

Use of Commercial Sex Workers Among Hispanic Migrants In North Carolina: Implications for the Spread of HIV

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CONTEXT: Rates of HIV and AIDS have risen among U.S. Hispanics and in migrant-sending regions of Mexico and Central America, pointing to a link between migration and HIV. However, little is known about male migrants' sexual risk behaviors, such as the use of commercial sex workers.

METHODS: The prevalence and frequency of commercial sex worker use was examined among 442 randomly selected Hispanic migrants in Durham, North Carolina. Logistic and Poisson regression techniques were used to model predictors of commercial sex worker use, and descriptive data on condom use with commercial sex workers were examined.

RESULTS: Twenty-eight percent of respondents reported using the services of a commercial sex worker during the previous year; rates reached 46% among single men and 40% among married men living apart from their wives. Men with spouses in Durham were less likely than other men to use commercial sex workers (odds ratio, 0.1). Among men who used commercial sex workers, the frequency of visits declined with greater education (incidence rate ratio, 0.9) and increased with hourly wage (1.1). Frequency and use declined with years of residence, although the results were of borderline significance. Reported rates of condom use with commercial sex workers were high, but were likely to fall if familiarity with a commercial sex worker increased.

CONCLUSIONS: Commercial sex workers represent an important potential source of HIV infection. Educational and behavioral interventions that take into account social context and target the most vulnerable migrants are needed to help migrants and their partners avoid HIV infection.

Researchers have become increasingly concerned with the connection between migration and the spread of HIV.¹ Migration from Mexico and Central America to the United States is a massive phenomenon with dramatic male overrepresentation.² HIV and AIDS rates among U.S. Hispanics are disproportionately high, and the prevalence of heterosexual transmission is rising rapidly.³ Evidence from migrants' countries of origin indicates that the epidemic is extending to rural areas in conjunction with migration, and that married women are particularly vulnerable to infection.⁴ While a growing body of research has described the social and psychological contexts that render male migrants vulnerable to HIV infection,⁵ relatively few studies have examined migrants' sexual behaviors, and fewer still the socioeconomic correlates of risk. This lack of knowledge limits our ability to develop programs to reduce migration-related HIV risk in the United States and abroad.

Several factors connect migration and HIV. Migration brings an increased number and variety of people into contact with one another, raising the likelihood of infectious disease transmission.⁶ At the same time, migration is often associated with family separation, dramatic changes in cultural environment, social isolation and a greater sense of anonymity, which may encourage migrants to adopt high-risk sexual practices.⁷ In addition, migrants' low income, poor work conditions,

precarious legal status and limited proficiency in the host language often reduce their access to social services and limit their ability to obtain reliable health information.⁸ Finally, the male-dominated migrant flow, especially in the case of Mexican and Central American migration to the United States, hinders the ability of migrants to find partners of the opposite sex and promotes the adoption of potentially risky sexual practices.

Although research on Hispanic migrants' sexual behavior is scant, previous studies have documented a relatively high prevalence of one such behavior—contact with commercial sex workers. Reported rates range from 30% among Northern California Mexican farmworkers to 18% among migrant farmworkers on the East Coast.² One study of 43 married Mexican men in Durham, North Carolina, found that 23% had a commercial sex worker among their most recent partners,¹⁰ and in a study of 342 male migrants who returned to Mexico, 44% reported having visited commercial sex workers while in the United States.¹¹ The high prevalence of commercial sex worker use is directly associated with the social environment of migrant workers: Commercial sex workers actively solicit male migrants at labor camps, bars and other locations where they congregate, often on payday and in areas where migrants cash their paychecks.¹²

Previous studies, however, have focused almost exclusively on seasonal agricultural workers or migrants in the U.S.-Mexico border region.¹³ Remarkably little information is available about the sexual practices of Hispanic migrants in metropolitan areas of the United States, even though urban areas have long been their preferred destination.¹⁴ Information is particularly scarce regarding newly emerging destinations, such as Durham and other metropolitan areas in the Southeast that have experienced a rapid influx of migrants. In addition, most studies have employed small-scale qualitative designs. Such study designs can provide in-depth ethnographic information about the social and cultural context undergirding commercial sex worker use, but have limited capacity to assess variation in patterns of commercial sex worker use according to men's social and demographic characteristics.

