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Factors influencing IDU and non-IDU female commercial sex workers' intentions to always use condoms for vaginal sex with their regular partner

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Abstract *This paper discusses the factors influencing female commercial sex workers' (*N *= 172) intentions to use condoms with their regular partners during vaginal sex. While 73 of these women were at risk for HIV/STD transmission and acquisition primarily because of their commercial sex work (CSWonly), 99 were at risk because of both commercial sex work and injecting drug use (CSWs/IDUs). For CSWs/IDUs, attitudes (beta = 0.42), partner norm (beta = 0.24) and the mean of the weighted control beliefs (beta = 0.23) were significant independent predictors of intention R = 0.77). Although attitude (beta = 0.43) and partner norm (beta = 0.28) were also significant independent predictors of intention among CSWonly, they were not concerned with control issues, but instead considered the normative proscriptions of their most important others (i.e. the subjective norm; beta = 0.22;* R *= 0.74). For both CSWonly and CSWs/IDUs, the behavioural belief that using condoms makes you more relaxed, and the normative belief (or partner norm) that your main partner thinks you should or should not use condoms were identified as critical targets for an intervention. In addition, for CSWs/IDUs the control belief concerning the partners' openness to condom use was also identified as a critical target for an intervention.*

Female commercial sex workers (CSWs) and their clients have often been viewed as a critical core group contributing to the spread of HIV and other STDs (see e.g. Plummer *et al.*, 1999). Generally speaking, CSWs are considered to be at high risk of STD/HIV infection and transmission because, in comparison to non-sex trading populations, they have higher frequencies of (unprotected) sex, higher numbers and changes of partners and higher frequencies of prior STDs (see Logan & Leukefeld, 2000). While these factors continue to contribute to the spread of HIV and other STDs in some countries, the role of commercial sex work in the spread of disease appears to be less important in others. In part, this may reflect the fact that there is considerable variation in the demand for (or use of) commercial sex. For example, only 3.6% of men in the UK reported that they had *ever* paid a female sex worker for sex (Johnson *et al.*, 1989). Similarly, in France, only 3.3% of men reported that they had purchased sex from a female prostitute in the *past five years* (Spira *et al.*,1992).[1]

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In contrast, in situations (or locations) in which the number of unattached males greatly exceeds the number of females (such as around military bases or in many large African and Asian cities), there is a high demand for female commercial sex workers. For example, data from the World Health Organization indicate that in the Ivory Coast, Lesotho, Togo and Kenya, between 8 and 13% of sexually active men had purchased sex from a commercial sex worker *during the past year* (see Carael *et al.*, 1991). Even higher rates of men purchasing commercial sex have been reported in Thailand (Nopkesorn *et al.*, 1993) and among long-distance truck drivers in East Africa (Carswell *et al.*, 1989).

In addition, and probably more important than variations in demand, there has been a significant change in the behaviour of many CSWs, particularly those in Western Europe, Australia, the USA and Canada. More specifically, and probably as a result of the AIDS epidemic, CSWs in these and other countries have greatly increased their use of condoms with both occasional and regular clients (Plummer *et al.*, 1999). Unfortunately, the same is not true with respect to their sexual relations with their regular or steady partners. Female CSWs, like most women, are much less likely to use condoms with their regular partners or spouses than with their clients or occasional partners (Fritz, 1998; von Haeften *et al.*, 2000).

Interestingly, although a considerable body of research has investigated factors affecting CSWs' condom use with clients in the USA (i.e. Albert *et al.*, 1998; Witte *et al.*, 1999) and internationally (i.e. Cameron *et al.*, 1998; Campbell, 2000; Sedyaningsih-Mamahit & Gortmaker, 1999; Walden *et al.*, 1999), relatively little is known about the factors influencing CSWs' decisions to use or not use condoms with their regular partners (but, for an exception, see Jamner *et al.*, 1998). Understandably, most researchers, particularly those working in developing countries, have endeavoured to reduce the risk of sex workers transmitting and/or acquiring HIV and other STDs through their sexual behaviours with their clients (i.e. Levine *et al.*, 1998; Sneed & Morisky, 1998). Based on this research, there is now considerable evidence that theory-based interventions can significantly increase safer-sex behaviours between CSWs and their clients (see e.g. Fishbein *et al.*, 1996; Levine *et al.*, 1998; Ngugi *et al.*, 1999).

The purpose of the present study is to investigate the factors underlying CSWs' intentions to always use condoms for vaginal sex with their main or regular partners. Since it has often been argued that women who engage in sex work primarily to support a drug habit are very different to those who engage in sex work for other (although often still financial) reasons, the target populations for this investigation are: (a) females who are at risk of HIV/STD transmission and acquisition primarily because of commercial sex work (CSWonly), and (b) females who are at risk because of both commercial sex work and injecting drug use (CSW/IDUs). Women were identified as being commercial sex workers if they reported exchanging sex for drugs or money with both regular and casual clients or with at least six regular or at least six casual clients in their lifetime (see Montano *et al.*). In addition, the women were identified as IDUs if they had injected illicit drugs within the past six months.

Generally speaking, it seems reasonable to expect that, compared to CSWonly, CSW/IDUs will have weaker intentions to practise safe sex, will have more negative attitudes toward always using a condom for vaginal sex with their regular partner, and will perceive they have less control over condom use. Following the procedures outlined by von Haeften *et al.* (2001), the utility of a revised integrated model for predicting and understanding the CSWs' condom use intentions with respect to their main (or regular) partners will be investigated. More specifically, the extent to which attitudes, subjective norms, partner norm, perceived behavioural control and the mean of weighted control beliefs can explain CSWs' condom use intentions will be assessed. Based on this determinant analysis, weighted beliefs

underlying significant psychosocial constructs will be examined in order to identify the critical target variables for interventions designed to increase condom use in these two populations.

