1999; Moure-Eraso et al. 1997); and may not receive adequate safety training or personal protection equipment (Takaro, Gonzalez Arroyo, Brown, Brumis, & Knight, 1999). In addition, at least one study of reproductive outcomes suggests that maquiladora women workers in both the electronics and garment industries are more likely to have lower birthweight babies than women service workers (Eskenazi, Guendelman, Elkin, & Jasis, 1994). Finally, women working in maquiladoras have been subject to sexual harassment and sex discrimination on the job, with little protection from the Mexican government or from international factory owners, and little power or resources to alter this situation (Human Rights Watch 1999; Nathan, 1999).

To date, almost no studies have examined the HIV risk of women who work in maquiladoras even though their younger ages, low income and education levels, and exposure to both work-related health hazards and sexual harassment may directly or indirectly place them at higher risk. The purpose of this study is to add to existing research on risk factors associated with HIV/AIDS among Mexican women, focusing on women working in maquiladoras. Specifically, we explored women's risk due to their sexual behavior, and drug, needle, and alcohol use. We also examined their HIV test history and status. Because so little research is available on HIV risk behavior of women working in maquiladoras, exploratory analyses were performed to uncover the predictors of women's alcohol use and condom use behavior.

### Method

#### Participants

The convenience sample of 101 women was recruited from a power tool assembly plant in Mexicali, Baja California that employed approximately 1500 persons; of these approximately 600 were women. The average age of participants was 29.62 years ( $SD = 7.46$ ) and ranged from 18 to 49. Median educational level was completion of the U.S. equivalent of ninth grade. The median income range was approximately \$159-\$212 U.S. dollars per month. Forty-one (40.6%) women were married; of the 60 not married, 31 (51.6%) had a current close relationship partner. All close relationship partners of unmarried women were men. The average length of marriage was 6.9 years ( $SD = 6.96$ ) and ranged from one month to 25 years. The average length of nonmarital relationships was 1.76 years ( $SD = 2.07$ ) and ranged from one month to eight years.

#### Materials

The 10-page Spanish-language questionnaire used in this study was based on an English-language questionnaire used previously to assess HIV prevention needs among Latinas/os and nonLatinas/os in a U.S.-Mexico border community in

California (Castañeda, 1999). In particular, the sexual behavior, drug, needle, and alcohol use behavior items from the previous study were used here. The questionnaire was translated into Spanish and back-translated using techniques detailed in Marin and VanOss Marin (1991) to assure equivalency of item meanings. The final Spanish version of the questionnaire was reviewed for understandability by three women who lived and worked in Mexicali and who spoke Spanish only. Based on their input, small revisions were made in the questionnaire. The questionnaire contained 50 close-ended items in the following four areas:

1. Eight items regarding participant characteristics, including age, education, employment status, monthly income level, marital status. For those women not married, one item asked whether they had a current close relationship partner. For persons who were not married and indicated they had a current close relationship partner, a follow-up question asked the gender of the close relationship partner. One item asked participants to describe their sexual preference as heterosexual (prefer sexual partners of opposite sex), homosexual (prefer sexual partners of the same sex), bisexual (prefer sexual partners of both sexes), or other.

2. Six items regarding HIV/AIDS status, and if HIV positive, whether currently receiving medical care; testing history (i.e., whether participant had ever had an HIV test; city and type of facility in which test took place); and HIV risk perception. HIV risk perception was measured on a scale of 1 = no risk to 4 = high risk.

3. Twelve items on use of alcohol, drugs (cocaine, inhalants such as paint or glue, marijuana, methamphetamines, and heroin), and needles (use of needles to inject street drugs or vitamins/medications, sharing a needle for tattooing, injecting drugs, or body piercing, cleaning a needle to use it again) measured 1 = never to 5 = very frequently. The time frame for all questions in this section was the last six months.

4. Nineteen items on sexual and condom use behavior measured 1 = never to 5 = very frequently. Included within these was an item that asked how often a participant had talked to a partner about using a condom in the last six months. The time frame for all questions in this section was the last six months.

In addition, participants were asked how many women and men sex partners they had in the last six months, if they had ever had sex with someone who was HIV positive, and how frequently, in the last six months, they had tried to become pregnant. The response for this last item ranged from 1 = never to 5 = very frequently.