In this study, we examined commercial sex worker use among a randomly selected sample of foreign-born Hispanics in Durham. We concentrated on describing the likelihood and frequency of commercial sex worker use and examined how men's characteristics were related to such use. In addition, we assessed the likelihood of condom use with commercial sex workers. Our approach examined commercial sex worker use in relation both to men's socioeconomic characteristics and to characteristics of the migration experience. We also assessed the effect of HIV knowledge and risk perception on the use of commercial sex workers, as these factors can be affected by policy interventions.

METHODS

Study Population

The data were drawn from 442 randomly selected migrant Hispanic men who were interviewed face-to-face in Durham between April 2002 and July 2003. Durham, like other cities in the Southeastern United States, has recently experienced exponential growth in the Hispanic population, from 2,054 in 1990 to 17,039 in 2000; Hispanics now represent 8% of the city's total population, up from 1% in 1990. According to data from the 2000 census,¹⁵ almost 75% of Hispanics in the city are foreign-

born, and of those, 95% are from Mexico or Central America. Upward of 85% of foreign-born Hispanics migrated to the United States between 1990 and 2000; the overwhelming majority are undocumented and lack legal authorization to work. As a result, their occupational diversity is limited; the majority are employed in either construction (52%) or food services (14%). As in most migrant populations, the gender composition of migrants in the region is uneven. In fact, the Raleigh-Durham area had the most unbalanced sex ratio among foreign-born Hispanics of any metropolitan area in the United States in 2000,¹⁶ with 2.3 men aged 20-29 for every like-aged woman. The rapid increase in Hispanic representation in HIV cases in the area, from 1% to 4% between 1990 and 2001,¹⁷ highlights the importance of HIV-related research in this population.

Data Collection

Studying a nascent migrant community poses several methodological challenges.¹⁸ Gaining access to the community and building the trust necessary to gather information on sensitive issues such as sexual behavior and immigration status can be difficult. We relied heavily on community-based participatory research to achieve these ends. Specifically, we worked extensively with 14 members of the migrant Hispanic community, who have been directly involved in every stage of the research, including formulating and revising the questionnaire, identifying survey locales and developing strategies to guarantee the collection of meaningful information.* In addition, the group members were trained as interviewers and conducted all surveys. The group was instrumental in enabling us to reach the fledgling Hispanic community in Durham. Group members facilitated the collection of sensitive information and helped us achieve a response rate of 90%, a figure that is much higher than those reported in other random surveys of recent migrants.¹⁹ The group continues to provide culturally grounded commentary that guides the interpretation of our analyses.

The small size of the Hispanic community in Durham complicated the use of simple survey techniques and required special considerations for selecting a random sample. Through our extensive involvement with the community, we identified 13 apartment complexes and blocks that house large numbers of Hispanic migrants. We then conducted a census of all 2,100 housing units in these buildings and blocks, and drew a simple random sample of men.

The precarious legal situation of migrants made it difficult to randomly select individuals within the housing unit; prior experience suggested that residents were wary of divulging information about other residents and often were not familiar with their housemates' personal information, such as birthdays. Thus, interviewers were instructed to survey any eligible man who answered the door (i.e., someone who was foreign-born, Hispanic and aged 18-49), or if this person was ineligible, to ask for a qualifying person to interview. Respondents were paid \$25 for their participation. After the interviewer established trust with the interviewee, basic information about other household residents was collected. Comparing respondents' characteristics with those of other household members showed no obvious bias due to our method of choosing respondents within the household.

Information from the 2000 census revealed that nearly 75% of Hispanics in Durham live in areas similar to those in which the 13 apartment complexes are located—i.e., in blocks that are 25-60% Hispanic. An even higher percentage of Hispanics may live in such areas, but block-level data identifying the foreign-born population were not available. In addition, we estimated that more than 7,000 Mexican and Central American migrants, or nearly 70% of the total Mexican and Central American population of Durham, resided in the apartment complexes included in our sample.

Statistical Analysis

Using a semistructured questionnaire, interviewers collected detailed information on demographic, social and economic characteristics, as well as data on migration experience and family arrangements, including partners' characteristics and place of residence. In addition, extensive information on sexual practices, including the use of commercial sex workers in Durham, was collected. Two survey questions provided the data for the dependent variables in the analysis: Migrants were asked if they had used the services of a commercial sex worker during the past year in Durham and, if so, the number of times they had done so. The survey also included a series of questions on condom use in the commercial sex setting.

