Women who inject drugs and violence: Need for an integrated response

Mujeres que usan drogas inyectadas y violencia: Necesidad de una respuesta integrada

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Abstract

The aim of this study was to describe the prevalence of physical and/or sexual violence experienced by women who inject drugs (WWID) and identify associated factors. A cross-sectional study was conducted among 120 WWID in a network of harm reduction centres using an anonymous questionnaire. Oral fluid samples were also collected to estimate the prevalence of HIV and hepatitis C. Univariate and multivariate Poisson regression models with robust variance were performed to identify the factors associated with experiencing violence, obtaining prevalence ratios (PR) and their 95% confidence intervals. The results showed that the prevalence of violence reported by WWID in the last 12 months was 45.8% (42.2% physical and 11.9% sexual aggression). In multivariate analysis, variables associated with experiencing violence were homelessness (PR = 1.59; CI: 1.07-2.38), reporting exchanges of sex for money or drugs (PR = 1.65; CI: 1.19-2.29), reporting a previous sexually transmitted infection (PR = 1.49; CI: 1.04-2.15) and/or injecting drugs less frequently than daily (RP = 2.29; CI: 1.49-3.54). This study highlights the importance of establishing detection protocols and systems of referral to the network of attention to women suffering violence, within the centres of the drug addiction care network, as well as the development of multilevel strategies that take into account not only individual factors but also other social and/or structural aspects that may be playing a relevant role in addressing this problem.

Keywords: Harm reduction centres; hepatitis C; women; drug injection; HIV; violence.

Resumen

El objetivo de este estudio fue describir la prevalencia de violencia física y/o sexual experimentada por mujeres que usan drogas por vía inyectada (MUDVI) e identificar factores asociados. Se realizó un estudio transversal en 120 MUDVI usuarias de centros de reducción de daños mediante un cuestionario anónimo y recogida de muestras de fluido oral para estimar la prevalencia del VIH y de la hepatitis C. Los factores asociados a la presencia de violencia se analizaron mediante un modelo de regresión de Poisson con varianza robusta univariante y multivariante, obteniendo razones de prevalencia (RP) y sus intervalos de confianza al 95%. Los resultados muestran que la prevalencia de agresiones en los últimos 12 meses fue del 45,8% (42,2% agresiones físicas y 11,9% agresiones sexuales). A nivel multivariante, las variables asociadas a la presencia de violencia fueron estar sin domicilio fijo (RP=1,59; IC: 1,07-2,38), ejercer el trabajo sexual (RP=1,65; IC: 1,19-2,29), haber sufrido alguna infección de transmisión sexual (RP=1,49; IC: 1,04-2,15) y/o inyectarse drogas no de forma diaria (RP=2,29; IC: 1,49-3,54). Este estudio pone de manifiesto la importancia de establecer protocolos de detección, y derivación a la red de atención a la violencia de género, dentro de los centros de la red de atención a las drogodependencias, así como el desarrollo de estrategias multinivel que tengan en cuenta no solamente factores individuales sino también otros aspectos sociales y/o estructurales que pueden estar jugando un papel relevante a la hora de abordar este problema.

Palabras clave: Centros de reducción de daños; hepatitis C; mujeres; uso de drogas inyectadas; VIH; violencia.

Received: March 2019; Accepted: March 2020.

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Research, prevention and treatment of addictions is generally viewed from an androcentric perspective, that is, with a focus on the male point of view. This has led to women becoming invisible in the phenomenon, and consequently in the responses or policies to address it (Jiménez, Molina & García-Palma, 2014). The stigmatization and social rejection endured by women with drug addiction problems, and particularly women who inject drugs (WWID), results in less social or family support, greater isolation, and failure and/or delay to request help in overcoming the problem (Arpa, 2017; Falcón, 2006; UN Women, 2014). According to UNAIDS, data on HIV prevalence disaggregated by sex has been reported by 48 countries since 2011, with important differences depending on geographic area in the estimates of HIV prevalence in WWID. In most of these countries (28 of 41) the prevalence of HIV observed in women is higher than that reported in men who inject drugs (UNAIDS, 2014). In Catalonia, the estimated HIV prevalence in WWID recruited in harm reduction centres between 2008 and 2011 was also higher than that observed in men (38.7% and 31.5%, respectively) (Folch et al., 2008).

