

# Reasons for Inconsistent Condom Use among Female Sex Workers: Need for Integrated Reproductive and Prevention Services

Josephine Aho, PhD, Post-doctoral Fellow, Institute of Tropical Medicine  
Antwerp, Belgium

Anita Koushik, PhD, Associate Professor, School of Public Health, Université de Montréal  
Montreal, Canada

Selim Rashed, MD, Professor, Faculty of Medicine, Université de Montréal  
Montreal, Canada

Correspondence may be directed to: Josephine Aho, 1021 Amherst, Montreal, QC H2L 3K3,  
Canada; Tel.: 1-514-733-3015, E-mail address: josephine.aho@umontreal.ca.

## Abstract

**Background:** Interventions for condom use promotion have been undertaken for HIV prevention among female sex workers (FSWs). Our aims are to (1) assess the frequency of inconsistent condom use with clients and with the main regular non-client sex partner (RNCP); and (2) investigate factors associated with inconsistent condom use with the RNCP, particularly the desire to have children and links of the RNCP with commercial sex work.

**Methods:** A cross-sectional study was conducted in Conakry, Guinea, among 223 FSWs. A questionnaire on socio-demographic characteristics, behaviours and desire for children was administered. Descriptive statistics and logistic regression were performed.

**Results:** Inconsistent condom use was frequent with the RNCP but rare with the clients (80.4% vs. 1.3%). FSWs' desire for children was strongly associated with inconsistent condom use with the RNCP.

**Conclusion:** Interventions that take into account reproductive health are needed to prevent HIV among FSWs and their children.

## **Introduction**

Female sex workers (FSWs) are a vulnerable population with a high risk of HIV infection in several developing countries that have primarily heterosexual epidemics. Prevention of HIV in this population, which has an extended sexual network, is of paramount importance, particularly in countries of low general population prevalence where this high-risk group may contribute greatly to the national incidence (Boily et al. 2002; Godin et al. 2008).

Apart from structural ones, interventions aimed at preventing HIV among this high-risk population are threefold: (1) condom use promotion, (2) screening and treating sexually transmitted infections (STIs), and (3) voluntary counselling and testing (VCT) promotion (Shahmanesh et al. 2008). Condom use promotion includes, in particular, the distribution of condoms and condom use negotiation (Feldblum et al. 2005; Foss et al. 2007).

Interventions aimed at increasing condom use among FSWs have targeted mainly FSWs and their male clients and have been successful at increasing condom use in commercial partnerships (Foss et al. 2007; Lowndes et al. 2000). However, risky sexual behaviour among FSWs may differ according to partner type. For example, while some studies have reported high rates of condom use ranging from 80 to 100% when considering FSWs and their client partners, (Alary et al. 2002; Cote et al. 2004), others have shown that FSWs tend to use condoms less frequently with their regular non-client sex partners (RNCPs) (Ulibarri et al. 2012; Wong et al. 2003). One factor contributing to non-condom use that has been extensively examined among HIV-positive individuals is the desire for children (Myer et al. 2007; Nattabi et al. 2009). However, this factor has not been studied in high-risk populations such as FSWs. Moreover, literature is scarce on the extent of RNCP participation in commercial sex and the impact of participation on the frequency of condom use between an FSW and her RNCP.

In the context of a cross-sectional study on VCT among FSWs in Conakry, Guinea, we examined the frequency of inconsistent condom use with clients and with RNCPs among the participants, and we investigated factors associated with inconsistent condom use with RNCPs.

## **Methods**

### **Study Population**

In 2005–2006, we conducted an investigation of the acceptability and consequences of VCT of HIV in a cohort of 421 FSWs in Conakry, Guinea (Aho et al. 2012). Participants in this study were initially recruited at three private or public health centres with adapted healthcare (AHC) for FSWs in Conakry. To avoid stigma, AHC services offer medical care and assistance adapted to the specific needs of FSWs and are integrated into antenatal clinics or general healthcare. These AHC services were implemented in collaboration with the West Africa AIDS program (AIDS 3), a Canadian program aimed at HIV prevention through syndromic control of STIs for FSWs and their partners, and promoting health in the community (Morin et al. 2008). Any woman practising commercial sex work, defined as self-reported history of sexual relations in exchange for money, in the month preceding her visit to the AHC was eligible for the study. The baseline prevalence of HIV in our study population was 38.1% (Aho et al. 2012). One year after recruitment, a second follow-up visit took place, with further data collection. A total of 223 women participated in this follow-up visit, and the prevalence of HIV was 35.3% at follow-up. We present in this article data drawn from this visit. The study was reviewed and accepted by the Committee for Research Ethics of the University of Montreal and by the National Committee of Ethics of Guinea. All subjects provided informed consent before participating in the study. Participating women received financial compensation for their transport and interview time. Free condoms and lubricants were distributed to them.