Demographics

The sample consisted of 172 female CSWs, with 73 being CSWonly and 99 CSW/IDUs. The main demographic differences between these two populations were associated with age and ethnic composition. CSWonly were significantly younger ($M = 30.71$, $SD = 6.54$) than CSW/IDUs ($M = 34.28$, $SD = 5.73$, $p < 0.001$). In addition, while both groups of CSWs were predominantly African American and Caucasian, CSWonly were mainly African American (65%; 26% Caucasian), while CSW/IDUs were comprised of somewhat more Caucasian (49.5%) than African American women (41.4%).

Although 55.6% of the CSW/IDUs and 54.7% of the CSWonly reported that their family of origin was in the middle, upper middle or upper income brackets, the majority of the sex workers referred to themselves as being in the lower-income bracket (76.8 %; 78.1% for CSW/IDUs and CSWonly, respectively). CSWonly reported a slightly (but not significantly) higher mean personal annual income ($30,123.60; median = $17,438.00) than CSW/IDUs ($26,275.74; median = $16,000.00). When asked about the source of their income, 81.8% of the CSW/IDUs and 81% of the CSWonly said that some of their income came from illegal or possibly illegal sources. Approximately 70% of each group said that some of their income came from public assistance or government aid, and about 30% of each group reported some income from full-time, part-time or occasional work. Consistent with this, 88.9% of the CSW/IDUs and 78.1% of the CSWonly reported that they were currently unemployed.

The two groups of CSWs were also quite similar with respect to education and marital status. On average, CSWs' highest completed grade in school was 11.5, with 40.6% having less than a high school education and 25.6% having attended one or more years of college. Although 50% of the women had been married, only 5.2% were still married; 24.4% were divorced and 17.4% were separated. Consistent with this, only 4% of the women report currently living with a spouse and 17.4% report living with a significant other. In comparison to 63.2% of all other (i.e. non-CSW) women in Project SAFER, 91.3% of the CSWs report a current or prior pregnancy ($p < 0.001$), but only 27.3% of the CSWs are currently living in a household with children. These findings are consistent with the suggestion that adolescent pregnancy (and abortion) are often precursors to commercial sex work (see e.g. Alegria *et al.*, 1993; Potter *et al.*, 1999; Rodriguez *et al.*, 1999).

By definition, CSWonly cannot have injected drugs in the past six months. Nevertheless, 34.2% reported that they had injected non-prescription or street drugs at least once in their lifetime. In addition, 80.8% report that they had, at least once, exchanged sex for drugs. Interestingly, 80.8% of CSW/IDUs also reported having received drugs in exchange for sex. Among the CSW/IDUs, 65.7% indicated that heroin was their drug of choice and 25.3% most preferred cocaine. In addition, 69.2% of the CSW/IDUs report ever using crack or Pink Rock, with 33.3% reporting current crack use. Almost 90% of the CSW/IDUs have shared needles at least once in their lifetime, and 58% had shared a needle at least once during their last ten injections.

With respect to their sexual behaviours, CSW/IDUs and CSWonly are remarkably similar. There are, however, a few important differences. Most notably, CSW/IDUs were significantly older ($M = 14.52$) than CSWonly ($M = 13.32$, $p < 0.01$) at age of first sex. Unfortunately, but consistent with this, 18.2% of CSW/IDUs and a significantly higher 31.5% of CSWonly reported that they first had sexual intercourse at age 12 or younger

($p < 0.03$). It is worth noting that, in comparison to all other women in Project SAFER, commercial sex workers were significantly more likely to have first experienced sexual intercourse at age 12 or younger. More specifically, while 23.8% of all CSWs experienced sex at or before age 12, only 10.8% of non-CSWs were this young at age of first intercourse ($p < 0.001$). Given that most (if not all) intercourse at age 12 or younger is abusive, this finding is consistent with findings from other studies that indicate that sexual abuse is an important predictor for engaging in commercial sex work (see e.g. Simons & Whitbeck, 1991).

The second major difference between CSW/IDUs and CSWonly concerns their same sex behaviours. Although the two groups of women do not differ in their sexual preferences (63.6% of CSW/IDUs and 72.6% of CSWonly report they are exclusively interested in men), CSW/IDUs are significantly more likely to have had female sex partners (47.5% ever; 21.2% in the past three months) than are CSWonly (34.2% ever; 8.2% in the past three months; $p < 0.08$ and $p < 0.03$, respectively).

Although somewhat more CSWonly (43.8%) than CSW/IDUs (37.4%) report 1,000 or more lifetime partners, the two groups of women do not differ significantly with respect to either the number of lifetime sexual partners (CSW/IDUs: M = 4414, median = 369; CSWonly: M = 5340, median = 607) or with respect to the number of partners they have had in the past three months (CSW/IDUs: M = 24.4, median = 5; CSWonly: M = 19.6, median = 3). Nor do they differ with respect to the types of partner they have had. For example, considering the number of lifetime partners, CSW/IDUs have medians of five regular partners, eight occasional partners, 12 regular clients and 261 occasional clients. Quite similar to this, CSWonly report six regular partners, seven occasional partners, 14 regular clients and 390 casual clients. Considering just the past three months, CSW/IDUs report an average of 1.13 regular partners, 0.71 casual partners, 7.95 regular clients and 16.30 casual clients. Among CSWonly, the numbers were 1.17, 0.81, 2.71 and 15.47, respectively. Although it is not surprising that, in comparison to all other women in Project SAFER, CSWs have had a significantly higher absolute number of lifetime sexual partners, it is interesting to note that this is not due solely to the fact that they are trading sex. That is, in addition to clients, CSWs also report significantly more regular (M = 17.84) and casual (M = 61.75) lifetime partners than do non-CSWs (M = 7.04 and 12.37 for regular and casual lifetime partners, $p < 0.05$ and $p < 0.001$, respectively).