In the descriptions of factors associated with the increased vulnerability of WWID to HIV infection, hepatitis C and other sexually transmitted infections (STIs), the literature highlights factors at individual level (low self-esteem, loneliness, risk), social and/or community level (substance use issues in the family, partner conflicts), and factors at the structural level (discrimination, laws and policies) (Baral, Logie, Grosso, Wirtz & Beyrer, 2013; El-Bassel, Wechsberg & Shaw, 2012). One of these factors recurrently described in the literature is the physical and/or sexual violence that WWID experience, mainly at the hands of their sexual partners, and which can reduce their ability to protect their own health by negotiating safer sexual and injection practices (Azim, Bontell & Strathdee, 2015; Iversen, Page, Madden & Maher, 2015). Moreover, the prejudices and social stigma suffered by women drug users because they do not meet the expectations of the socially accepted ideal limit and/or delay access to treatment and rehabilitation centres (Malinowska-Sempruch, Rychkova & Foundations, 2015).

In recent years, various authors have highlighted the synergistic interactions found among the epidemics of substance abuse, gender violence, and HIV infection, known as the SAVA syndemic (Substance Abuse, Violence and AIDS) (Gilbert et al., 2015; Meyer, Springer & Altice, 2011). Although gender-based violence against women, including child sexual abuse, intimate partner violence, and sexual assault (UN General Assembly, 1993), is not a direct mechanism for HIV transmission, a recent meta-analysis indicates that it can cause an increase in HIV risk between 28-52% among different populations of women, including the group of women who use drugs (Li et al., 2014). The psychological consequences associated with the violence suffered by these women, such as anxiety, depression and low self-esteem, may limit their ability to apply safer injection and sexual practices (Wagner et al., 2009). Violence in women with drug addiction problems also results in problems of access and adherence to treatment. Furthermore, both the care network for women victims of gender violence and the drug addiction care network have had difficulties in incorporating the twin perspectives of drug dependence and violence in their care protocols (Lipsky et al., 2010; Ruiz-Olivares & Chulkova, 2016), despite the evidence shown by some studies of psychosocial interventions addressing intimate partner violence in women who use drugs in drug treatment centres (Gilbert et al., 2006; Tirado-Muñoz, Gilchrist, Lligoña, Gilbert & Torrens, 2015.)

There have only been a few studies in Spain quantifying and/or specifically addressing violence in women drug addicts and its consequences. An example of such studies is one carried out in Catalonia in drug treatment centres in which no differences were observed in terms of the levels of violence suffered by men and women attendees, although in terms of the type of violence, women suffered psychological and sexual violence more frequently (Arribas-Ibar et al., 2018). It is therefore important to provide elements which can help design appropriate and evidence-based actions for the comprehensive management of gender-based violence and drug addiction. The objective of this study was thus to describe the prevalence of physical and/or sexual violence experienced by WWID who attend harm reduction centres in Catalonia and to identify factors associated with having suffered some act of violence in the previous 12 months.

Methods

Descriptive cross-sectional study carried out in 2014-15 in harm reduction centres among WWID as part of the integrated system for epidemiological surveillance of HIV/STIs in Catalonia. Harm reduction programs in these centres include syringe exchange programs (SEPs), outreach programs, drug addiction treatment and monitoring centres (TMC) and supervised injection rooms.

Participants

A convenience sample of WWID was selected, stratifying by centre and geographic area of origin, and using proportional allocation. Previously, a prospecting or mapping study was carried out in order to describe the type of population attending each centre. The inclusion criteria were being aged over 18 and having injected drugs at least once in the last 6 months.

Questionnaire

Epidemiological and behavioural information was collected using an anonymous questionnaire administered by interviewers, translated into Spanish, Romanian, and Russian, and adapted from the WHO model (WHO, 1994). The questionnaire collected information on sociodemographic characteristics, patterns of drug use, injection-related risk behaviours, sexual behaviour, knowledge of serological status regarding HIV, HCV and other STIs, use of social and health services, prison stay, access to prevention and violence suffered in the last year, among others. Specifically, the questions regarding violence were: "*In the last 12 months, how many times have you suffered any type of physical aggression (been beaten, pushed, hit, ...)?,* and *In the last 12 months, how many times have you suffered any type of sexual assault or abuse?* The dependent variable was defined as having suffered some act of physical violence and/or sexual assault or abuse in the last 12 months.

Biological samples

In addition, oral fluid samples were collected using the ORASURE device (Epitope Inc. USA) to estimate the prevalence of antibodies against HIV and HCV infection, respectively. ADALTIS Detect-HIV kits, version 4, were used to detect anti-HIV antibodies in oral fluid samples (Chohan et al., 2001), and the HCV 3.0 SAVe ELISA (Ortho-Clinical Diagnostics) assay for the detection of anti-HCV antibodies (Judd et al., 2003). Being an anonymous study, with testing valid for an epidemiological study but not approved for individual diagnosis, test results were not made available to the participants; however, participants were offered the possibility to be tested at the Voluntary Counselling and Testing sites network of Catalonia.

