Condom Use among Female Commercial Sex Workers in Nevada's Legal Brothels

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ABSTRACT

Objectives. The purpose of this study was to evaluate condom use and the incidence of breakage and slippage during vaginal intercourse among female prostitutes in legal Nevada brothels, where use of condoms is required by law.

Methods. Forty-one licensed prostitutes in three brothels were enrolled in a prospective trial in August 1993. Used condoms were collected to verify reported breaks visually. Retrospective breakage and slippage rates were obtained in a standardized interview.

Results. Condoms were used for every act of vaginal intercourse with a brothel client during the study period, as well as in the previous year. In the prospective study phase, condoms were used in 353 acts of vaginal intercourse with clients. No condoms broke, and none fell off the penis during intercourse. Only twice (0.6%) did condoms completely fall off during withdrawal. Twelve times (3.4%) during intercourse and 15 times (4.3%) during withdrawal, condoms slipped down the penis but did not fall off.

Conclusions. These findings, among the lowest breakage and slippage rates published, suggest that regular condom use may lead to condom mastery and the development of techniques to reduce the likelihood of breakage and slippage. (*Am J Public Health.* 1995;85:1514–1520)

Introduction

Nevada is the only US state in which commercial sex is legal. Since 1971, counties of fewer than 400 000 people have been able to elect to legalize brothels. At present, there are 32 legal brothels employing about 300 licensed prostitutes.

Licensed brothel sex workers undergo weekly state-mandated medical examinations for gonorrhea, herpes, and venereal warts and monthly blood tests for syphilis. In March 1986, the Nevada Board of Health began requiring a negative initial human immunodeficiency virus (HIV) antibody test and negative monthly tests thereafter as a condition of employment. If a brothel worker or applicant is found to be seropositive, her employment is immediately terminated or denied.[1–3] Between July 1, 1988, and December 31, 1993, more than 20 000 HIV tests were conducted. None of the women employed at any of the Nevada brothels tested positive.[1,4] In the same period, however, 19 brothel applicants tested HIV seropositive.[4] These data are in sharp contrast to HIV seroprevalence rates among other female prostitutes in the United States.[5–7]

Data indicate a negligible incidence of other sexually transmitted diseases among these women. A 1988 study found 5000 cases of gonorrhea in Nevada, only 9 of which were detected in legal brothels.[8] More than 7000 sexually transmitted disease tests conducted between 1982 and 1989 on 246 prostitutes in one brothel revealed only 2 cases of syphilis and 19 cases of gonorrhea, all reportedly contracted before implementation of Nevada's mandatory condom law.[9,10]

Although the actual exposure level of brothel workers to clients with HIV and other sexually transmitted disease infections is not known,[11] the absence of HIV and other sexually transmitted diseases may be explained by the fact that clients are required to use condoms during every sexual act. In January 1987, the brothel industry voluntarily adopted a compulsory condom policy in response to a 30% to 40% decline in business following reports that HIV could be spread through heterosexual contact.[2,10] This policy was ratified by the state as a mandatory condom law in March 1988.

While latex condoms can substantially reduce the risk of transmission of HIV and other sexually transmitted diseases when used consistently and correctly,[11–14] condoms may still break or slip off and thereby expose users to potential infection and risk of pregnancy.[15,16] Summaries of prospective and retrospective studies of condom breakage and slippage in developed countries are provided in Tables 1 and 2, respectively.[16–39] Typical condom breakage rates range from 0.5%

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This paper was accepted March 21, 1995.

Editor's Note. See related editorial by Stein (p 1485) in this issue.

TABLE 1—Prospective Studies of Condom Breakage and Slippage in Developed Countries