### **Data Collection Procedures**

Data collection for the follow-up visits took place from June to December 2006 in the three AHC

centres in Conakry as well as in worksites (bars, brothels and nightclubs). Information on socio-demographic characteristics, variables related to sex work, behavioural variables and variables related to exposure to preventative interventions was collected in face-to-face interviews. All interviewers, most of whom were health agents, were specifically trained for this study. Characteristics of participants in the follow-up visit did not differ significantly from those who participated at initial enrolment (Aho et al. 2012).

### Variables and Variables Definitions

Our questionnaire included the questions (1) “How often did you use condoms for sex with your main RNCP in the past three months?” and (2) “How often did you use condoms for sex with your clients in the last week?” Using this data, we defined two variables: (1) consistency of condom use with the RNCP, defined as having always used a condom in sexual encounters with the RNCP in the preceding three months, and (2) consistency of condom use with clients, defined as having always used a condom in sexual encounters with clients during the preceding one week. We analyzed inconsistent condom use with the RNCP or with clients as dichotomous (yes vs. no) variables.

In addition to examining frequency of inconsistent condom use, we also investigated factors associated with inconsistent condom use with the RNCP in the preceding three months. Independent variables that were investigated included age (continuous), current attempts toward pregnancy (dichotomous: yes or already pregnant vs. no), the FSW’s desire for children (dichotomous: yes vs. no), the RNCP’s desire for children (dichotomous: yes vs. no), parity (dichotomous: 0 vs. 1), duration of the relationship with the RNCP (categorical:  $\leq 12$  months,  $>12$  months), awareness by the RNCP that his partner is an FSW, as reported by the FSW (dichotomous: yes vs. no), RNCP being a client at his partner’s worksite (dichotomous: yes vs. no), self-perception of HIV risk (dichotomous: low to intermediate vs. high or already HIV-positive). All of these variables were measured in the questionnaire administered to the FSW.

### Analyses

To describe the study population, proportions, means and standard deviations (SD) were calculated. For the first objective, prevalence estimates of inconsistent condom use with the RNCP and with clients were calculated. For the second objective, variables associated with inconsistent condom use with the RNCP among participants who had one were explored using logistic regression. Crude prevalence odds ratios (PORs) and their 95% confidence intervals (CIs) were calculated. All variables associated with inconsistent condom use at  $p < 0.25$  in the bivariate analyses were included in a multivariate logistic regression analysis. Adjusted PORs and their 95% CI were determined. SPSS 17.0 was used for statistical analysis.

## Results

### Characteristics of the Study Population

A total of 223 subjects participated in the study. Participants’ age ranged from 16 to 46 years (mean: 27.1 years, SD: 6.1 years). Most of the women (109/223, 48.9%) were divorced, separated or widowed; 7.2% were married and 43.9% single. Mean duration of sex work was 30 months, and FSWs reported a mean of 25.0 clients in the week preceding their interview (SD = 12.1). The mean monthly income of FSWs was 88.9 US dollars (SD = \$32.6). A majority of participants (168/223, 75.3%) currently had one or more RNCPS (Table 1). Other characteristics of the population are presented in Table I.