#### Procedure

All procedures were approved by the SDSU Internal Review Board prior to initiation of the study. After permission to conduct the study was obtained from plant administrators, a flyer with basic information about the study was posted on bulletin boards in the plant. It indicated that \$60.00 pesos (approximately \$ 6.00 U.S. dollars) would be offered as an

incentive to participate in the study and it instructed women interested in participating to go to the plant clinic and include their name on a list. Because this study was designed to be a small, preliminary study, incentive resources were available for up to 100 participants only. Therefore, the interested participant list contained spaces for this number of participants only. After six days the lists were removed from the clinic as the required 100 participant slots had been filled. (One extra person arrived to fill out the questionnaire without having previously included her name on the sign-up list and she was included in the study, for a total of 101 participants.)

During the data collection period, women who had included their names on the clinic list arrived at a conference room in the plant and, upon arrival, a research assistant presented each participant with an informed consent form. After reading the informed consent form the participant signed it and put it into a manila envelope, sealed it, and returned it to one of the research assistants. No women declined to participate after reading the informed consent form. The participant was then given the 10-page questionnaire to fill out and another manila envelope; after completing the questionnaire, she was instructed to put it into the manila envelope, seal it, and return the envelope again to a research assistant. When the completed questionnaire was returned, each participant received \$ 60.00 pesos for her participation along with a list of community social and health resources.

## Results

### HIV Test History and Status

In the last 5 years, 17 women (16.83%) reported they had an HIV test; 12 (70.5%) of these women had their test in Mexicali, one (5.8%) in Tijuana, and four (23.5%) in other locations in Mexico. In addition, 11 of the 17 women (64.7%) received their HIV test at public hospitals, five (29.4%) in private laboratories, and one (5.8%) in a university-based HIV program. One woman indicated she was HIV positive and was currently receiving treatment for her illness. The mean HIV risk perception score was 2.10 ( $SD = 1.14$ ), although the modal response was 1 or *no risk*.

### Drug, Needle, and Alcohol Use

Because many results for the drug and alcohol use items were skewed, item responses were collapsed into two categories, never versus all others (i.e., rarely, sometimes, frequently, very frequently). No participant reported use of marijuana, methamphetamines, or heroin. Only one (.9%) and two (1.9%) women, respectively, reported they had used cocaine or inhalants such as paint or glue. Fifty-seven (58.8%) women reported use of needles to inject vitamins or medications and one woman (.9%) reported sharing a needle for tattooing, but no participant reported she had used a needle to inject illegal drugs, shared a needle for injecting drugs or body piercing, or cleaned a needle to use it again. A total of 70 (71.4%) participants indicated they drank beer, wine, or liquor in the last six months.

### Sexual Risk Behavior

In the last 6 months, 72 (71.2%) women reported sex with men (ranging from 1-13 partners). Excluding one participant who reported 13 male sex partners in the last 6 months, the average number of male partners was 1.44 ( $SD = 1.10$ ), with a median and modal number of male sex partners of one. A total of 5 (4.9%) women reported sex with women (ranging from 1-2 partners), with an average number of women sex partners of 1.00 ( $SD = .81$ ), and a median and modal number of women sex partners of one. Of the five women who indicated they had sex with women, two also had sex with men. Excluding the participant who reported 13 men sexual partners, these two participants both had the highest number of men sexual partners in the sample (one reported seven and the other reported six men sexual partners). Eighty-six women (85.1%) indicated their sexual orientation as heterosexual, three (3.0%) as homosexual, and two (2%) as other (unspecified). Ten (9.9%) women did not respond to the sexual orientation question. A cross tabulation showed that of the five women who reported sex with women, two indicated their sexual orientation as homosexual, and three as heterosexual. (The two women who also had sex with men reported their sexual orientation as heterosexual.) A second cross-tabulation showed that the one woman who reported herself as HIV positive identified herself as homosexual. No women indicated they had ever had sex with someone who was HIV positive. Seventeen women (16.8%) indicated they were currently trying to get pregnant. Again, because many results for the sexual risk behavior items were skewed, item responses were collapsed into two categories, never versus all others (i.e., rarely, sometimes, frequently, very frequently). Table 1 displays the frequencies and percentages, in descending order, for sexual risk behaviors for the last 6 months. For *vaginal*, *oral*, and *anal sex* the corresponding condom use frequencies are also presented. The sexual risk behavior with the highest frequency was *vaginal sex*, followed by *oral sex*, *had sex with a partner who was under the influence of alcohol*, and *had sex when you were under the influence of alcohol*. Condom use was highest for anal sex and lowest for oral sex. Four (3.9%) women indicated they *had sex with a partner who was high on drugs* and three (2.9) women indicated they *had sex with a partner who injects drugs*, but no women had sex when they themselves were high on drugs or to get drugs. Not included on the list above was the item *had talked to a partner about using a condom* and results showed that 40 (39.6%) women had talked to a partner about using a condom.