Study	Population (Location)	No.	Study Period (Total Condoms)	Type of Sex	Breakage Rate, %			Slippage Rate, %		
					Clinical	Non-clinical	Total	Complete	Partial	Undefined
Richters et al.[17,a]	Female and male prostitutes (Sydney, Australia)	4 30	4 mo (605) 4 mo (664)	Vaginal Anal	0.5 0.5	... ...	... ...	... ...	... ...	... ...
Leeper and Conrardy[18]	Clinical research participants (US)	49	... (147)	Vaginal	0.7[h]	...	...	5.4	2.0	...
Trussell et al.[19,b,c]	Family planning recruits (Atlanta)	49	21 d (478)	Vaginal	1.3[h]	2.4	3.7[h]	0.6	9.5–16.6	...
Trussell et al.[20,c,d]	Family planning recruits (Atlanta)	68	16 d (405)	Vaginal	1.7[h]	0.7	2.4[h]	...	...	13.1
Richters et al.[21]	Male sexually transmitted disease clinic attendees (Sydney, Australia)	36	3 mo (529)	Vaginal and anal	1.9	0.9	2.8	...	...	3.4
Steiner et al.[22,c,e]	Monogamous couples (North Carolina)	268	... (1072)	Vaginal	2.4[i]	0.8	3.3[i]	5.4	...	...
Steiner et al.[23,f]	Monogamous couples (North Carolina)	262	4 mo (4589)	Vaginal	...	...	3.5–18.6	...	...	...
Steiner et al.[24,c]	Monogamous couples (North Carolina)	177	4 mo (1947)	Vaginal	3.7[i]	1.6	5.3[i]	...	...	3.5
Foldesy et al.[25]	Couples recruited by mail (North Carolina)	188	... (752)	Vaginal	...	...	4.1	...	...	...
Gotzsche et al.[16]	Female prostitutes and male and female hospital staff (Denmark)	40	... (385)	Vaginal	...	...	5.0	...	...	...
Sparrow and Lavill[26,c,g]	Male and female family planning clinic clients (New Zealand)	540	1 mo (3685)	Vaginal	...	...	5.3	...	...	5.1
Russell-Brown et al.[27]	Local recruits (North Carolina)	45	6 wk (358)	Vaginal	...	...	6.7	...	...	...

Note. Clinical breakage refers to breakage occurring during either intercourse or withdrawal; nonclinical breakage refers to breakage occurring before intercourse.
[a]See correction cited in reference 19.
[b]Rates of condoms slipping down without falling off were 9.5% during intercourse and 16.6% during withdrawal.
[c]In these studies, events of breakage and slippage were unambiguously not double counted; in other studies, some condoms that broke may have also slipped.
[d]Slippage rate recalculated from original article and reflects condoms that fell off or slipped down during intercourse or withdrawal.
[e]Among new condoms used with either no additional lubricant or water-based lubricant. Rates recalculated from original article.
[f]Breakage rates ranged from 3.5% for a new lot to 18.6% for an 81-month-old lot.
[g]In addition, 6 condoms broke and 4 condoms slipped in a total of 19 episodes of anal intercourse when condoms were used.
[h]Excludes breakage when removing the condom from the penis after withdrawal.
[i]Includes breakage when removing the condom from the penis after withdrawal.

to 6.7%. Complete slippage, when the condom falls off the penis during intercourse or withdrawal, has only recently begun to be quantified. Falling-off rates range from 0.6% to 5.4%. More recent attention has focused on condoms that slip down the penis but not completely off (i.e., partial slippage).

Nevada offers a unique opportunity to study condom use, particularly the incidence of condom breakage and slippage, among female prostitutes who use condoms with their clients on a regular basis.

Methods

Research Design

The study was conducted among licensed female prostitutes working in three legal brothels, or "ranches," located in Storey County, 13.6 km (8.5 miles) east of Reno. Forty-four women were enrolled during the 9-day period August 23 to 31, 1993, from Mustang Ranch #1 (20 women), Mustang Ranch #2 (16 women), and Old Bridge Ranch (8 women). Subjects were required (1) to be at least 18 years old, (2) to have worked in a legal brothel for at least 1 month prior to the study, (3) to have worked the previous day, and (4) to be scheduled to work the following 3 days.

Brothel managers informed eligible women of the opportunity to participate voluntarily in a confidential study on condom use. The female researcher described the purpose of the study, the study design, and conditions of participation. Women were assured that information they provided would not be released to other parties, including their employers, coemployees, and law enforcement agen-

TABLE 2—Retrospective Studies of Condom Breakage and Slippage in Developed Countries