Ethical aspects

All participants signed informed consent form. The study protocol was approved an informed consent form by the Ethics Committee of the Hospital Universitari Germans Trias i Pujol.

Statistical analysis

A descriptive analysis of the main variables was carried out and Pearson's $\chi 2$ test and Fisher's exact test were used to compare proportions according to whether or not the women had suffered violent situations. Quantitative variables were compared using the t-test for independent samples after running Levene's equality of variance test. The factors associated with having suffered sexual and/or physical violence in women were analyzed using a Poisson regression model with robust univariate and multivariate variance (Espelt, Bosque-Prous & Marí-Dell'Olmo, 2019; Espelt, Mari-Dell'Olmo, Penelo & Bosque-Prous, 2017), estimating prevalence ratios (PR) and their 95% confidence intervals (CI). Variables with a significance level < 0.10 in the univariate analysis were included in the multivariate model, and an error level of 5% was considered for all analyses. The SPSS version 17 statistical package was used.

Results

Of the total 120 WWID participating in the study, more than half (67.2%) were of Spanish origin and 32.8% were from other countries, mainly from Eastern Europe (42.9%) and Italy (35.7%). The mean age was 35.4 years (SD: 8.9; range: 18-61 years), and 50.8% of the women were currently being treated for their addiction.

The prevalence of assaults in the last 12 months was 45.8% in total, 42.2% in the case of physical assaults and 11.9% for sexual assaults. Both types of violence were reported by 8.3% of WWID. Among the WWID who claimed to have suffered some type of physical aggression in the last 12 months (n = 51), 37.3% occurred on one occasion, 23.5% on two, and the rest on three or more occasions (39.2%). In the case of the 15 women who had suffered sexual assaults, 66.7% stated that it was only once, 20% twice and 13.4% three or more times.

Table 1 describes the socio-demographic and behavioural profile of the women based on whether or not they suffered any type of physical and/or sexual assault. Statistically significant differences are observed in the percentage of WWID who reported having had commercial sex, this percentage being higher among WWID who claimed to have suffered some type of aggression in the last 12 months (29.1% and 9.7%, respectively).

The self-reported lifetime prevalence of STIs was higher in WWID who claimed to have suffered some type of violence (49.1% (CI: 36.4%-61.9%) vs. 24.6% (CI: 15.8% -36.3%); $p < 0.001$). There were no significant differences in the prevalence of HIV and HCV between women who claimed to have suffered some type of violence and those who did not (Figure 1).

Regarding people who assaulted them physically and/or sexually, intimate partners stand out in first place (43.1% and 35.3%, respectively), with friends and/or acquaintances second (22.4% and 23.5%, respectively). Approximately 6% of WWID who have suffered physical or sexual violence affirm that it came from their sexual clients, while 10% of those suffering physical violence affirm that it was from the police (Table 2).

The factors associated at the univariate and multivariate level with having suffered sexual and/or physical violence are presented in Table 3. At the multivariate level, an association is observed between being homeless (RP = 1.59; CI: 1.07- 2.38), performing sex work (RP = 1.65; CI: 1.19-2.29), declaring to have suffered any STI (RP = 1.49; CI: 1.04-2.15) and/or injecting drugs not on a daily basis with the presence of violence in WWID (RP = 2.29; CI: 1.49-3.54).

Table 1. *Socio-demographic profile. drug use patterns and sexual behaviours in WWID in relation to suffering violence or not (previous 12 months).*

	Physical and/or sexual violence		
	No (n=65) %	Yes (n=55) %	p
Age: Under 30 years	19 (29.2)	18 (32.7)	0.679
Country of origin: Spain	42 (64.6)	47 (67.3)	0.094
Primary or lower level of education	42 (64.6)	35 (63.6)	0.911
Ever in prison	34 (52.3)	38 (69.1)	0.061
Currently in treatment	32 (49.2)	28 (50.9)	0.953
Years of injecting: 0-5	22 (33.8)	15 (27.8)	0.476
Injecting daily or 2-3 days/week*	48 (73.8)	39 (70.9)	0.720
Accepted used syringes*	10 (15.4)	10 (18.2)	0.682
Given used syringes to others*	21 (32.3)	18 (32.7)	0.961
Shared other paraphernalia*	41 (63.1)	38 (70.4)	0.402
Sex with stable partner (SP)*	40 (61.5)	38 (69.1)	0.387
Sex with occasional partner (OP)*	14 (21.5)	15 (27.3)	0.465
Inconsistent use of condoms with SP*	33 (50.8)	33 (60.0)	0.597
Inconsistent use of condoms with OP*	5 (7.7)	9 (16.4)	0.324
Sex with clients*	6 (9.7)	16 (29.1)	0.007
Sex with injecting SP	25 (38.5)	28 (50.9)	0.171

Note. *previous 6 months.