### Multivariate Analyses

Because no previous research on HIV risk behaviors among women maquiladora workers is available to guide selection of predictors for alcohol use and condom use with vaginal sex, exploration of the independent predictors of each of these dependent variables was undertaken in two stages. In the first stage, a logistic regression with each of these dependent variables was run with all sexual behavior and

Table 1.  
*Frequencies and Percentagens for Sexual Risk Behavior (last 6 months)*

In the last 6 months have you	N	%
Had vaginal sex	61	60.3
Used condom when you had vaginal sex	20	32.7
Had oral sex	35	34.6
Used a condom when you had oral sex	2	1.9
Had sex with a partner who was under the influence of alcohol	21	20.7
Had sex when you were under the influence of alcohol	20	19.8
Had sex with a man who has other female sex partners	18	17.8
Had anal sex	18	17.8
Used a condom when you had anal sex	7	6.9
Been forced to have sex when you did not want to have sex	17	16.8
Had partner who refused to use a condom	7	6.9
Had sex with a partner who was high on drugs	4	3.9
Had sex to make money	4	3.9
Had sex with partner who injects drugs	3	2.9
Had sex with someone for a place to stay	2	1.9
Had sex with a man who has sex with other men	1	.9
Had sex when you were high on drugs	0	
Had sex to get drugs	0	

demographic variables that had adequate frequencies for analysis. In the second stage, variables in these two first regression analyses that were moderately associated with *drank beer, wine or liquor* or *condom use with vaginal sex* ( $p < .02$ ) were then included in a subsequent, reduced logistic regression model with each dependent variable. Below these stages for the two dependent variables are described.

#### Alcohol Use

The first logistic regression model with *drank beer, wine, or liquor* as the dependent variable included the following sexual risk behavior and demographic predictor variables: *oral sex; anal sex; vaginal sex; had sex with a partner who was under the influence of alcohol; had sex with a man who has other female sex partners; and been forced to have sex when you did not want to have sex; marital status* (married, unmarried); *education* (equivalent of 9<sup>th</sup> grade and below, above equivalent of 9<sup>th</sup> grade); and *age*. The sexual risk variable *had sex when you were under the influence of alcohol* had an adequate frequency for analysis, but because it contained the same behavior as the dependent variable it was not included in regression analyses. All predictor variables were entered simultaneously. A test of the full model with all the predictors against a constant-only model was significant,  $\chi^2(9, N=60) = 24.31, p < .02$ , indicating that, as a set, predictors reliably distinguished between participants who used alcohol and those who did not. Table 2 summarizes results from this first regression analysis. Based upon the Wald criterion, the variables *anal sex, vaginal sex, marital status, and age* were all significant at  $p < .02$  and they were included as predictor variables in the second, reduced logistic regression model.

Table 3 presents results of this second, reduced logistic regression model with *drank beer, wine, or liquor* as the

dependent variable. A test of the full model with all the predictors against a constant-only model was significant,  $\chi^2(4, N=65) = 16.14, p < .01$ , indicating that, as a set, predictors reliably distinguished between participants who used alcohol and those who did not. *Marital status* was significantly related to alcohol use, in that single women were more likely to have drunk beer, wine, or liquor in the past six months than married women. According to the Wald criterion, women who engaged in *vaginal sex* in the last six months were more likely to have drunk beer, wine, or liquor than women who did not engage in vaginal sex. The effect of *age* on alcohol use approached significance, in that younger women were more likely than older women to have drunk beer, wine, or liquor in the past six months.