Study	Population (Location)	No.	Recall Period(s)	Type of Sex	Breakage Rate, %	Slippage Rate, %
Consumers Union[28]	*Consumer Reports* readers (US)	3300	12 mo	Vaginal	0.6	...
			12 mo	Anal	1.0	...
Albert et al.[29]	Female family planning clinic clients (Atlanta)	106	12 mo	Vaginal	0.8	3.3
			Lifetime		1.0	...
de Graaf et al.[30,a]	Female prostitutes and male clients (the Netherlands)	126 prostitutes	6 mo	Vaginal	0.8	0.3
		82 clients	12 mo		1.5	2.2
Hatcher and Hughes[31]	Reproductive health employees, university students, and family planning clinic clients (Atlanta)	457	Lifetime	Vaginal	1.0	...
Chan-Chee et al.[32,b]	Male and female condom purchasers (Paris)	201	3 mo	Vaginal	1.5	...
		46	3 mo	Anal	4.5	...
Grady and Tanfer[33]	20–39-year-old respondents, 1991 National Survey of Men (US)	1226	6 mo	Vaginal, anal, oral	1.9	2.0
Warner et al.[34]	Self-selected university students (Atlanta)	98	1 mo	Vaginal	4.6	1.8
			12 mo		5.1	4.2
			Lifetime		3.7	3.9
Trussell et al.[19]	Family planning recruits (Atlanta)	49	1 mo	Vaginal	6.2	1.0
			12 mo		5.0	1.9
			Relationship		3.1	0.8
Trussell et al.[20]	Family planning recruits (Atlanta)	68	1 mo	Vaginal	6.3	...
			12 mo		3.5	...
			Relationship		2.6	...
Weinstock et al.[35,c]	Male and female sexually transmitted disease clinic attendees (California)	180	2 mo	Vaginal	4.3	...
Golombok et al.[36]	Recruits from gay organizations (London)	97	12 mo	Anal	4.7	3.8
Tindall et al.[37]	Recruited men (Australia)	174	...	Anal	6.0	...
Richters et al.[21]	Male sexually transmitted disease clinic attendees (Sydney, Australia)	182	12 mo	Vaginal	6.3	2.8
		172	12 mo	Anal	7.9	5.1
Thompson et al.[38,d]	Homosexual men (New York)	1993	12 mo	Anal and oral	2.7–3.3 (combined)	
					0.9–1.2 (combined)	
van Griensven et al.[39]	Homosexual men (Amsterdam, the Netherlands)	174	6 mo	Anal	8.0 (combined)	

[a]Slippage rate reflects condoms that slipped off both before and after ejaculation.
[b]Total users for vaginal intercourse excluded seven female prostitutes for whom cumulative data were not available.
[c]In addition, one condom broke in a total of 24 episodes of anal intercourse in which condoms were used.
[d]Combined failure rates for anal intercourse were 2.7% for receptive partners and 3.3% for insertive partners. Combined rates for oral intercourse were 0.9% for insertive partners and 1.2% for receptive partners.

cies. Sex workers indicated consent by signing a volunteer agreement form. Four of 48 eligible women refused to participate: 2 reported that answering personal questions caused them discomfort, 1 voiced concern about spending potential work time completing forms, and 1 could not read English.

The study was conducted in two phases. First, a 25-minute standardized interview was administered to assess demographic characteristics and medical, sexual, and condom use histories. Retrospective condom breakage and slippage rates during vaginal intercourse in a legal brothel during the previous week ("last work week"), previous month ("last work month"), and previous year ("last 12 work months") were calculated by dividing the total number of times a condom broke or fell off by the estimated total number of times condoms were used during vaginal intercourse for each period.

For the prospective phase, subjects were asked to complete identical condom evaluation forms after each of their next 10 consecutive condom uses. A condom use was defined as a sexual episode during which condoms were used; an episode in which two condoms were used simultaneously (doubled up) was counted as one condom use. Subjects were instructed to use their own condoms in the way they normally would. Women were instructed to save the used condoms in a sealed plastic bag, so they could be visually inspected for ruptures and also counted to verify the total number used.

The forms addressed the following: whether the condom broke, and, if so, when it broke and where the break occurred; whether, during intercourse, the condom slipped down the shaft of the penis but did not fall off or fell off completely; and whether, during withdrawal, the condom slipped down or fell off completely. In analyses of prospective breakage and slippage rates, a hierarchical convention was used to avoid double counting of events.[19]

Subjects were paid $40 for complet-

ing the study. The study protocol, volunteer agreement form, and instruction sheet were reviewed and approved by the Human Investigations Committee at Emory University. Study materials were written at the eighth-grade reading level.[40] Data analyses were conducted with SAS and StatXact Turbo. A significance level of $P \leq .05$ was used.

Subject Characteristics

The average age of enrolled commercial sex workers was 29 years ($\sigma = 6.4$, range = 18 to 44). Thirty women (68%) were White non-Hispanic, 5 (11%) were Black non-Hispanic, 1 (2%) was Hispanic, 1 (2%) was Asian American, and 7 (16%) were of mixed race. Eight women (18%) were married, 19 (43%) had never been married, and 17 (39%) were separated or divorced. Participants reported an average of 13.1 years of education ($\sigma = 2.0$). Most women (86%) had either graduated from high school or earned their general equivalency diploma. Two women reported having had a sexually transmitted disease in the previous year. Sexually transmitted disease histories for the previous 12 months were verified for each woman through the brothels' health care provider.