Table 2. *Physical and/or sexual violence in WWID by type of perpetrator (previous 12 months).*

	Physical violence (n=51) %	Sexual violence (n=15) %
Intimate partner	43.1	35.3
Parents	3.4	0.0
Relatives	3.4	0.0
Friends/acquaintances	22.4	23.5
Sex clients	6.9	5.9
Involved in drug trafficking	5.2	11.8
Neighbours	0.0	5.9
Police	10.3	0.0
Unknown	25.9	2.4

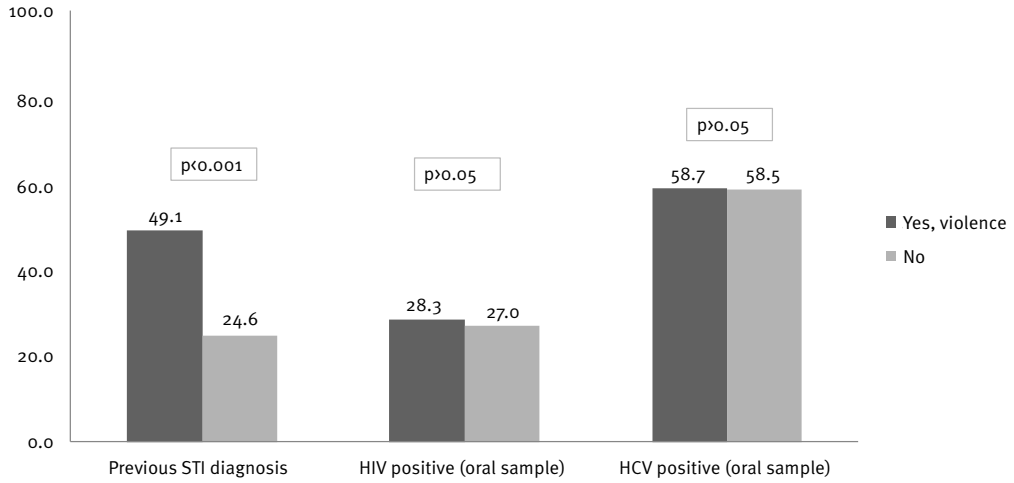

Figure 1. Self-declared STIs and prevalence of HIV and HCV in WWID in relation to suffering violence or not.

Table 3. *Socio-demographic profile, drug use patterns and sexual behaviours associated with suffering violence in WWID (previous 12 months).*

	P	RP	IC95%	RPa	IC95%
Age					
‹ 30 years	48.6	1			
30 years or over	44.6	0.92	0.61-1.38		
Country of origin					
Spain	46.8	1			
Other	43.9	0.94	0.62-1.43		
Educational level					
Primary or lower	45.4	1			
≥ Secondary	46.5	1.02	0.68-1.53		
Ever in prison					
No	35.4	1			
Yes	52.8	1.49	0.96-2.32		
Homeless*					
No	42.6	1		1	
Yes	57.7	1.36	0.90-2.03	1.59	1.07-2.38
Source of income*					
None legally	37.5	1			
Legal	51.4	1.37	0.89-2.11		
Years of injecting					
0-5	40.5	1			
› 5	47.6	1.17	0.75-1.85		
Daily injecting					
No	59.1	1.99	1.26-3.16	2.29	1.49-3.54
Yes	29.6	1		1	
Accepting used syringes*					
No	45.0	1			
Yes	50.0	1.11	0.68-1.81		
Giving used syringes to others*					
No	45.7	1			
Yes	46.1	1.01	0.67-1.53		
Stable partner*					
No	40.5	1			
Yes	48.7	1.2	0.78-1.86		
Occasional partner					
No	44.0	1			
Yes	51.7	1.17	0.77-1.80		
Sex with clients*					
No	41.1	1		1	
Yes	72.7	1.77	1.24-2.52	1.65	1.19-2.29
Stable partner who injects					
No	40.3	1			
Yes	52.8	1.31	0.89-1.93		
HIV (oral fluid)					
No	45.2	1			
Yes	46.9	1.04	0.67-1.61		
HCV (oral fluid)					
No	45.8	1			
Yes	45.6	0.99	0.66-1.49		
Any STI					
No	36.4	1		1	
Yes	62.8	1.73	1.19-2.52	1.49	1.04-2.15

Note. *previous 6 months; PR: Prevalence ratio; PRa: Adjusted prevalence ratio.