When asked about their sexual practices, commercial sex workers reported that they mostly engaged in vaginal and oral sex with partners and clients. When CSWs are with partners, vaginal sex is engaged in 94.3% of the time and oral sex occurs 45.3% of the time. Somewhat similar to this, when CSWs are with clients, vaginal sex occurs about 75% of the time and oral sex occurs about 45% of the time. Reported anal sex with both partners (1.0%) and clients (0.4%) is very low.

Consistent with previous findings, CSWs engage in relatively high rates of condom use (at least for vaginal sex) with their clients, but relatively low rates with their regular partners. Perhaps not surprisingly, all CSWs have used a condom at least once in their lifetimes. And while only 13.7% always use condoms for vaginal sex with their regular partner, 31.7% report always using condoms for vaginal sex with their occasional partners and well over half (56.1%) report always using condoms for vaginal sex with their clients.

A very similar pattern emerges with respect to condom use for oral sex. That is, while 8.5% of the CSWs always use condoms for oral sex with their main or regular partners, 20.9% always use them for oral sex with occasional partners and about 45% always use them for oral sex with their clients. Somewhat surprisingly, condoms are very rarely used for anal sex with either partners or clients. Fortunately, as indicated above, anal sex appears to be a

relatively rare event among these CSWs. When asked if they ever had experienced condom breakage or slippage, 53.6% of the CSW/IDUs and 61.4% of the CSWonly reported that they have had a condom break and 56.8% of CSW/IDUs and 64.3% of the CSWonly reported condom slippage.

Thus, despite relatively high rates of condom use with clients, many CSWs continue to be at risk for acquiring and transmitting STDs (including HIV). Consistent with this, the vast majority of CSWs have had one or more STDs in their lifetime. Somewhat surprisingly, but perhaps because of a greater (although not significantly greater) number of partners, CSWonly were significantly more likely ($p < 0.04$) to report a prior STD (83%) than were CSW/IDUs (73.5%). With respect to HIV, 91.8% of the women had been tested for HIV, and of these, 84.1% were HIV-negative, 1.9% were HIV-positive and the remaining 14% reported that they did not get their test results.

Mean differences on the psychosocial determinants underlying condom use for vaginal sex with a main (or regular) partner

As reported by von Haeften *et al.* (2000), and consistent with their self-reported behaviours, almost 85% of all CSWs in Project SAFER held strong intentions to always use condoms for vaginal sex with their clients, but less than 30% had formed strong intentions with respect to condom use with their regular partners. Indeed, as can be seen in Table 1, on average, both CSW/IDU (M = −0.66) and CSWonly (M = −0.55) held negative condom use intentions (i.e. they intended to *not* always use condoms for vaginal sex with their regular (or main) partners). Table 1 also shows that, similar to the findings with respect to demographic and prior behavioural variables, CSWonly and CSW/IDUs are also very similar with respect to all eight psychosocial determinants that theoretically underlie condom use behaviour. Indeed, in marked contrast to expectations, CSW/IDUs and CSWonly, have very similar intentions, attitudes, norms and perceived behavioural control with respect to always using a condom for vaginal sex with their regular partners. Given that there are almost no demographic, behavioural or psychosocial differences between these two groups, there is little reason to assume that CSW/IDUs and CSWonly will need different interventions to increase their condom use with their main (or regular) partners. Before accepting this hypothesis however, it is necessary to see if, in these two groups, the revised integrated model predicts condom use behaviours equally well.

Table 1. *Mean differences between CSW (only) and CSW/IDU on the underlying determinants*

	CSW only	CSW/IDU
Intention (−3 to +3)	−0.55	−0.66
Attitude (−3 to +3)	0.63	0.36
Σ(BE)/n (−9 to +9)	1.9	1.5
Subjective norm (−3 to +3)	1.43	1.12
Σ(NbMc)/n (−21 to +21)	10.96	10.29
Perceived behavioural control (−3 to +3)	1.48	1.39
Σ(CbPp)/n (−30 to +30)	5.40	6.20
Regular partner norm (−3 to +3)	−0.99	−0.62