Table 1. Characteristics of the study population

Variables	N (%) <sup>a</sup>	
	All participants (n = 223)	Participants with an RNCP (n = 168)
<b>Socio-demographic variables</b>		
Age, mean (SD)	27.1 (6.1)	26.2 (5.5)
<b>Marital status</b>		
Single	98 (43.9)	85 (50.6)
Divorced, separated, widowed	109 (48.9)	69 (41.1)
Married	16 (7.2)	14 (8.3)
Monthly income in USD, mean (SD)	88.9 (32.6)	86.2 (32.4)
<b>Number of regular non-client partners</b>		
0	55 (24.7)	–
≥1	168 (75.3)	168 (100.0)
<b>Parity</b>		
0	50 (22.4)	139 (23.2)
≥1	173 (77.6)	129 (76.8)
<b>Prior abortion</b>		
No	176 (78.9)	132 (78.6)
Yes	47 (21.1)	36 (21.4)
<b>Sex work and behaviour</b>		
Duration of sex work		
≤ 24 months	142 (64.8)	105 (64.0)
> 24 months	77 (35.2)	59 (36.0)
Number of clients in the preceding week, mean (SD)	25.0 (12.1)	24.6 (12.1)
<b>Violence episode from a client in the preceding three months</b>		
No	169 (76.1)	124 (74.3)
Yes	53 (23.9)	43 (25.7)
<b>Inconsistent condom use with clients in the preceding week</b>		
No	220 (98.7)	166 (98.8)
Yes	3 (1.3)	2 (1.2)
<b>Alcohol consumption</b>		
No	118 (52.9)	84 (50.0)
Yes	105 (47.1)	84 (50.0)
<b>Perceived HIV risk and HIV serostatus</b>		
<b>Self-perceived risk of HIV infection</b>		
Low to intermediary	136 (61.0)	106 (63.1)
High or HIV positive	87 (39.0)	62 (36.9)
<b>HIV serostatus</b>		
Negative	143 (64.7)	113 (68.1)
Positive	78 (35.3)	53 (31.9)
<b>RNCP is a customer in the FSW's worksite</b>		
Yes	–	7 (4.2)
No		161 (95.8)

Table 1. Continued

Variables	N (%) <sup>a</sup>	
	All participants (n = 223)	Participants with an RNCP (n = 168)
<b>RNCP works at the FSW's worksite</b>		
Yes	–	32 (19.0)
No		136 (81.0)
<b>FSW's desire for children with her RNCP</b>		
No	–	118 (70.7)
Yes		49 (29.3)
<b>RNCP's desire for children with the FSW</b>		
No	–	69 (41.3)
Yes		98 (58.7)
<b>Current attempts toward pregnancy</b>		
No	179 (80.3)	126 (75.0)
Yes or already pregnant	44 (19.7)	42 (25.0)
<b>Inconsistent condom use with the RNCP in the preceding three months</b>		
No	–	32 (19.2)
Yes		135 (80.4)

FSW = female sex worker; RNCP = regular non-client sex partner; SD = standard deviation; USD = US dollars.

<sup>a</sup> Except for continuous variables (age, monthly income, number of clients) for which means and standard deviations are presented.

### Prevalence of Inconsistent Condom Use

The prevalence of inconsistent condom use with clients was rare (3/223, 1.3%). Conversely, among participants who reported having an RNCP, the prevalence of inconsistent condom use was frequent (135/168, 80.4%). All women stated that consistent condom use can prevent HIV acquisition (223/223, 100%). The majority of FSWs said that women can protect themselves from acquiring an STI from an infected partner by asking for condom use during the infection (203/223, 91.0%).

### Factors Associated with Inconsistent Condom Use with the RNCP

Almost half of RNCPs were reportedly aware that their partner was a sex worker (72/167, 43.1%, Table 1). A fifth of RNCPs were regular clients in their partner's worksite (32/168, 19.0%) (Table 1). However, neither of these variables, nor age, was associated with inconsistent condom use in bivariate analysis (Table 2). On the other hand, current attempts toward pregnancy and desire for children from the FSW or her RNCP, as well as self-perception of HIV risk, were strongly associated with inconsistent condom use (Table 2). In multivariate analysis, we did not include current attempts toward pregnancy because of its co-linearity with the FSW's desire for children. In the multivariate model, only the FSW's desire for children remained statistically significantly associated with inconsistent condom use with the RNCP (OR = 13.60, 95% CI = 1.66–111.37).

Table 2. Factors associated with inconsistent condom use with the RNCP among FSWs who have one (n = 167)