Women reported experiencing their first act of vaginal intercourse (whether consensual or not) at an average age of 15.0 years ($\sigma = 3.0$, range = 5 to 22). Fourteen of the participants (32%) had their first sexual encounter at 13 years of age or younger. Most women described their first sexual partner as being a boyfriend or lover (68%), while others described this person as being an older acquaintance (11%), relative (7%), friend (7%), or casual pickup (5%). The first vaginal intercourse for 10 of the women (23%) was nonconsensual.

Table 3 summarizes women's work experience as prostitutes in the general sex industry and in legal Nevada brothels. Twenty-seven women (61%) began working in a legal brothel the same year they began working as a prostitute. Ten women (23%) reported selling sex in Nevada prior to implementation of the 1988 mandatory condom law.

Results

Retrospective Breakage and Slippage during Commercial Sex

During the day, week, and month preceding the study, workers reported averages of 5 (range = 2 to 17, median = 5), 34 (range = 10 to 119, median = 29), and 105 (range = 28 to 476, median = 84) acts of vaginal intercourse, respectively. Their average number of acts of intercourse per month was 27% higher than the typical sexually active American woman's 83 acts of vaginal sex per year.[41] All women reported using a condom for every act of vaginal intercourse with a brothel client in the previous year.

At least one condom break during intercourse was reported by 2 women (5%) for the week prior to the study, by 7 women (16%) for the previous month, and by 19 women (43%) for the previous year. The average breakage rates per condom use were 0.14% (2 of 1473) in the previous week, 0.19% (9 of 4625) in the previous month, and 0.12% (49 of 41 127) in the previous year. Six women (14%) during the week prior to the study, 17 women (39%) during the previous month, and 29 women (66%) during the previous year reported that they had experienced at least one instance when a condom completely fell off their client's penis during intercourse or withdrawal. The average falling-off rates per condom use were 0.81% (12 of 1473) in the previous week, 0.91% (42 of 4625) in the previous month, and 0.25% (103 of 41 127) in the previous year. These rates of breakage and falling off are much lower than those reported in other retrospective studies of condom use (Table 2).

Condom breakage and slippage were not equally distributed within the study sample. Of the 49 total breaks in the year prior to the study, 20 (41%) were reported by 1 woman. Fourteen of the 42 instances of slippage in the previous month (33%) were reported by another woman. Likewise, 48 of the 103 instances of slippage in the previous year (47%) were reported by only 3 women. Of the 44 women, 37 (84%) reported no breakage or slippage in the previous week, 25 (57%) reported no breakage or slippage in the previous month, and 12 (27%) reported no breakage or slippage in the previous year. Conversely 1 woman (2%) reported at least one incident of both breakage and slippage in the previous week; 5 women (11%), in the previous month; and 16 women (36%), in the previous year.

Prospective Breakage and Slippage during Commercial Sex

Forty-one of the 44 enrolled women (93%) participated in the prospective trial. Condoms were used in a total of 353 acts of vaginal intercourse with clients. Over the 3-day study period, 31 women (76%) completed all 10 condom evaluation forms. Among the 10 women who evaluated fewer than 10 condom uses, 9 did not have enough clients during the 3-day study period and 1 quit after assessing 1 condom use. All 41 women verified using a condom for every act of vaginal intercourse during the study period.

Since women used their own condoms in the study, various brands and types were used. The brands used were Trojan (174 condom uses [49%]), Kimono (105 condom uses [30%]), Prime (48 condom uses [14%]), and other (26 condom uses [7%]). Prelubricated condoms were used in 228 of the 353 acts of

TABLE 3—Prostitution Work Experience

	Sample
Mean age began working, y (range)	
As a sex worker	21.8 (16–32)
As a licensed brothel worker	25.0 (17–44)
Length of employment as a sex worker, no. subjects (%)	
<1 y	5 (11)
1–2 y	10 (23)
3–10 y	15 (34)
>10 y	14 (32)
Length of employment as a licensed brothel worker, no. subjects (%)	
<1 y	12 (27)
1–2 y	11 (25)
3–10 y	15 (34)
>10 y	6 (14)
Mean no. of days worked over the preceding month (range)	
Past week	6.4 (4–7)
Past month	19.3 (10–28)
Mean no. of clients over the preceding month (range)	
Previous day	6 (3–12)
Past week	36 (15–84)
Past month	111 (40–336)