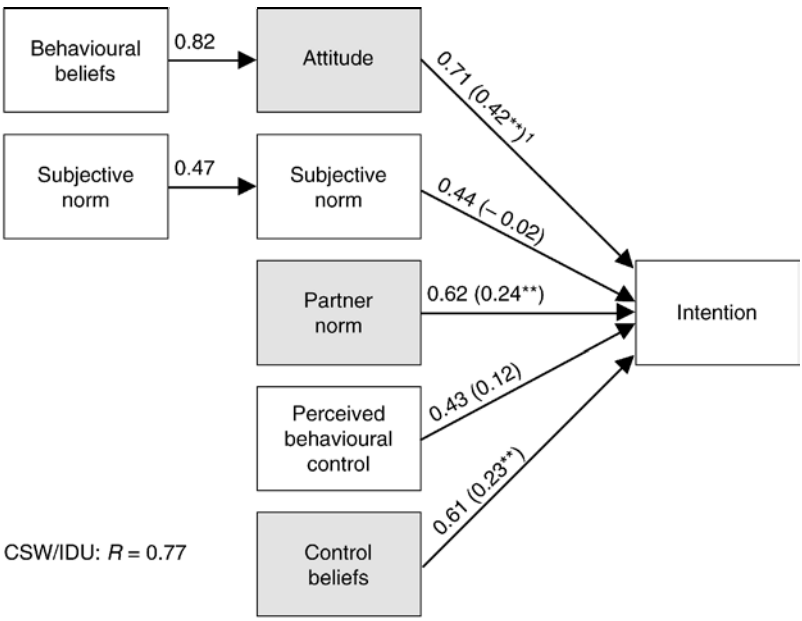
Test of the theoretical model

Following the analytic procedure described by von Haeften *et al.* (2001), Table 2 presents the results of the *correlational analyses* among all eight psychosocial variables comprising the revised integrative model. As can be seen in the table, for both CSWonly and CSW/IDUs, all seven of the direct and indirect determinants are significantly correlated with intention. In addition, for both groups, the mean of the weighted behavioural beliefs (i.e. Σ[be]/n) were significantly correlated with attitude ($r = 0.79$, $r = 0.82$ for CSWonly and CSW/IDUs, respectively) and the mean of the weighted normative beliefs (i.e. Σ[NbMc]/n) were significantly correlated with the subjective norm ($r = 0.45$ (CSWs only); $r = 0.47$ (CSW/IDUs)). These findings indicate that formative research was much more successful in identifying salient outcomes than in identifying relevant referents. Table 2 also shows that perceived behavioural control and the mean of the weighted control beliefs (i.e. Σ[CbPp]/n) were only moderately correlated ($r = 0.24$ (CSWonly); $r = 0.28$ (CSW/IDUs)), confirming the decision to include both of these variables as direct determinants of intention in the revised theoretical model.

The determinant regression analayses

Since in both groups of CSWs, all five of the direct determinants (i.e. attitude, subjective norm, partner norm, perceived behavioural control and the mean of the weighted control beliefs) were significantly correlated with the women's intentions to always use condoms for vaginal sex with their regular partners, all five were entered as predictors of the women's intentions in a stepwise regression.

As can be seen in Figures 1 and 2, and relatively unexpected given the similarity in



1 All correlations significant with $p < 0.01$; beta weights in parentheses.
** $p < 0.01$.

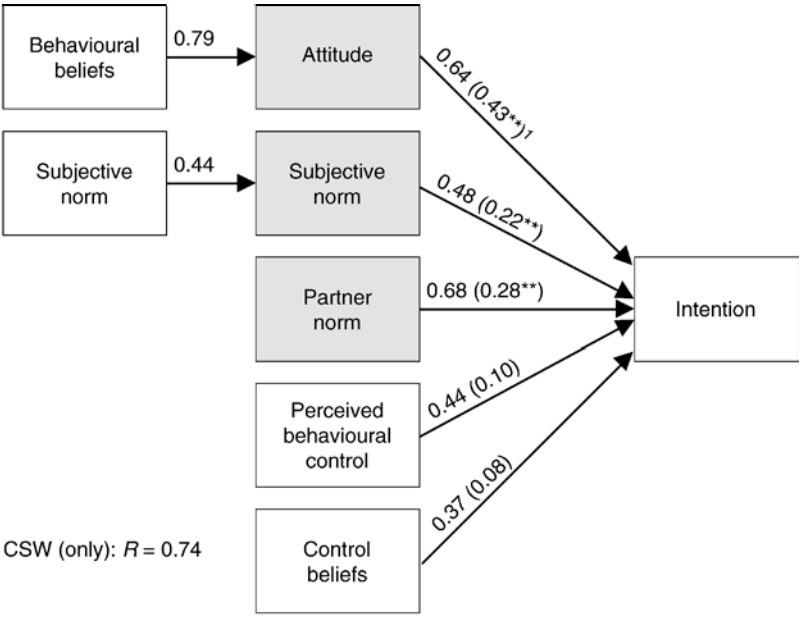
FIG. 1. *Model explaining CSW/IDUs' condom use intentions.*

Table 2. *CSW only and CSW/IDUs correlations of the behavioural determinants with intention*

	Intention	Attitude	Mean weighted belief Σ (be)/n	Subjective norm	Mean weighted normative beliefs Σ (NbMC)/n	Perceived behavioural control (PBC)	Mean weighted control beliefs Σ (CbpP)/n	Partner norm (PN)
Intention	1.00	0.71**[2]	0.69**	0.44**	0.32**	0.43**	0.61**	0.62**
Attitude	0.64**[1]	1.00	0.82**	0.60**	0.37**	0.46**	0.61**	0.61**
Mean weighted belief Σ (be)/n	0.63**	0.79**	1.00	0.56**	0.44**	0.42**	0.67**	0.67**
Subjective norm	0.48**	0.29*	0.48**	1.00	0.47**	0.31**	0.45**	0.56**
Mean weighted normative beliefs Σ (NbMC)/n	0.30*	0.46**	0.50**	0.45**	1.00	0.26*	0.42**	0.47**
Perceived behavioral control (PBC)	0.44**	0.59**	0.42**	0.19	0.24*	1.00	0.28**	0.55**
Mean weighted control beliefs Σ (CbpP)/n	0.37**	0.43**	0.46**	0.19	0.15	0.24	1.00	0.44**
Partner norm (PN)	0.60**	0.50**	0.59**	0.46**	0.53**	0.25*	0.28*	1.00

** $p < 0.001$; * $p < 0.05$.

[1] CSW (only) under diagonal; [2] CSW/IDU above diagonal.