Variables	Inconsistent condom use N (%) <sup>a</sup>	Crude OR (95% CI)	P-value	Adjusted OR (95% CI)
Age, mean (SD)	26.0 (5.2)	0.97 (0.91–1.04)	0.429	–
Monthly income in USD, mean (SD)	87.7 (22.3)	1.13 (0.88–1.46) <sup>b</sup>	0.339	–
<b>Current attempts toward pregnancy</b>				
No	95 (75.4)	1.00 (reference)		–
Yes or currently pregnant	40 (98.0)	6.32 (1.44–27.70)	0.015	
<b>FSW's desire for children with her RNCP</b>				
No	86 (72.9)	1.00 (reference)		.00 (reference)
Yes	48 (98.0)	17.30 (2.29–130.74)	0.006	13.60 (1.66–111.37) <sup>c</sup>
<b>RNCP's desire for children with the FSW</b>				
No	47 (68.1)	1.00 (reference)		1.00 (reference)
Yes	87 (88.8)	3.53 (1.57–7.95)	0.002	1.36 (0.55–3.41)
<b>Parity</b>				
≥ 1	103 (79.8)	1.00 (reference)		
0	32 (82.0)	1.11 (0.44–2.80)	0.826	–
<b>Prior abortion</b>				
No	104 (79.4)	1.00 (reference)		
Yes	31 (86.1)	1.61 (0.57–4.53)	0.367	–
<b>Duration of the relationship with the main RNCP</b>				
≤ 12 months	44 (73.3)	1.00 (reference)		1.00 (reference)
> 12 months	91 (84.3)	2.07 (0.95–4.51)	0.068	2.19 (0.94–5.10)
<b>Main RNCP's awareness of his partner FSW's sex-worker status</b>				
Yes	57 (79.2)	1.00 (reference)		
No	78 (82.1)	1.28 (0.59–2.81)	0.533	–
<b>RNCP is a customer in the FSW worksite</b>				
Yes	24 (75.0)	1.00 (reference)		
No	111 (81.6)	1.54 (0.62–3.84)	0.353	–
<b>Self-perceived risk of HIV infection</b>				
Low to intermediary	80 (75.5)	1.00 (reference)		1.00 (reference)
High or HIV positive	55 (90.2)	2.98 (1.15–7.72)	0.020	2.45 (0.87–6.95)
<b>HIV serostatus</b>				
Negative	93 (83.0)	1.00 (reference)	0.383	–
Positive	41 (77.4)	0.70 (0.31–1.57)		

CI = confidence interval; FSW = female sex worker; OR = odds ratio; RNCP = regular non-client sex partner; SD = standard deviation; USD = US dollar.

<sup>a</sup> Except for continuous variables (age, monthly income, number of clients) for which means and standard deviations are presented.

<sup>b</sup> OR calculated for an increase of 20 dollars in income (approximately corresponding to the income SD).

<sup>c</sup> Current attempts toward pregnancy were not included in the multivariate analysis because of a strong co-linearity with desire for children.

\* p < 0.05.

## Discussion

Our study aimed to explore factors associated with condom use. We found that the FSW's desire for children was strongly associated with inconsistent condom use.

This study has shown that a high number of clients as well as a high desire to have children are both part of the reality of this population of FSWs. RNCs can work or be a client in the sex worksite. Getting married and motherhood could be seen as a means to escape sex work (Mantoura et al. 2003).

As reported elsewhere in the literature (Alary et al. 2002; Cote et al. 2004; Ulibarri et al. 2012; Wong et al. 2003), condom use by FSWs was more frequent with clients than with RNCs in our study. Generally, RNCs of FSWs have been less studied or targeted by HIV/STI interventions than clients of FSWs. However, Lowndes et al. (2002) reported that almost half of RNCs were involved in their girlfriend's work, and 66% had other regular sex partners besides their FSW partner, 11% of whom were also FSWs. In fact, our study showed that almost half of RNCs were aware of the FSW status of their partner and more than one fifth of RNCs were either regular customers in their partner's worksite or worked at the bars. This may lead to a higher risk of HIV infection among RNCs. A study has shown that HIV prevalence among RNCs was twice that of the clients' (Lowndes et al. 2002).

Our findings highlight the fact that commercial and non-commercial sex relations are not two separate worlds. Stoebenau (2009) reported from an ethnographic study conducted in Madagascar that the distinction between RNCs and clients did not exist for some FSWs. The relationship between clients and FSWs is dynamic, and when affective ties appear in the relationship, condom use may be less appealing. In our study, the association between longer duration of the relationship with the partner and reporting less condom use almost reached statistical significance. Ties of the RNC with the FSW worksite had no impact on consistency of condom use. More importantly, the FSW's desire to have children was strongly associated with inconsistent condom use with the RNC. However, despite the high baseline prevalence of HIV of 38.1%, only one fourth of the enrolment sample had undergone an HIV test before the study and only 12% of seropositive FSWs were on antiretroviral therapy (Aho et al. 2012). These results show the importance of taking reproductive health into account while designing HIV preventive interventions, as has been the case in positive prevention programs. In studies of serodiscordant couples, it has been shown that despite recommendations to use condoms to avoid HIV transmission, the desire for children was an important factor to take into account (Myer et al. 2007; Nattabi et al. 2009; Oladapo et al. 2005). Reproductive health services aimed at FSWs may also be useful as part of prevention of HIV transmission from mother to child in this highly infected population at child-bearing age.