Independent variables in the analysis were socioeconomic factors that could have influenced sexual behavior: country of origin, age, marital status (including whether a spouse or partner was present), education and hourly wages. We also considered two elements of the migration experience: length of residence in Durham and whether the respondent had lived in another U.S. location before migrating to Durham. Finally, we considered the impact of AIDS knowledge and perceived HIV infection risk on behavior with commercial sex workers. AIDS knowledge was assessed by asking respondents to agree or disagree with the following statements: Teenagers can get AIDS; any person with HIV can pass it on to someone else during intercourse; you can tell by someone's appearance whether he or she has AIDS; and AIDS is transmitted by sharing plates, forks or glasses with someone who has the AIDS virus, by using public restrooms, by kissing or exchanging saliva with someone who is HIV-positive, by mosquito or insect bites, and by sharing needles. The number of correct responses represented the AIDS knowledge score. Perceived HIV infection risk was assessed by asking respondents how concerned they were about becoming infected with the virus that causes AIDS, and allowing them to select one of the following: very concerned, somewhat concerned and not concerned.

In the multivariate analysis, separate models were used to assess the socioeconomic factors affecting the likelihood and the frequency of commercial sex worker visits. We applied logistic regression techniques²⁰ for the analysis of the dichotomous variable indicating whether a migrant visited a commercial sex worker in the past year.¹ The frequency of commercial sex worker visits did not follow a normal distribution. Thus, ordinary least squares regression was inappropriate for analysis. Instead, frequency of visits was treated as the realization of a Poisson distribution²¹ and modeled using count data techniques.¹

In the descriptive data, the independent variables were treated categorically; in the multivariate analysis, most variables were treated as continuous.

The final part of the analysis focused on reported condom use with commercial sex workers and on condom decision-making. The respondents were asked if they had ever had sexual relations with a commercial sex worker in the United States and, if so, how many times they had done so in the last year. Those who said they had visited commercial sex workers were asked how often they used condoms and were allowed to select one of the following: always, sometimes or never. In addition, they were asked how often they would use a condom (always, sometimes or never) if a commercial sex worker had a good reputation or they knew her well.

RESULTS

Sample Characteristics

Mexicans made up the largest migrant Hispanic group in Durham (71% of the sample), followed by Hondurans (16%) and Salvadorans (9%); the remaining men were from other Central American countries (Table 1), primarily Guatemala. Within their countries of origin, the migrants were from diverse areas (including 26 states in Mexico alone), encompassing rural villages, small towns and metropolitan areas.

The average age of respondents was 29.4 years (not shown); three-quarters of men were 25 or older. Marital status varied considerably. Most men (62%) were married, but only 40% were married and living with their spouse. Nearly one-quarter (22%) of all men were married but living apart from their wives, who most often continued to reside in the migrants' communities of origin. The proportion of men living apart from their wives was greater among Mexicans (25%) than among their Salvadoran (13%) and Honduran (17%) counterparts (not shown).

The respondents had an average of 7.6 years of education; 21% had 10 or more years of education, 38% had 7-9 years and 41% had six or fewer years. The average wage was slightly less than \$10 an hour, although 37% earned less than \$8 per hour and 32% earned more than \$10 per hour. Most had lived in Durham for fewer than seven years; average residency was 5.1 years. However, a considerable proportion (44%) of the respondents had moved to Durham from another U.S. location. While these migrants' additional U.S. experience could facilitate their adaptation, they had an average of only 3.6 more years of U.S. residence than direct migrants.

The majority of men scored perfectly on the eight-item AIDS knowledge scale, and the average number of incorrect responses was only 1.4. The vast majority of men perceived their personal risk of AIDS to be medium or low, but 28% reported being very concerned about becoming infected with HIV.

Use of Commercial Sex Workers

Overall, 28% of the men surveyed had used the services of a commercial sex worker during the previous year (Table 1). This rate is similar to the one found among farmworkers in California,²² but much higher than the 5% estimated in Mexico.²³ Among those visiting a commercial sex worker, the average number of visits in the past year was 7.7, with considerable dispersion evident in the standard deviation. Most men visited commercial sex workers infrequently; half reported four or fewer visits during the past year.

The proportion of men reporting visits to commercial sex workers was 30% among Mexicans, 28% among Hondurans, 16% among Salvadorans and 22% among other men; the annual frequency of visits among those visiting commercial sex workers was 8.0, 7.3, 3.8 and 6.7, respectively. The proportion reporting commercial sex worker use was 35% among men younger than 25, 24% among men aged 25-34 and 29% among men 35 or older.

Forty-six percent of single men and 40% of married men living apart from their wives visited commercial sex workers, as did 5% of men living with their spouses. Among men reporting visits

to commercial sex workers, the annual frequency of visits was 8.4 among single men, 5.9 among married men living without their spouses and 8.8 among married men living with their spouses.

