

reports.<sup>2-4</sup> Some injury deaths among pregnant women were likely to have been included in the nonpregnant, nonpostpartum group. However, the effect on the fatality rate was probably minimal as a result of the relatively small number of these deaths.

Injury deaths constituted a large proportion of preventable deaths among postpartum women in Georgia. Because the majority of postpartum women have received prenatal and postnatal care, health care providers have a unique opportunity to help prevent injury deaths among their patients. We found that a large proportion of the postpartum homicide victims were killed by a boyfriend, husband, or ex-husband. Thus, one approach for prevention is to conduct physical abuse screening among

prenatal and postpartum patients and, when needed, to offer referrals to services such as housing, counseling, child care, and legal assistance. Additional strategies that effectively reach postpartum women, especially teenagers, need to be developed and evaluated. Encouraging seat belt use among these patients may help reduce motor-vehicle-related deaths. □

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## Facilitating Condom Use with Clients during Commercial Sex in Nevada's Legal Brothels

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### Introduction

Although latex condoms can substantially reduce the risk of transmission of human immunodeficiency virus (HIV) and other sexually transmitted diseases (STDs),<sup>1-4</sup> men frequently fail to use condoms during intercourse and thus place their female partners, as well as themselves, at risk for infection.<sup>5,6</sup>

Although most HIV prevention programs focus on women's responsibility to ensure that condoms are used,<sup>7</sup> gender inequity often prevents women from protecting themselves in sexual encounters.<sup>8,9</sup> Women have traditionally lacked power over sexual decision making—including whether a condom is used—largely as a result of perceived threats to physical, social, and/or economic survival. Thus, women must be able to rely on their sexual negotiation skills to introduce and sustain condom use with their male partners.

It has been hypothesized that sex workers (prostitutes) are more likely to be in control of sexual decision making than other women (i.e., in terms of deciding

what type of sex they are willing to have and whether condoms will be used).<sup>9,10</sup>

However, it is only in Nevada's legal brothels that sex workers' insistence on condom use is upheld by law. In March 1988, in an effort to prevent the transmission of HIV, the Nevada legislature enacted a mandatory condom law requiring condoms during all brothel sexual activity. Although Nevada's mandatory condom law is made known to prospective clients before sexual activity begins, with a public health notice posted outside on entrance gates and inside over the bar, brothel workers previously have reported that some clients are still reluctant to use condoms (personal communication by brothel workers to A. Albert, 1993).

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### ABSTRACT

**Objectives.** This study examined condom use in legal Nevada brothels.

**Methods.** Forty female prostitutes in two brothels were interviewed about client resistance to condoms and techniques for facilitating condom use.

**Results.** Of 3290 clients in the previous month, 2.7% (95% confidence interval [CI] = 2.2%,3.4%) were reluctant to use condoms. Of these individuals, 72% ultimately used condoms, while 12% chose nonpenetrative sex without condoms. The remaining 16% left the brothels without services. Condom use rates were markedly lower with nonpaying sex partners (lovers) than with clients.

**Conclusions.** Brothel prostitutes may be at greater risk for acquiring HIV and other sexually transmitted diseases from lovers than from clients. (*Am J Public Health.* 1998;88:643-646)

In previous research, we described the success of brothel workers in using condoms consistently and effectively with their clients.<sup>11</sup> The absence of HIV and other STDs among this population suggests that workers avoid engaging in unprotected sexual activity.<sup>11,12</sup> This study's objectives were to evaluate (1) the proportion of clients who initially refused or were reluctant to use condoms, (2) workers' techniques for facilitating condom use, and (3) women's condom use with nonpaying sex partners (lovers).

## Methods

During July 1995, female prostitutes working in 2 legal Nevada brothels were administered a standardized interview regarding client encounters and condom use practices. Subjects were required to be at least 18 years old and to have worked in a legal brothel for at least 1 month prior to the study. Women provided informed consent and were assured that information imparted would not be released to other parties, including employers, coworkers, and law enforcement personnel. Subjects were paid \$20 for study completion.

## Results

Forty of 45 licensed female prostitutes (89%) satisfied eligibility criteria and agreed to participate in the study. The remaining 5 women were ineligible as a result of inadequate brothel work experience. The demographic characteristics and brothel work experience of subjects are summarized in Table 1.

During the previous month, 26 workers (65%) had encountered at least one client resistant to using condoms. Thirteen women had had multiple clients unwilling to use condoms in the last month. Workers who encountered resistant clients were significantly older (32 years vs 27 years;  $P < .10$ ) and had worked in legal brothels significantly longer (4.9 years vs 2.2 years;  $P < .05$ ) than those who did not, despite having similar numbers of clients in the previous month (82 vs 84).