1 All correlations significant with $p < 0.01$; beta weights in parentheses.

FIG. 2. *Model explaining CSWonly' condom use intentions.*

psychosocial variables, somewhat different results were obtained for the two groups. For CSW/IDUs, attitude (beta = 0.42), partner norm (beta = 0.24) and the mean of the weighted control beliefs (beta = 0.23) were significant independent predictors of intention (see Figure 1). These three variables explained 58.5% of the variance *(R* = 0.77), about the same amount of variance as is accounted for when all five direct determinants were included in the regression equation.

Although attitude (beta = 0.43) and partner norm (beta = 0.28) are also significant independent predictors of intention among CSWonly, these women do not appear to be concerned with control issues, but instead, they appear to also independently consider the subjective norm (beta = 0.22). As can be seen in Figure 2, these three variables account for 55% of the variance *(R* = 0.74) in the CSWonly' intentions to always use condoms for vaginal sex with their regular partners. As was the case with CSW/IDUs, this is the same amount of variance as was explained when all five predictors are included in the regression equation. Despite the fact that the regression models for CSW/IDUs and CSWonly are somewhat different, the model led to very accurate predictions of the women's condom use intentions.

The individual indicator analyses

Since attitudes were important determinants of intention for both CSWonly and CSW/IDUs, in each group, the 32 weighted behavioural beliefs underlying attitude were correlated with intention. For CSWonly, 20 of the 32 were significantly correlated with the women's intentions; for CSW/IDUs, 25 of the 32 weighted behavioural beliefs were significantly related to intention (see Appendix). These significantly correlated weighted behavioural beliefs were then included as predictor variables in stepwise regressions.

For CSWonly, the individual indicator analysis identified four underlying weighted behavioural beliefs as significant, independent predictors of intention—the beliefs that always using condoms for vaginal sex with one's regular partner would: (1) make me feel more relaxed (beta = 0.30); (2) be physically uncomfortable or too tight for my partner (beta = 0.38); (3) cause my partner to think I don't trust him (beta = 0.26); and (4) decrease my sexual sensation (beta = 0.21).

For CSW/IDUs, only three weighted behavioural beliefs contributed independently to the explanation of the women's intentions to always use condoms for vaginal sex with their regular partners—the beliefs that using condoms: (1) makes me feel more relaxed (beta = 0.45); (2) is awkward and embarrassing (beta = 0.29); and (3) makes insertion easier (beta = 0.22).

Given that the means of the weighted control beliefs were independent predictors of CSW/IDUs' intentions, and that subjective norms were independent predictors of CSWonly' intentions, individual indicator analyses were conducted to identify the individual weighted control beliefs contributing to CSW/IDUs' intentions, and the individual weighted normative beliefs contributing to CSWonly' intentions. Thus, for CSW/IDUs, the eight weighted control beliefs were correlated with intention. Six of the eight correlations with intention were significant (see Appendix) and were therefore entered as predictors in a stepwise regression. Only one of the six, (i.e. the weighted control belief concerning the CSW/IDUs' perception of their regular partners' openness to using condoms (beta = 0.73)) made an independent contribution to the CSW/IDUs' intention to always use condoms for vaginal sex with their regular partners.

For CSWonly, the 14 weighted normative beliefs were correlated with intention, and only three correlations (i.e. those concerning my regular partner, my best friend and people like me) were significant (see Appendix). These three weighted normative beliefs then served as predictors of intention in a stepwise regression and only one contributed independently to the women's intention to always use condoms for vaginal sex with their regular partners. More specifically, CSWonly appear to independently consider their weighted normative belief concerning their regular partner (i.e. the weighted partner norm) in arriving at their intentions. Given that the determinant analysis had already identified the unweighted normative belief concerning the women's regular partner (i.e. the partner norm) as a potential target for an intervention, both the weighted and the unweighted partner norm were entered into the CSWonly *critical target analysis*.

In order to identify the critical target variables for interventions to increase condom use in the two populations engaging in commercial sex work, all identified underlying weighted beliefs as well as the partner norm and perceived behavioural control (when appropriate) were entered as predictors in a final stepwise regression analysis. Thus, for CSWonly, intentions were regressed on the partner norm, four weighted behavioural beliefs and one weighted normative belief. For CSW/IDUs, intention was regressed on the partner norm, three weighted behavioural beliefs and one weighted control belief.

More specifically, for CSWonly the weighted behavioural beliefs that condom use would: (1) make me feel more relaxed; (2) decrease my sexual sensation; (3) cause my partner to think I don't trust him; and (4) be uncomfortable or too tight for my partner; along with (5) the weighted normative belief concerning the regular partner; and (6) the partner norm, were used as predictors for intention.

For CSW/IDUs the relevant predictors of intention were the behavioural beliefs that condom use would: (1) make me feel more relaxed; (2) be awkward or embarrassing; and (3) will make insertion easier; along with (4) the weighted control belief that condom use was easier if the partner was open to the idea of using condoms; and (5) the partner norm.