In the multivariate analysis, characteristics directly connected with the migration process were associated with the likelihood of commercial sex worker use, and men's general characteristics were related to variation in the frequency of visits to commercial sex workers.

Neither national origin nor age predicted commercial sex worker use once other factors were taken into account (Table 2). Not surprisingly, most of the variation in the likelihood of commercial sex worker use was explained by marital status and the presence or absence of a spouse. Married men who lived with a spouse were significantly less likely than single men to visit a commercial sex worker (odds ratio, 0.1), but married men whose wives lived in their country of origin were just as likely as single men to have visited a commercial sex worker in the previous year. Married men with an absent spouse reported less frequent visits to such workers than single men, although the result was of borderline significance (incidence rate ratio, 0.7). Financial responsibilities associated with maintaining a family abroad may contribute to these differences. Married men living without their wives were more likely than single men to be sending wages to their families (93% vs. 80%), and they sent an average of \$550 per month, compared with \$400 per month for single men (not shown). It is important to note that the 5% of men living with their wives in Durham who visit commercial sex workers do so at a rate that is not significantly different from that of single men.

Education was not associated with the use of commercial sex workers, although a higher level of education was associated with less frequent visits to commercial sex workers (0.9). Men with more education may have a greater awareness of the health risks associated with commercial sex workers, and thus may limit their frequency of visits. Hourly wages were not associated with the use of commercial sex workers, but the higher the wages, the more frequent the visits (1.1). This is not surprising, considering that payments to commercial sex workers constitute a significant expense for migrant workers. Informal discussions with the respondents suggested that a 15-minute session with a commercial sex worker costs an average of \$30, or roughly three hours of a typical migrant's wages.

Duration of residence in Durham appears to be a predictor of both the likelihood and the frequency of visits to commercial sex workers, but the results were only marginally significant. Every additional year in Durham was associated with a nearly 10% reduction in men's odds of visiting a commercial sex worker and in their frequency of visits. As migrants accumulate time in the United States, their ability to secure noncommercial partners most likely increases, which may discourage commercial sex worker use.

Finally, AIDS knowledge did not predict commercial sex worker use, but a finding of borderline significance suggests that migrants who perceived their risk of acquiring HIV to be high visited commercial sex workers less often than men with lower perceptions of risk.

Condom Use with Commercial Sex Workers

A large proportion of respondents—92%—reported always using condoms with commercial sex workers (Table 3). This rate of consistent use is higher than the 70% reported in a study conducted in the early 1990s of return migrants to Mexico,²⁴ but similar to the rate found in a large survey in Mexico in which commercial sex workers reported condom use in 91% of sexual transactions.²⁵ While commercial sex workers themselves generally insist upon condom use, there is also evidence of willingness to use condoms among Hispanic men; 52% of migrants reported that they had made the decision to use condoms with commercial sex workers, and 25% reported that the decision was mutual.

It bears emphasizing that while condom use with commercial sex workers was common in the study, it was not universal. More important, the proportion of men reporting that they would always use a condom with commercial sex workers dropped to 87% if the men felt that the commercial sex worker had a good reputation and to 64% if they knew her well. Thus, men with the greatest risk of HIV infection because of frequent visits to commercial sex workers may have further elevated risk because the perceived need to use condoms falls with familiarity with a sex worker.

DISCUSSION

Use of commercial sex workers is widespread among Hispanic migrants in Durham. Almost half of single men and 40% of married men living apart from their wives reported visiting a commercial sex worker during the previous year. The high rate of reported condom use with commercial sex workers could be an important factor moderating HIV risk. However, condom use is not universal and may fall precipitously as familiarity with the commercial sex worker increases. Furthermore, condoms are less than 100% effective in blocking HIV transmission.²⁶

Thus, commercial sex worker use poses a threat not only to migrants' own health, but also to the health of their noncommercial partners. The cyclical nature of migration to the United States from Latin America, particularly from Mexico, implies that large numbers of migrants are likely to return to their country of origin and have sexual contact with partners in their home communities. Condom use in primary and even secondary relationships is remarkably low in migrant-sending regions, and heterosexual transmission of HIV has been rising in these areas, particularly among women.²⁷ Our findings indicate the need for more effective strategies to reduce commercial sex worker use and promote condom use among migrants while they reside in the United States.