Of subjects' 3290 total clients in the previous month, 90 (2.7%; 95% confidence interval [CI]=2.2%, 3.4%) initially refused or were reluctant to use condoms. Among resistant clients, 65 (72%) used a condom after women stated that neither vaginal intercourse nor fellatio would otherwise occur. Sixty-one of these men (94%) voluntarily used condoms after being verbally persuaded by women; however, 4 men used

**TABLE 1—Subjects' Demographic Characteristics and Brothel Work Experience (n = 40), July 1995**

	Sample
Demographic characteristics	
Age, y, mean (SD)	30 (8.7)
Range	19–59
Years of education, mean (SD)	13.4 (1.9)
Range	10–18
Race/ethnicity, %	
White non-Hispanic	70
Black non-Hispanic	2
Hispanic	5
Native American	5
Asian American	5
Mixed	13
Marital status, %	
Married	15
Never married	45
Separated or divorced	40
Living status, %	
Alone	50
With lover	40
With friend	8
With parents	2
Brothel work experience	
Years working in legal brothels, mean (SD)	4.0 (4.8)
Median	1.5
Range	1 mo–17 y
Work shifts <sup>a</sup> in last month, mean (SD)	17.8 (9.1)
Median	15
Range	4–50
No. clients in last month, mean (SD)	82 (56)
Median	69
Range	5–240
No. clients per day, mean (SD)	5.6 (2.4)
Median	5
Range	2–12

<sup>a</sup>A typical work shift lasts 12 hours.

condoms only after the worker had surreptitiously placed it on their penises without their knowledge. Eleven resistant clients (12%) chose nonpenetrative sexual services (e.g., masturbation of the client, penis-between-breasts sex, body massages, mutual masturbation, and striptease shows) without condoms, and 14 (16%) departed the brothels without receiving any services (including 5 clients who were forced to leave the premises by brothel security guards). No worker reported having unprotected vaginal intercourse with a client who refused to wear a condom.

Brothel workers reported several techniques to make condoms more appealing to their customers. All 40 women reported that they routinely put the condom on the client's penis, most frequently with their hands (93%) and their mouths (65%) and, occasionally, with their vaginal muscles (4%). Women reported eroticizing condom use by (1) seductively describing use of the condom

(e.g., "I give much better head with a condom"), (2) claiming that sex was more pleasurable for them with a condom (e.g., "I have a new condom with ribbing on the outside, so it'll be great for me too"), and (3) massaging the client's penis with lubricant before donning the condom. Moreover, 17 workers (43%) reported that they could unroll a condom on a client's penis without his knowledge while performing fellatio or massaging his penis. Clients usually did not discover the condom until after ejaculation, when the penis was withdrawn from the woman's vagina or mouth (83% of instances). Men generally reacted with amazement that women had slipped the condoms on in such an inconspicuous manner.

Twenty-four workers (60%) reported that they routinely offer nonpenetrative sexual activities to clients who still refuse condom use. Among the 90 resistant clients who had visited the brothels in the previous month, 50 (56%) were offered the opportu-

nity to engage in nonpenetrative sex without condoms. Of these clients, 29 (58%) ultimately agreed to use a condom to engage in vaginal intercourse or fellatio, 10 (20%) left the brothels, and, as stated earlier, 11 (22%) accepted nonpenetrative services.

Thirty-eight brothel workers (95%) reported having a lover in the last year. While 24 workers (63%) had one lover, 14 reported having multiple nonpaying partners (mean = 1.9, range = 1 to 10). All but three lovers (96%) were male. Condom use was markedly lower with lovers than with brothel clients. While 100% of workers had used condoms consistently with clients during vaginal intercourse in the previous year, only 7 of the 38 women (18%) used condoms consistently with lovers ( $P < .001$ , based on Fisher's exact test). The mean per-person rate of condom use with lovers was significantly higher among women with multiple partners (68%) than among those with a single partner (19%;  $P < .001$ ). Still, 10 of the 14 workers involved with multiple lovers in the last year reported inconsistent condom use with these partners. The most frequently given reason for not using condoms with lovers was that there was no perceived risk of infection (i.e., "I trust him," "He's monogamous").

## Discussion

The finding that only 2.7% of all clients who visit the brothels initially refuse or are reluctant to use condoms was surprising. Although data are sparse, previous research suggests that client refusal rates among other types of sex workers are higher.<sup>13,14</sup> However, given the frequency and volume of client contacts, this finding suggests that brothel workers regularly encounter clients who are unwilling to use condoms and, thus, must be prepared either to insist on condom use or to ensure that intercourse does not take place. Workers were highly successful in this regard, as evidenced by the fact that none of the women had engaged in unprotected vaginal intercourse with a client in the previous year. Moreover, women were able to convince 84% of their initially resistant clients to remain in the brothels and use a condom or accept nonpenetrative sexual activities.