#### Condom use

The variable *currently trying to get pregnant* was significantly associated with condom use during vaginal sex ( $r = -.29, p < .05$ ), therefore, it was included as a covariate in both the first and second regression models. The first logistic regression model with condom use with vaginal sex included, after entry of *currently trying to get pregnant* at the first step, the following sexual risk behavior and demographic variables as predictor variables in the second step: *had sex with a partner who was under the influence of alcohol; had sex when you were under the influence of alcohol; had sex with a man who has other female sex partners; and been forced to have sex when you did not want to have sex; marital status* (married, unmarried); *education* (equivalent of 9<sup>th</sup> grade and below, above equivalent of 9<sup>th</sup> grade); and *age*. Because communication surrounding condom use has been a significant predictor of condom use in past research (Bruhin, 2003; Castañeda, 2000; Ehrhardt et al. 2002; Moore, Harrison, Kay, Deren, & Doll, 1995) the item *had talked to a partner about*

Table 2.  
*First Logistic Regression Analysis with Drank Beer, Wine, or Liquor as the Dependent Variable*

Variables	B	Wald test	Odds Ratio	95% CI	p
Age	-0.085	2.39	0.92	0.85-1.02	.122
Education	-0.172	0.04	0.84	0.17-4.16	.832
Marital status	2.193	5.78	8.96	1.50-53.54	.016
Oral sex	0.972	1.14	2.64	0.44-15.69	.284
Anal sex	1.506	1.85	4.51	0.51-39.52	.173
Vaginal sex	2.050	4.10	7.77	1.07-56.58	.042
Had sex with a Partner who was under the influence of alcohol	0.477	0.26	1.61	0.26-10.07	.609
Had sex with a man who has other female sex partners	1.687	1.02	5.40	0.20-144.07	.313
Forced to have sex when you did not want to have sex	-0.908	1.02	0.40	0.07-2.35	.312

Table 3.  
*Second, Reduced Logistic Regression Analysis with Drank Beer, Wine, or Liquor in the Last Six Months as the Dependent Variable*

Variables	B	Wald test	Odds Ratio	95% CI	p
Marital status	1.560	1.83	4.76	1.20-18.89	.026
Age	-0.078	3.11	0.92	0.85-1.00.077	
Anal sex	1.056	1.83	2.88	0.63-13.27	.176
Vaginal sex	2.272	5.72	9.70	1.51-62.56	.016

condom use was included as a predictor variable here as well. Simultaneous entry of variables was used at each step of the regression analyses.

Table 4 summarizes results from the first logistic regression model. At step 1, the variable *currently trying to get pregnant* was significantly associated with condom use, in that those trying to get pregnant were less likely to use a condom. At step 2, with all predictors in the model, there was no significant improvement in prediction,  $\chi^2(8, N=60) = 12.07, p > .05$ . However, examination of individual predictors indicate that the variables *currently trying to get pregnant; talked to a partner about condom use; had sex with a partner under the influence of alcohol; and had sex with a man who has other female partners* were all significant at  $p < .02$  and they were included as predictor variables in the second, reduced logistic regression model.

Table 5 presents the results of the second, reduced logistic regression model with *condom use with vaginal sex* as the dependent variable. At step 1, *currently trying to get pregnant* approached significance, in that condom use was less likely for those who were trying to get pregnant. At step 2, with all predictors in the model, a significant improvement in prediction was seen  $\chi^2(3, 61) = 7.91, p < .05$ . Again, *currently trying to get pregnant* approached significance. The variable *had sex with a man who has other female partners* was significantly related to condom use. Those who *had sex with partners who had other female partners* were more likely to use condoms than those who did not have sex with partners who had other female sex partners. The effect of the variable *had sex with a partner who was under the influence of alcohol* approached

significance. Participants who had sex with a partner who was under the influence of alcohol were less likely to use condoms with vaginal sex than those who did not have sex with a partner who was under the influence of alcohol.

#### Discussion

These preliminary results highlight that this sample is at low risk for HIV in some respects. Although a majority of women reported use of needles to inject legal medications and vitamins, they almost never used illicit drugs, combined sex with drugs, shared needles, or re-used needles. In addition, the majority of women were not engaging in sexual activity with multiple or anonymous male partners; rather, they were sexually active with one male partner in an ongoing relationship.