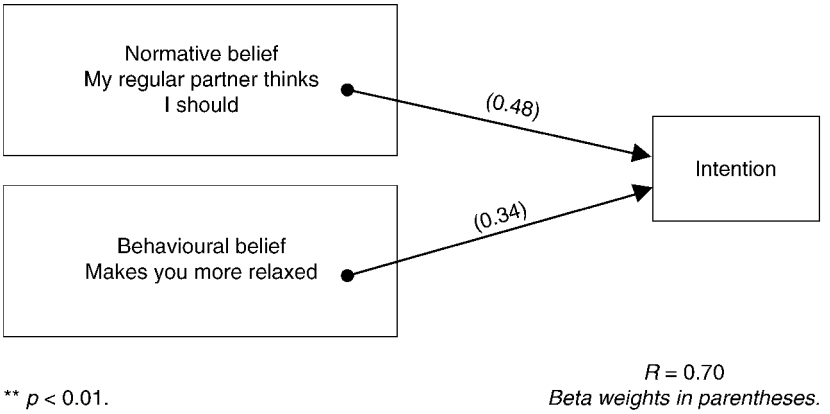


FIG. 3. *Critical targets for an intervention to increase CSWonly' condom use intentions.*

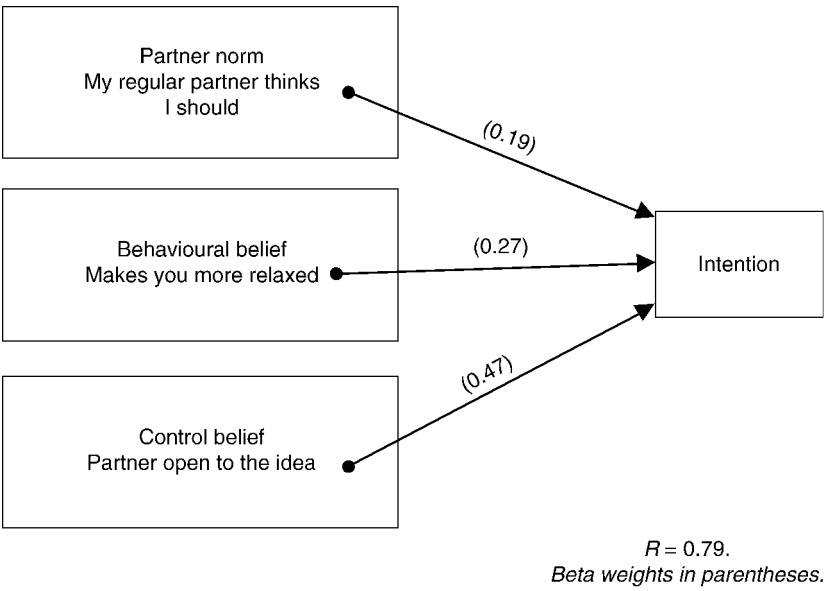


FIG. 4. *Critical targets for an intervention to increase CSW/IDUs' condom use intentions.*

It can be seen in Figures 3 and 4 that, although different predictors were entered in the two critical target regressions, fairly similar models explain both CSW/IDUs' and CSWonly' intentions to always use condoms for vaginal sex with their regular partners. For CSWonly, the weighted normative belief concerning one's regular partner (beta = 0.48) and the weighted behavioural belief that condom use will make me feel more relaxed (beta = 0.34), together account for 49% of the variance ($R = 0.70$) in their condom use intentions. Similarly, among CSW/IDUs, the partner norm (beta = 0.19), the weighted behavioural belief that condom use will make me feel more relaxed (beta = 0.27) and the weighted control belief concerning the partners' openness to the idea of using condoms (beta = 0.47) account for 63% of the variance ($R = 0.79$) in the women's intentions. Thus, three critical targets for CSW/IDUs and two critical targets for CSWonly account for about the same amount of

Table 3. *Correlation of intention with critical target beliefs and their associated weights—CSW only*

Behavioural Belief Content	Correlation with belief	Correlation with outcome evaluation
Make me feel more relaxed	0.54**	− 0.09
Normative belief content		Motivation to comply
My regular partner	0.60**	0.41**

** $p < 0.001$.

Table 4. *Correlation of intention with critical target beliefs and their associated weights—CSW/IDU*

Behavioural Belief Content	Correlation with belief	Correlation with outcome evaluation
Make me feel more relaxed	0.62**	− 0.03
Control belief content		Perceived power
Regular partner is open	0.65***	0.37**

** $p < 0.001$.

variance in the women's intentions to always use condoms for vaginal sex with their regular partners, as does a consideration of all five direct psychosocial determinants.

Finally, given that two of the three critical targets for CSW/IDUs were weighted beliefs, and that both critical targets for CSWonly were also weighted beliefs, it is important to determine whether the belief per se, its associated weight, or both were having the strongest influence on intention. In Tables 3 and 4 it can be seen that with respect to the weighted behavioural belief, for both CSW/IDUs and CSWonly, it is the behavioural belief per se and not the outcome evaluation that needs to be addressed. Interestingly, and consistent with the finding that the weighted normative belief concerning one's partner is a critical target for CSWonly, Table 3 shows that, for this group, both the normative belief (i.e. the partner norm) and the motivation to comply with one's regular partner are significantly related to intention. Similarly, among the CSW/IDUs, both the control belief per se and its associated perceived power can serve as critical targets for an intervention designed to increase their use of condoms with their regular partners.

Summary and conclusions

Although commercial sex workers and their clients have often been viewed as a critical core group for the transmission of HIV and other STDs, surprisingly little HIV transmission in the USA can be attributed to commercial sex work. To a large extent, this is probably due to a dramatic increase in CSWs' insistence that their clients always use condoms, particularly for vaginal sex. At the same time, however, female CSWs, like most other women, are much less likely to insist that their regular partners or spouses always use condoms than they are to insist upon condom use with their clients and casual partners. Given that CSWs report significantly more regular partners in their lifetimes than do non-CSWs, it seems reasonable

to assume that a potentially more important core group for HIV transmission may be CSWs and their 'main' or regular partners.