It is possible that more established migrants were underrepresented in the study because of our data collection methods. However, our data collection strategy was far superior to alternative approaches, such as convenience or snowball sampling, prevalent in research on small populations.²⁸ The relatively large size and random representation of our sample enhance the validity and generalizability of our findings, and provide valuable information for HIV prevention programs for Hispanic migrants on their countries of origin and destination.

The multivariate analysis provides several insights that may be useful for the development of such initiatives. There are three primary ways to limit HIV risk associated with commercial sex worker use: Limit the number of men who ever visit commercial sex workers, reduce the frequency of men's

visits to commercial sex workers and increase condom use.

Our results suggest that to be effective, such efforts need to address broader issues surrounding Hispanic immigration to the United States. Commercial sex worker use is far more common among Hispanic migrants than among men in Mexico and does not vary systematically by age, education, income, AIDS knowledge or perceptions of risk. Thus, commercial sex worker use is a fairly generalized phenomenon that accompanies labor migration to the region. The few characteristics that predict commercial sex worker use are embedded within intractable elements of the migration process itself, complicating the design of effective public health interventions. Specifically, commercial sex worker use among Hispanic migrants often stems from the highly unbalanced gender composition in the community and the fact that it contains a significant number of married men living apart from their wives for extended periods of time. Given the current political climate regarding immigration and increases in border patrol activity that have made illegal crossings into the United States more perilous, it is unlikely that the male overrepresentation will be resolved in the near future.

The current study offers insight into some possible strategies to limit the use of commercial sex workers. The fact that commercial sex worker use fell as men's familiarity with Durham increased suggests that reducing migrants' isolation and facilitating social interaction might enhance the possibility of encountering noncommercial sex partners. Overall, this finding highlights the need for HIV prevention efforts that move beyond targeted informational campaigns and take into account social context, particularly the isolation and loneliness that often plague recent migrants.

Our results offer guidelines for preventive efforts aimed at limiting migrants' frequency of commercial sex worker visits. Educational attainment, economic constraints and time in the United States are related to reduced frequency of commercial sex worker visits and thus HIV risk. Intervention efforts should therefore be targeted to those who are most vulnerable, particularly single men, the less educated and the most recent arrivals to Durham. Particularly important for policy implementation is the finding that greater awareness of the risk for infection with HIV is associated, albeit marginally, with a reduction in the number of commercial sex worker visits. This suggests that broader and far-reaching instructional campaigns that directly inform migrants about the risk of commercial sex worker use and HIV infection can be efficacious.

Finally, our findings on condom use suggest additional avenues for public health interventions. While much of the impetus for condom use with commercial sex workers begins with those in the industry, many migrants reported that they themselves decided to use condoms with commercial sex workers. This indicates that some public health initiatives on HIV are reaching this group. However, there is a need to continue public information campaigns on condom use, to develop interventions for both suppliers and consumers of commercial sex, and to incorporate a transnational dimension by reaching men both in the United States and in their countries of origin. These campaigns should emphasize the importance of condom use even with commercial sex workers who have good reputations or who are well known to clients, since these are the situations in which migrants' resolve to use condoms appears weakest.

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Acknowledgments

Funding for this project was provided by grant NR08052-04 from the National Institute of Nursing Research. We would like to thank research assistants Amanda Phillips Martínez and Leonardo Uribe, El Centro Hispano, our community-based participatory research colleagues and the Hispanic community of Durham, NC.

*An initial group of members was recruited from involvement in focus groups and an HIV prevention lay health advisory program in conjunction with El Centro Hispano, a local Hispanic advocacy organization. This group was later expanded to include additional men and women connected to El Centro Hispano who were interested in public health and community involvement.

†The model was estimated as $\ln[p/(1-p)] = a + BX$, where p is the probability of the event's occurring, X is a vector of independent variables and a and B are parameters to be estimated.

‡It was assumed that the dependent variable, the number of visits to a commercial sex worker, follows a Poisson process, such that $\ln(m) = a + BX$, where the log of the mean (m) is assumed to be a linear function of the independent variables X , and a and B are parameters to be estimated. This specification implies that the mean number of visits to a commercial sex worker is the exponential function of independent variables. To account for the potential overdispersion arising from the effect of latent and uncontrolled factors, we relaxed the assumption that the variance equals the mean and estimated the scale parameter of the Poisson distribution as the square root of the ratio of the deviance to its associated degrees of freedom using the GENMOD procedure with the option DSCALE in SAS. (Source: Pedan A, Analysis of count data using the SAS system, in: SAS, Proceedings of the Twenty-Sixth Annual SAS Users Group International Conference, 2001, , accessed Oct. 5, 2003.)