Nevada's mandatory condom law and brothel workers' firm insistence on condom use are undoubtedly important factors in ensuring the use of condoms by clients. However, perhaps even more critical is the ability of sex workers to transform the condom into an acceptable part of sexual activity. Women must be able to introduce and

sustain condom use successfully with their clients if the brothels are to remain profitable. Brothel workers' techniques to achieve condom use have applicability outside of commercial sex, as suggested by previous studies associating communication about and eroticization of condoms with increased levels of condom use among non-sex worker populations.<sup>1,15,16</sup>

The finding that condom use with lovers was significantly lower than that reported inside the brothels was disconcerting but is consistent with other prostitution studies.<sup>17-19</sup> In our study, most women reported involvement in monogamous relationships and probably perceived little reason to use condoms with their only lover. However, it should be noted that women frequently work, and thus reside, at the brothels for extended periods, during which time lovers' risk behaviors may not be known; thus, women may largely underestimate their lover's risk status.

A number of workers with multiple lovers failed consistently to use condoms outside of the brothels and thus were at increased risk for HIV and other STDs. Decreased condom use with lovers may result from sex workers' attempts to separate their personal and professional worlds.<sup>20,21</sup> Furthermore, intercourse with lovers occurs in a less controlled atmosphere than with brothel clients, where safeguards (e.g., buzzers in rooms and security personnel) have been incorporated to effectively deal with resistant clients. Workers probably experience the same obstacles to condom use as other women once outside brothel confines.

The study is limited by several factors. First, the accuracy of self-reported retrospective data on number of clients and condom use could not be verified and may have been flawed by poor memory and/or fabrication. However, our previous prospective study at these brothels found that condoms were used during every act of vaginal intercourse,<sup>11</sup> corroborating the findings of this study.

Second, because of atypical working conditions, brothel workers' techniques for facilitating condom use with clients may not be generalizable to other types of sex workers. No matter how verbally or erotically persuasive a worker may be, clients know well in advance of sexual activity that condoms are expected. In addition to encountering prominent health notices, a client, once he selects a woman, is taken back to her bedroom and explicitly told that condom use is mandatory. Some women ask clients for an extra dollar to cover the cost of the condom. Clients may even sus-

pect that in the face of adamant client resistance, workers have recourse (i.e., they may refuse service) that brothel management must support.

In summary, these women have demonstrated successfully the ability to facilitate condom use with clients in a unique sex-for-pay environment. It is through sexual activity with lovers that brothel prostitutes may be at greatest potential risk for acquiring HIV and other STDs. Additional research is needed to more adequately understand the barriers to condom use within these sex workers' personal relationships. □

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## Reducing Pregnancy and Induced Abortion Rates in China: Family Planning with Husband Participation

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### ABSTRACT

**Objectives.** This study assessed the effectiveness of a family planning intervention with and without husband's participation in reducing pregnancy and abortion rates in Shanghai, China.

**Methods.** In this 3-arm randomized trial among 1800 nonsterilized married women, educational interventions targeting both spouses and targeting the wife only were compared with usual family planning care.

**Results.** Among women not using intrauterine devices (IUDs), the intervention with husband's participation had an effect in reducing pregnancy rates (adjusted odds ratio [OR] = 0.36, 95% confidence interval [CI] = 0.12, 1.1) and abortion rates (adjusted OR = 0.29, CI = 0.09, 0.94) compared with control subjects, and a significant effect in reducing pregnancy rates (adjusted OR = 0.29, CI = 0.10, 0.85) and abortion rates (adjusted OR = 0.24, CI = 0.07, 0.77) compared with wife-only subjects.

**Conclusions.** Family planning interventions involving husbands may reduce pregnancy and abortion rates among non-IUD users. (*Am J Public Health*. 1998;88:646–648)

### Introduction

China's success in promoting widespread contraceptive use is an enormous and consequential feat of public policy. However, the country's low fertility rate has also been attained by relying heavily on induced abortion.<sup>1–3</sup> Lack of knowledge about conception and contraception accounts for many abortions, and at considerable cost.<sup>2</sup> Current Chinese family planning programs are targeted almost exclusively to women. However, a number of studies indicate the potential effectiveness of including husbands in family planning efforts.<sup>4–6</sup> Physician-directors at the Maternal and Child Health Hospital of LuWan District in Shanghai designed and evaluated the first Chinese family planning intervention to test the effect of educating husbands as well as wives. In this 3-arm randomized trial, a family planning intervention targeting both wife and husband and targeting the wife only was compared with usual family planning care. We examined whether each of the interventions reduced pregnancy and abortion rates compared with usual care.

### Methods

#### Setting and Population

The target population was limited to 13 285 women of childbearing age working

in 21 factories and 6 middle schools served by the LuWan Maternal and Child Health Hospital within Shanghai's LuWan District. Factories and schools (each representing one Chinese *danwei*, or work unit) were randomly assigned to 1 of 3 arms. In the 2 experimental arms, wives plus husbands, or wives only, received an educational intervention in addition to usual care, while subjects in the control arm received only usual family planning care. Cluster randomization by work unit to treatment group was employed to minimize contamination, with 9 work units in each arm.

From these 27 work units, 1800 nonsterilized married women of childbearing age were randomly selected to participate. Systematic sampling was used to select participants; every seventh woman was chosen

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