Note. Because some clients may elect not to have vaginal sex during a specific encounter, while others may have multiple acts of vaginal sex, workers' average number of acts of vaginal intercourse may not always be identical to the average number of clients during analogous time periods. For our sample, the number of clients in the last day differed from the number of acts of intercourse in the last day for 24 of the 44 women.

protected intercourse (65%); in 59 of these 228 acts (26%), the prelubricant contained spermicide. Additional water-based lubricant was used with condoms a total of 314 times (89%) and was most frequently applied to the outside of the condom or the surfaces of the vagina. The women used no oil-based lubricants. They purchased condoms directly from the brothel in only a minority of instances (25%).

Altogether, condoms were used for 372 episodes between a prostitute and a client: 353 including and 19 excluding vaginal intercourse. In 264 of the 372 episodes (71%), the sex worker rubbed the client's penis with her hand while he wore the condom, and, in 306 episodes (82%), the woman performed fellatio while the client was wearing the condom. No worker reported anal intercourse.

Subjects reported that no condoms broke at any time (95% confidence interval [CI] = 0.0%, 0.8%). Lack of breakage was verified through visual inspection of each condom by the female investigator at the completion of the study.

No condoms fell off the penis during intercourse (95% CI = 0.0%, 0.8%); in two instances (0.6%), condoms fell off the penis during withdrawal (95% CI = 0.1, 2.0%). Eight women reported a total of 12 instances (3.4%) of the condom slipping down the shaft of the penis during intercourse without falling off (95% CI = 1.8%, 5.9%). Two women experienced 2 slippages each, and one women experienced 3 slippages. In 15 of the 351 protected acts of intercourse (4.3%) during which condoms neither broke nor fell off during or after sex, condoms slipped down the shaft of the penis during withdrawal without falling off (95% CI = 2.4%, 7.0%). These 15 slippages during withdrawal were reported by eight women; three women each had 1 slippage, three women each had 2 slippages, and two women each had 3 slippages. In 5 acts of intercourse, condoms reportedly slipped down the shaft both during intercourse and during withdrawal in the same coital act. Among the total 17 acts of intercourse in which the condom fell off or slipped down during withdrawal, the penis was no longer erect in 11 instances (65%).

There was no significant difference in slippage rates (without the condom falling off) when condoms were prelubricated (3.5% during intercourse and 3.1% during withdrawal) and when condoms were not prelubricated (3.2% during intercourse and 6.4% during withdrawal). Higher slippage rates occurred among women whose clients had at least one condom fall off in the previous week (4.3% during intercourse and 10.6% during withdrawal) than among women whose clients did not (3.3% during intercourse and 3.3% during withdrawal). Likewise, slippage rates were higher among women who had worked in a brothel less than 2 years (5.3% during intercourse and 10.6% during withdrawal) than among women who had worked in a brothel for at least 2 years (2.7% during intercourse and 1.9% during withdrawal). In both of these comparisons, only the increased rate of slippage during withdrawal—normally considered user error—was statistically significant.

The client reportedly ejaculated during 310 (88%) of the 353 acts of protected vaginal intercourse. Among coital acts in which the client ejaculated, no ejaculate spilled or leaked near the vaginal opening in 300 cases (97%). During 6 acts of intercourse (1.9%), spillage was confirmed by the sex worker. In the remaining 4 acts, the woman was unsure.

Breakage and Slippage Prevention Strategies

Women were asked to describe reasons for condom breakage and strategies used to prevent breakage. Insufficient vaginal lubrication (50%), improper condom use (e.g., use of oil lubricants, use of old condoms, not leaving space at the condom tip) (34%), vigorous intercourse (25%), manufacturing defects (25%), and use of condoms of improper size (7%) were most commonly mentioned as reasons for breakage. Among the most-cited techniques to prevent breakage were use of additional water-soluble lubricant (64%); monitoring the condition of the condom regularly throughout intercourse (20%); refraining from rough, vigorous sex (18%); using appropriately sized condoms (5%); and changing condoms during prolonged intercourse (5%). Many of these tips have previously been suggested to prevent condom breakage.[12,29,42–45]

Use of multiple condoms simultaneously was also a frequently reported method (9%) to prevent breakage. Twenty-nine women (66%) reported that at least one client had worn two condoms concurrently during intercourse in the previous year, for a total of more than 5000 concurrent uses. Eight women reported doubling up condoms during every act of commercial intercourse in the previous year. Visual inspection of the used condoms from the prospective trial revealed that condoms were doubled up in 10.8% of the 372 sexual episodes. Condoms were doubled up primarily to prevent breakage when women had experienced a prior condom break, when the client's penis was very large, when the client presented with unidentifiable penile sores or track marks, when a thin condom was being used, and when the client requested it. To avoid friction, women reported applying additional lubricant between the condoms.