The intertwining relationship between sex work and non-sex work makes prevention particularly challenging when it comes to promoting condom use and reproductive health, including prevention of mother-to-child HIV transmission. As the high STI burden experienced by FSWs can impair their fertility (Westrom 1994), the duration of attempts toward pregnancy by non-condom use could be long, increasing risks of HIV transmission. Thus, condom use promotion should be a part of a comprehensive strategy for sexual and reproductive health in FSWs. Such a holistic approach should integrate STI/HIV prevention and reproductive health matters, including relationships with an RNC. This strategy, which could take place in settings already attended by FSWs, such as the AHC, should be implemented for this population and their sexual partners to deal with sex-work and non-sex-work issues as those two worlds are frequently not easy to demarcate. It should be aimed at RNCs as well as at FSWs.

This study has several limitations. First, the cross-sectional data collection may have prevented us from capturing the temporality for some associations such as condom use and desire for children. Second, the recall of some variables may be inaccurate, but the relatively short period of recall (less than three months) required for most variables may have contributed to minimizing recall error. Third, some data on RNCs, such as their desire for children, was collected from FSWs and not from the partner himself. This indirect reporting may be inaccurate and may

overestimate the desire, especially when the FSW herself has a desire for children. Last, the limited sample size of this study led to low precision of some estimates and may have led to a failure to detect some associations.

However, our study is one of the first, to our knowledge, to assess associations between condom use, desire for children and participation of the RNCP in the sex work.

## Conclusions

In conclusion, our results show that condom use by FSWs is a complex sexual health matter that relates not only to HIV prevention but also to reproductive health. Thus, condom use should be approached in a holistic manner to achieve a comprehensive and effective strategy to fight HIV in populations most at risk.

## Acknowledgements

We declare no conflict of interest. We gratefully acknowledge funding support from International Development Research Center (IDRC), Canadian Institutes for Health Research (CIHR) and Analyse et Évaluation des Interventions en Santé Chair of the Université de Montreal (AnÉIS). We also wish to thank Vinh-Kim Nguyen for his insights as well as our research partners in Conakry (SIDA3, INSPQ, FMG and Madina health centres) for contributing to this study.