The low risk for HIV due to women's own sexual and drug use behavior found in this study is consistent with other studies of Mexican women's HIV risk behavior (Salgado de Snyder, Acevedo, Díaz-Pérez, & Saldívar-Garduño, 2000; Salgado de Snyder, Díaz Pérez, & Maldonado, 1996) as well as studies of immigrant Mexican women in the U.S. (Nyamathi, Bennett, Leake, Lewis, & Flaskerud, 1993; Romero, Wyatt, Chin, & Rodríguez, 1998; VanOss Marin, Tschann, Gomez, & Kegeles, 1993). Taken together these studies may suggest that Mexican women are protected from HIV infection, but the steadily increasing rate of HIV among Mexican women belies this protective effect (Magis Rodríguez, Bravo-García, & Uribe Zuñiga, 2003). Instead, women's risk for HIV infection may be due, as this study points out, to a more subtle and complex combination of their own behavior and that of their male partners.

Table 4.  
*First Logistic Regression Analyses with Used Condom with Vaginal Sex as the Dependent Variable*

Variables	B	Wald test	Odds Ratio	95% CI	p
<i>Step 1</i>					
Currently trying to get pregnant	-2.408	3.59	0.13	0.02-1.07	.058
<i>Step 2</i>					
Currently trying to get pregnant	-2.864	5.34	0.05	0.01-0.65	.020
Age	-0.055	0.93	0.95	0.85-1.06	.336
Education	-0.060	0.01	0.94	0.23-3.81	.932
Marital status	-0.869	1.36	0.42	0.09-1.81	.243
Talked to a partner about using a condom	1.690	3.67	5.42	0.96-30.52	.055
Had sex when you were under the were under the influence of alcohol	1.105	1.49	3.02	0.51-17.78	.221
Had sex with a partner who was under the influence of alcohol	-1.683	3.38	0.18	0.03-1.12	.066
Had sex with a man who has other female sex partners	1.412	2.49	4.10	0.71-23.74	.114
Forced to have sex when you did not want to have sex	0.395	0.18	1.48	0.24-9.17	.670

Table 5.  
*Second, Reduced Logistic Regression Analyses with Used Condom with Vaginal Sex as the Dependent Variable*

Variables	B	Wald test	Odds Ratio	95% CI	p
<i>Step 1</i>					
Currently trying to get pregnant	-2.014	3.48	0.13	0.02-1.11	.062
<i>Step 2</i>					
Currently trying to get pregnant	-2.229	3.73	0.11	0.11-1.03	.053
Talked to a partner about using a condom	1.194	2.58	3.30	0.77-14.16	.108
Had sex with a partner who was under the influence of alcohol	1.536	3.45	0.22	0.04-1.08	.063
Had sex with a man who has other female sex partners	1.736	4.54	5.68	1.15-28.06	.033

The degree of alcohol use by participants in this study stood out relative to their drug use. In addition, alcohol appears to play a role in sexual behavior as seen in the high proportion (relative to other sexual risk behaviors) of women who had sex with a partner who was under the influence of alcohol or when they themselves were under the influence of alcohol. This result is surprising because Mexican cultural norms support alcohol consumption by men, but proscribe it for women and women tend to show high rates of alcohol abstention, although this abstention is decreasing somewhat among women in urban areas (Medina-Mora, Borges, & Villatoro, 2000). Regression analyses were done to better understand how alcohol use may be related to risk behavior and results showed that women who were single and engaged in vaginal sex in the last six months were more likely to use alcohol than those who were married and did not engage in vaginal sex. Furthermore, results suggest that younger women are more likely than older women to engage in alcohol use. Whether these results are typical of maquiladora women in general compared to other groups of Mexican women still needs further assessment, but they suggest that greater

education on the risk of alcohol use and unprotected sex may be needed, particularly among younger, single, and sexually active women.