Women's explanations for slippage included too much additional lubricant on the outside or inside of the condom, a small-sized penis, loss of penile erection, and tightening of vaginal muscles during withdrawal. To prevent slippage, at least 43% of women reported holding onto the rim of the condom throughout sex as well as during withdrawal. Some women reported replacing the condom at the first sign of slippage.

Discussion

Condom breakage was negligible among this population of female commercial sex workers and their clients. The prospective breakage rate (0.0%) was consistent with and supported the retrospective breakage rates. Moreover, retrospective rates for the previous week, month, and year corroborated each other (0.14%, 0.19%, and 0.12%, respectively), suggesting reliable subject reporting. These breakage rates during vaginal intercourse are the lowest published to date (Tables 1 and 2), suggesting that female prostitutes who use condoms consistently may develop techniques to achieve lower breakage rates than other users.

Similarly, prospective falling-off rates (0.0% during intercourse and 0.6% after intercourse) indicated that slippage is not a problem in this population. Prospective rates were nearly identical to rates reported for condoms used prior to the trial. Some condoms slipped down the shaft of the penis without actually falling off; 3.4% slipped down during intercourse and 4.3% during withdrawal. Additional research is needed to document this specific type of slippage.

Our findings should be considered in light of the following design limitations. First, licensed sex workers in Nevada enjoy a work environment that fosters consistent and correct condom use. Because of these atypical working conditions, our results would be unlikely to apply to the entire universe of sex workers. The reported breakage and slippage rates may not even generalize to the

overall population of female prostitutes in Nevada brothels. The three brothels we investigated may not be representative of all legal Nevada brothels. Moreover, biases resulting from self-selection into the study (the refusal rate was 8%) are impossible to estimate. Women who had had problems using condoms in the past may have chosen not to participate in a study investigating condom use.

Second, the accuracy of self-reported retrospective data cannot be verified and may be flawed by poor memory or deliberate misreporting. However, for questions in which certain answers could threaten employment status as a result of internal brothel policies, participants appeared to disclose information honestly. For example, brothel owners attempt to screen out prostitutes who use drugs, and evidence of drug use is grounds for immediate dismissal[1]; nevertheless, 54% of subjects admitted to working, on at least one occasion, while high on drugs and/or alcohol. In addition, participants' self-reported sexually transmitted disease histories were confirmed by the brothels' health care provider, and the reporting of no condom ruptures was verified by physical examination of used condoms. These findings suggest the reliability of subjects' responses.

Notwithstanding the limitations of this study, these subjects demonstrated abilities to use condoms both consistently and without breakage. Given that condom breakage and slippage are primarily due to incorrect use,[13,27,44,46–48] these sex workers appear to use condoms correctly. Experience in using condoms has been shown elsewhere to reduce the likelihood of breakage and slippage.[17,23,24,31,43] Consequently, our low breakage and slippage rates may be attributable to the considerable experience of these consistent condom users.

The implications of these findings extend beyond the sex worker population. Condom failures reduce users' confidence in the product, and fears about product reliability undermine efforts to promote the consistent use of condoms.[49] To change attitudes about condoms, health care providers need to communicate to their clients that regular condom use may lead to condom mastery. It has been a common finding in medicine that experienced users are more likely to have healthier outcomes through more efficient use of the resource in question.[50] The results of this investigation demonstrate that experienced condom users have developed techniques for using condoms on a regular basis without breakage and without the condom falling off. There could be a considerable public health payoff from promoting these strategies more widely. □

Acknowledgments

We are indebted to Andy Sack, MBA, George W. T. Flint, Marvin Albert, MA, Sally Zierler, PhD, Jacqueline Boles, PhD, Carole A. Campbell, PhD, Susan Brandzel, MPH, William Graves, PhD, Maxine Keel, Herbert Peterson, MD, Tom Arrowsmith-Lowe, DDS, MPH, Scott McGuire, Jack Howard, Alberta Nelson, RN, Bette Flint and the staff of the Chapel of the Bells, and the management, staff, and, most especially, working women of Mustang Ranch #2, Mustang Ranch #1, and Old Bridge Ranch.

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