It is important to recognize, however, that not all CSWs are alike, and there is at least some evidence that condom use varies with the type of commercial sex work (e.g. street walkers, 'bar girls', 'call girls', those in first-class brothels) in which the women engage (see e.g. Levine *et al.*, 1998). In addition, it has often been suggested that women who are selling sex primarily to support a drug habit are very different from those who are selling sex for other reasons (e.g. they believe that they can make significantly more money through commercial sex work than through employment). Consistent with this distinction, it was expected that CSW/IDUs would be less likely to always use condoms with their regular partners than CSWonly. In addition, compared to CSWonly, CSW/IDUs were expected to have weaker intentions, more negative attitudes and to perceive less control with respect to condom use with their regular partners. In marked contrast to these expectations, CSW/IDUs were remarkably similar to CSWonly with respect to demographic, psychosocial and behavioural variables.

By definition, a major distinction between the two groups is that CSW/IDUs are current drug users, while CSWonly have not injected drugs for six months or more. In addition, compared to CSWonly, CSW/IDUs were significantly older, more likely to be Caucasian, less likely to have had prior STDs and more likely to have had female sexual partners. However, the two groups of women were similar with respect to education, the amount and source of their incomes and their marital status. In addition, the two groups didn't differ with respect to number of partners (both lifetime and in the past three months), type of sex or condom use. Even more surprising, the two groups of women perceived equal control over condom use, and they held similar beliefs, attitudes, perceived norms and intentions with respect to always using condoms for vaginal sex with their main (or regular) partners.

A consideration of these psychosocial variables led to very accurate predictions of both CSWonly' and CSW/IDUs' condom use intentions. More specifically, the revised integrative model accounted for 58.5% of the variance in CSW/IDUs' condom use intentions, and 55% of the variance in CSWonly' intentions. Interestingly, although attitude and the partner norm were important determinants of intention in both groups, CSWonly also appear to consider the normative proscriptions of 'their most important' others (i.e. the subjective norm), while CSW/IDUs seem to place additional weight on control considerations (i.e. on the mean of the weighted control beliefs). This latter finding provides at least some support for the hypothesis that issues of control are more important determinants of condom use among CSW/IDUs than among CSWonly.

A more detailed analysis of the weighted control beliefs comprising the control construct (i.e. $\Sigma(CbPp)/n$) revealed that the most critical weighted control belief influencing CSW/IDUs' intentions was the weighted control belief concerning their regular partners' openness to always using a condom for vaginal sex. Somewhat similar to this, a more detailed analysis of the weighted normative beliefs underlying the CSWonly' subjective norm revealed that their most important referent was their regular partner. Thus, given that the partner norm per se was also identified as a significant determinant of intentions, it is clear that both groups of CSWs seriously consider their regular partners' position on, and views concerning, condom use.

In addition, for both CSW/IDUs and CSWonly, there was only one critical underlying weighted behavioural belief. The more the women believed that always using a condom for vaginal sex with their main partner would make them feel relaxed, the stronger was their condom use intention. In sum, the most effective intervention for both CSW/IDUs and CSWonly would be one that tried to increase the women's beliefs that their regular partner

thought they should use condoms and that using condoms would make them feel more relaxed. In addition, it would be useful to increase the CSWonly' motivation to comply with their regular partner and the CSW/IDUs' beliefs that their regular partner was open to condom use and/or that having a partner who was open to condom use would make it easier for them to use condoms.

While, at least strategically, it appears relatively straightforward to develop an intervention directed at increasing CSWs' beliefs that consistent condom use for vaginal sex with their regular partner(s) will make them feel more relaxed, this is not the case for an intervention directed at increasing CSWs' beliefs that their regular partner is open to, and/or thinks they should, always use condoms. Clearly, how one tries to change these latter beliefs, will depend largely on where the CSWs' regular partners actually stand on these issues. If CSWs' regular partners are in fact open to, and supportive of, condom use (i.e. if the CSWs' perception of their partners' position was inaccurate), the intervention can be targeted directly at the women. For example, messages could be developed to increase their partner norm (i.e. their belief that their regular partner thinks they should always use condoms), either directly, via persuasive communications, or indirectly, e.g. by encouraging the women to discuss condom use with their partners. In addition, messages could be designed to increase the women's motivation to comply with their regular partner, their belief that their regular partner was open to condom use and/or their belief that having a partner who was open to condom use would make it easier for them to use condoms. On the other hand, if the CSWs' partners are truly opposed to condom use, it may be necessary to target the men directly. These and other strategic issues are considered by Fishbein *et al.* (2001).

Note

[1] It is important to recognize that statistics such as the above are likely to be underestimates since men appear to significantly under-report the purchase of commercial sex, particularly when asked using face-to-face or self-administered (versus computer-assisted) questionnaires (see e.g. Turner *et al.*, 1998).