Condom use in this sample was low, but because heterosexual contact is the leading exposure category for HIV among women in Mexico (Magis-Rodríguez, Bravo-García, & Uribe Zúñiga, 2003; UNAIDS/WHO Working Group on Global HIV/AIDS and STI Surveillance, 2002), and it is routinely recommended as an HIV prevention strategy (e.g., Pulerwitz, Amaro, De Jong, Gortmaker, & Rudd, 2002; Pulerwitz, Izazola-Licea, & Gortmaker, 2001), an effort to understand variables related to condom use was made in this study. Multiple regression analyses found that, after controlling for whether women were attempting to get pregnant, having sex with a partner who has other female partners was significantly related to condom use with vaginal sex. In this case, condom use was greater with a partner who had other female partners. Women who know their partner has other sex partners appear to be aware of the importance of condom use. Whether this condom use is to prevent HIV, other sexually transmitted diseases, or

pregnancy is not clear from this study, but this is a positive finding.

On the other hand, having sex with a partner who is under the influence of alcohol is associated with less condom use. For women, initiating condom use when a partner is under the influence of alcohol may be more difficult and women may hesitate to attempt to convince a partner to do so, or may be less successful when they try. This result highlights again the need and importance of greater HIV education, skill building, and prevention efforts surrounding alcohol use and sexuality.

Ultimately, a comprehensive approach to condom promotion among women in maquiladoras must also include a focus on men, either in men-only or couple programs (Acosta-Pérez & Peragallo, 2001; Amaro, 1995; Amaro & Raj, 2000; Hirsch, Higgins, Bentley, & Nathanson, 2002; Pulerwitz et al. 2002). Condom use is a male behavior, whereas for women condom use involves seeking a partner's cooperation to use condoms. The behavioral skills and psychological and social dynamics involved in condom use are quite different for women and men, and HIV prevention efforts must reflect these differences (Amaro, 1995; Amaro & Raj, 2000).

Because women in this sample were not engaging in typical HIV risk behaviors and most women in this sample were in an ongoing relationship with one male partner, they may be less likely to see the need for protective measures (Hirsch et al. 2002), and this is reflected in the low perception of risk for HIV and rate of HIV testing found in this sample. A focus on the close relationship context and elements such as intimacy, commitment, and caring in HIV prevention interventions may increase the relevancy and effectiveness of HIV/AIDS risk reduction efforts with this group (Castañeda, 2000; Castañeda & Collins, 1998). In addition, HIV prevention programs with women working in maquiladoras must be sensitive to and understand gendered power differentials in heterosexual relationships (Jenkins, 2000; Pulerwitz et al. 2002; Quina, Harlow, Morokoff, & Saxon, 1997).

Five women had sex with women in the last six months, and of these, two reported having sex with men. Excluding the one woman who reported 13 male partners in the last six months, these two women had the highest number of male sex partners in the sample. With six and seven male partners each, these participants stood out in a sample where the modal number of male sex partners was one. Neither of these two women identified themselves as homosexual. While these results in such a small sample are suggestive only, they point to the need to make certain that women who have sex with women are not ignored in HIV prevention efforts. Sexual activities with women partners can lead to exposure to HIV as well as other sexually transmitted diseases (Diamant, Lever & Schuster, 2000). Also, women who have sex with *both* women and men tend to have higher risk male sexual partners than women who have sex with men only (Lemp et al. 1995; Richters, Bergin, Lubowitz & Prestage, 2002). Even women who identify themselves as lesbian have sexual contact with men (Richters et al. 2002; Reinisch, Sanders, & Ziemba-Davis, 1995). In fact, the one

woman in this study who reported herself to be HIV positive indicated her sexual orientation as homosexual. As this study shows, self-applied labels are important, but taken alone they cannot provide a full picture of women's risk for HIV or the complexity of women's sexual activity, sexual identity, and the relationship between the two among women in Mexico.

Limitations to the findings here should be noted. This study is a preliminary and exploratory one with a small and self-selected sample of women working in a maquiladora. Generalizations to the population of women who work in the maquiladora industry are only cautiously made. Future studies should include larger and more representative samples. In addition, this study does not show how maquiladora women may differ in their risk for HIV from women who are unemployed or work in other employment sectors in Mexico. Despite these limitations, this study is a first step in providing information that can be used to develop more targeted, and hopefully, more effective, HIV prevention programs for women working in maquiladoras.

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Received 22/09/2005  
Accepted 24/02/2005

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