## References

- Aho, J., V.K. Nguyen, S. Diakite, A. Sow, A. Koushik and S. Rashed. 2012. "High Acceptability of HIV Voluntary Counselling and Testing among Female Sex Workers: Impact of Individual and Social Factors." [Research Support, Non-U.S. Gov't]. *HIV Medicine* 13(3): 156–65. doi: 10.1111/j.1468–1293.2011.00951.x
- Alary, M., L. Mukenge-Tshibaka, F. Bernier, N. Geraldo, C.M. Lowndes, H. Meda et al. 2002. "Decline in the Prevalence of HIV and Sexually Transmitted Diseases among Female Sex Workers in Cotonou, Benin, 1993–1999." *AIDS* 16(3): 463–70.
- Boily, M.C., C. Lowndes and M. Alary. 2002. "The Impact of HIV Epidemic Phases on the Effectiveness of Core Group Interventions: Insights from Mathematical Models." *Sexually Transmitted Infections* 78(Suppl 1): i78–90.
- Cote, A.M., F. Sobela, A. Dzokoto, K. Nzambi, C. Asamoah-Adu, A.C. Labbe et al. 2004. "Transactional Sex Is the Driving Force in the Dynamics of HIV in Accra, Ghana." *AIDS* 18(6): 917–25. doi: 00002030–200404090–00009 [pii]
- Feldblum, P.J., T. Hatzell, K. Van Damme, M. Nasution, A. Rasamindrakotroka and T.W. Grey. 2005. "Results of a Randomised Trial of Male Condom Promotion among Madagascar Sex Workers." *Sexually Transmitted Infections* 81(2): 166–73. doi: 10.1136/sti.2004.010074
- Foss, A.M., M. Hossain, P.T. Vickerman and C.H. Watts. 2007. "A Systematic Review of Published Evidence on Intervention Impact on Condom Use in Sub-Saharan Africa and Asia." *Sexually Transmitted Infections* 83(7): 510–6. doi: 10.1136/sti.2007.027144
- Godin, G., A. Tinka Bah, A. Sow, I. Minani, D. Morin and M. Alary. 2008. "Correlates of Condom Use among Sex Workers and Their Boyfriends in Three West African Countries." *AIDS and Behavior* 12(3): 441–51. doi: 510–6. doi: 10.1007/s10461–007–9296–6
- Lowndes, C.M., M. Alary, C.A. Gnintoungbe, E. Bedard, L. Mukenge, N. Geraldo et al. 2000. "Management of Sexually Transmitted Diseases and HIV Prevention in Men at High Risk: Targeting Clients and Non-paying Sexual Partners of Female Sex Workers in Benin." *AIDS* 14(16): 2523–34.
- Lowndes, C.M., M. Alary, H. Meda, C.A. Gnintoungbe, L. Mukenge-Tshibaka, C. Adjovi et al. 2002. "Role of Core and Bridging Groups in the Transmission Dynamics of HIV and STIs in Cotonou, Benin, West Africa." *Sexually Transmitted Infections* 78(Suppl 1): i69–77.
- Mantoura, P., P. Fournier and D. Campeau. 2003. "Maladies Sexuellement Transmissibles, Sida et Prostitution: Une étude de cas en Guinée-Conakry." *Santé publique* 15(2): 223–33.
- Morin, D., G. Godin, M. Alary, M.R. Sawadogo, M. Bernier, N. Khonde et al. 2008. "Satisfaction with Health Services for STIs, HIV, AIDS among a High-Risk Population in West Africa." *AIDS Care* 20(3): 388–94. doi: 10.1080/09540120701583761
- Myer, L., C. Morroni and K. Rebe. 2007. "Prevalence and Determinants of Fertility Intentions of HIV-Infected Women and Men Receiving Antiretroviral Therapy in South Africa." *AIDS Patient Care and STDs* 21(4): 278–85. doi: 10.1089/apc.2006.0108



- Nattabi, B., J. Li, S.C. Thompson, C.G. Orach and J. Earnest. 2009. "A Systematic Review of Factors Influencing Fertility Desires and Intentions among People Living with HIV/AIDS: Implications for Policy and Service Delivery." *AIDS and Behavior* 13(5): 949–68. doi: 10.1007/s10461-009-9537-y
- Oladapo, O.T., O.J. Daniel, O.L. Odusoga and O. Ayoola-Sotubo. 2005. "Fertility Desires and Intentions of HIV-Positive Patients at a Suburban Specialist Center." *JAMA* 293(12): 1672–81.
- Shahmaneh, M., V. Patel, D. Mabey and F. Cowan. 2008. "Effectiveness of Interventions for the Prevention of HIV and Other Sexually Transmitted Infections in Female Sex Workers in Resource Poor Setting: A Systematic Review." *Tropical Medicine and International Health* 13(5), 659–79. doi: 10.1111/j.1365-3156.2008.02040.x
- Stoebenau, K., M.J. Hindin, C.A. Nathanson, P.G. Rakotoarison and V. Razafintsalama. 2009. "... But Then He Became My Sipa': The Implications of Relationship Fluidity for Condom Use among Women Sex Workers in Antananarivo, Madagascar." *American Journal of Public Health* 99(5): 811–9. doi: 10.2105/AJPH.2007.118422
- Ulibarri, M.D., S.A. Strathdee, R. Lozada, H.S. Staines-Orozco, D. Abramovitz, S. Semple et al. 2012. "Condom Use among Female Sex Workers and Their Non-commercial Partners: Effects of a Sexual Risk Intervention in two Mexican Cities. [Research Support, N.I.H., Extramural]." *International Journal of STD and AIDS* 23(4): 229–34. doi: 10.1258/ijsa.2011.011184
- Westrom, L.V. 1994. "Sexually Transmitted Diseases and Infertility." *Sexually Transmitted Diseases* 21(2 Suppl): S32–37.
- Wong, M.L., I. Lubek, B.C. Dy, S. Pen, S. Kros and M. Chhit. 2003. "Social and Behavioural Factors Associated with Condom Use among Direct Sex Workers in Siem Reap, Cambodia." *Sexually Transmitted Infections* 79(2): 163–5.