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Appendix. *Correlations of CSWs' (only) and CSW/IDUs' behavioural beliefs × evaluations, beliefs, and evaluations with intention*

	CSW (only)			CSW/IDU		
Behavioural Beliefs	BE	B	E	BE	B	E
Theme: Other positive outcomes	**0.56**	**0.59**	**− 0.17 NS**	**0.64**	**0.65**	**− 0.05 NS**
Makes you relaxed	0.57	0.54	− 0.09 NS	0.63	0.62	− 0.03 NS
Makes partner relaxed	0.48	0.50	− 0.26	0.58	0.57	0.04 NS
Feels more clean	0.47	0.51	− 0.14 NS	0.50	0.43	0.05 NS
Sex less messy	0.08 NS	0.28	0.11 NS	0.16 NS	0.27	0.02 NS
Responsible thing to do	0.31	0.37	− 0.05 NS	0.30	0.35	− 0.03 NS
Show partner you care	0.30	0.36	− 0.20 NS	0.44	0.45	− 0.08 NS
Prolong sex	0.28	0.26	− 0.15 NS	0.20 NS	0.13 NS	− 0.05 NS
Makes insertion easier	0.43	0.40	0.05 NS	0.45	0.45	− 0.08 NS
Theme: Decreased pleasure	**0.40**	**− 0.44**	**0.17 NS**	**0.46**	**− 0.54**	**0.11 NS**
Decreases your sexual sensation	0.39	− 0.42	0.09 NS	0.34	− 0.43	− 0.01 NS
Decreases partner's sexual sensation	0.26	− 0.39	− 0.00 NS	0.26	− 0.41	− 0.13 NS
Makes sex less intimate	0.19 NS	− 0.33	0.31	0.41	− 0.49	0.08 NS
Makes sex less spontaneous	0.08 NS	− 0.11 NS	0.07 NS	0.06 NS	− 0.17 NS	0.14 NS
Disrupts your mood	0.31	− 0.36	0.09 NS	0.27	− 0.36	0.14 NS
Disrupts partner's mood	0.26	− 0.43	0.07 NS	0.42	− 0.49	0.12 NS
Feeling awkward	0.33	− 0.34	0.05 NS	0.52	− 0.55	0.12 NS
Theme: Ruin relationship	**0.33**	**− 0.28**	**0.22 NS**	**0.51**	**− 0.56**	**0.30**
Makes partner angry	0.31	− 0.21 NS	0.18 NS	0.51	− 0.51	0.04 NS
Partner thinks you don't trust	0.37	− 0.26	0.10 NS	0.41	− 0.42	0.21
Partner thinks you have STD	0.33	− 0.17 NS	0.12 NS	0.30	− 0.45	0.31
Partner thinks you think they have STD	0.25	− 0.23	0.24	0.42	− 0.47	0.23
Theme: Protection	**0.24**	**0.26**	**0.04 NS**	**0.44**	**0.37**	**0.24**
Prevents infection	0.14 NS	0.24	− 0.21 NS	0.10 NS	0.13 NS	0.08 NS
Protects partner from AIDS	0.24	0.23	0.02 NS	0.31	0.32	− 0.07 NS
Protects yourself from AIDS	0.21 NS	0.21 NS	− 0.03 NS	0.34	0.34	− 0.03 NS
Protects your partner from STDs	0.17 NS	0.16 NS	0.11 NS	0.35	0.33	0.04 NS
Protects yourself from STDs	0.25	0.24	− 0.03 NS	0.27	0.28	− 0.10 NS
Prevents pregnancy	0.15 NS	0.15 NS	0.14 NS	0.43	0.34	0.31
Theme: Other negative outcomes	**0.19 NS**	**− 0.37**	**0.30**	**0.21**	**− 0.39**	**0.23**
Costs money	0.03 NS	0.11 NS	0.14 NS	0.03 NS	0.07 NS	− 0.16 NS
Losing erection	0.12 NS	− 0.20 NS	− 0.04 NS	0.25	− 0.38	− 0.01 NS
Condom break	0.17 NS	− 0.15 NS	0.10 NS	0.16 NS	− 0.18 NS	0.21
Makes sex physically uncomfortable for you/partner	0.49	− 0.53	0.06 NS	0.21	− 0.38	0.06 NS
Makes sex too dry for you/partner	0.24 NS	− 0.37	0.05 NS	0.31	− 0.30	− 0.04 NS
No cumming inside/will not cum inside you	0.16 NS	− 0.19 NS	0.39	0.10 NS	− 0.06 NS	0.30
Treating partner like john (CSW)	0.37	− 0.58	0.00 NS	0.24	− 0.38	0.22

NS = not significant.

Correlations of CSWs only normative beliefs × motivation to comply, normative beliefs, and motivation to comply and CSW/IDUs' control beliefs × perceived power, control beliefs and perceived power with intention

	CSW only		
Normative Beliefs	NbMC	NB	MC
Social worker	0.11 NS	0.15 NS	− 0.01 NS
Mother/Grandmother	0.08 NS	0.13 NS	0.01 NS
Family	0.17 NS	0.20 NS	0.05 NS
Best friend	0.27	0.29	− 0.02 NS
Other friends	0.17 NS	0.27	− 0.05 NS
People with HIV	0.00 NS	0.23 NS	− 0.12 NS
Doctor/nurse	0.11 NS	0.16 NS	− 0.03 NS
People like me	0.26	0.33	0.02 NS
Famous people	0.12 NS	0.08 NS	0.04 NS
Community	0.12 NS	0.16 NS	0.06 NS
Churches	0.01 NS	0.05 NS	0.01 NS
Spiritual healer	− 0.01 NS	0.07 NS	− 0.20 NS
Media	− 0.03 NS	− 0.15 NS	0.04 NS
Main partner	0.64	0.60	− 0.41
	CSW /IDU		
Control beliefs	CbPp	Cb	Pp
Using alcohol	0.19 NS	0.11 NS	0.20
High on drugs	0.12 NS	0.11 NS	0.14 NS
Condoms available	0.41	0.37	0.24
Other birth control	0.36	0.03 NS	0.32
Partner open	0.73	0.65	0.37
Partner suggests	0.54	0.52	0.34
Hurry to have sex	0.24	0.10 NS	0.19 NS
Sex in usual place	0.29	− 0.06 NS	0.32

NS = not significant.