Discussion

The data from this study confirm the high prevalence of physical and/or sexual assaults suffered by WWID in Spain, often from their intimate partners, a prevalence higher than that observed in women in the general population (Llopis, Castillo, Rebollida & Stocco, 2005). Specifically, approximately half of WWID using harm reduction centres in Catalonia claim to have suffered this type of violence in the previous year, and this prevalence is higher in women who carry out sex work and who are

homeless, thus justifying the need to develop combined prevention strategies (UNAIDS, 2010) which take into account not only individual factors but also other social and/or structural aspects that may be playing a relevant role in addressing this problem.

A range of previous studies have already shown an association between being a female drug user and a higher probability of suffering some type of violence (Arribas-Ibar et al., 2018; Llopis et al., 2005). Most of the violent situations experienced by WWID attending harm reduction centres happen with their intimate partners, many of whom are also injecting drug users. In these couples it has been observed that separating the relationship from substance use is a complex matter given the mixture of ambivalent attitudes towards both (Chait & Calvo, 2005). In addition, WWID often do not identify situations of violence towards them or assume the greater aggressiveness of their partners when they are under the influence of drugs to be "normal" (Martínez Redondo, 2009). However, it would be a mistake to focus exclusively on intimate partner violence because a high percentage of these attacks also occur in environments involving friends and acquaintances and even strangers, as well as in the form of physical aggression by police. Previous studies carried out in other countries such as Canada also show a high percentage of WWID (43.5%) who say they have been victims of violence by acquaintances (Marshall, Fairbairn, Li, Wood & Kerr, 2008).

The study show an association between suffering some type of violence in the previous year and engaging in sex work in exchange for money and/or drugs, a result which is consistent with earlier studies carried out internationally (Azim et al., 2015). WWID who perform sex work often face certain social and structural barriers which stop them from accessing prevention programs and the necessary socio-health services (El-Bassel, Shaw, Dasgupta & Strathdee, 2014). In addition to situations of violence faced by women involved in sex work, especially women who practise on the street (Deering et al., 2013), WWID face particularly high-risk situations for HIV infection and other STIs, such as using drugs with their clients (Strathdee et al., 2011), or difficulties in negotiating condom use with stable clients who give them more money to finance their drug use (Robertson et al., 2014).

Living on the street is also associated with having suffered some type of violence in the previous year, a result already observed in earlier studies in both men and women who inject drugs (Marshall et al., 2008). Homeless WWID suffer worse forms of subordination and inequality which exacerbate their invisibility and social exclusion, and which are sometimes expressed through violence, either by their partners or their clients if carrying out sex work (Bourgois, Prince & Moss, 2004). This association could also be due to different factors related to the precarious social conditions of these people (criminal activities, poverty, little social support…) (Marshall et al., 2008).

A higher prevalence of lifetime STIs is observed in WWID who have suffered violence (49% vs. 25%). Although this issue is not exclusive to the WWID population, studies show women who have suffered some type of sexual violence from their partners have a higher risk of HIV/STI infections (Decker et al., 2014), with condoms being less frequently used in sexual relations due to the difficulties in negotiating their use when violence is involved. It can be said that drug use, violence and associated infections are synergistic health problems that interact with each other and negatively affect the health of the population, in this case of the WWID population (Gilbert et al., 2015).

A surprising fact is that WWID who injected daily had a lower probability of suffering violence compared to WWID injecting less frequently. A more detailed analysis of the characteristics of use would be necessary to be able to interpret the results correctly (other routes of administration, polydrug use, etc.).

Among the limitations of the study, we must first highlight the fact that it is not possible to generalize the data to all WWID in Catalonia since the sample was selected only in harm reduction centres, so we have no information regarding women who do not access these centres. However, attempts were made to diversify the type of recruitment centre as much as possible, and people from other countries were included to provide the most representative sample possible. Moreover, the prevalence of some risk behaviours collected through the self-report could be underestimated, as could the percentage of women who say they suffered some type of physical and/or sexual assault. To minimize this, we sought to establish an environment of anonymity to facilitate the conduct of the interviews, using simple and understandable language. In addition, certain types of violence may not have been collected with the question included in the questionnaire (psychological violence, for example). Furthermore, the psychometric properties of the questionnaire in the present work were not assessed. Despite the small sample size, this is one of the few studies in our country to address the problem of addictions from a gender perspective. It would be interesting to be able to carry out future studies with a greater number of participants in order to perform analyses with greater statistical power. Finally, being a descriptive cross-sectional study, no causal relationships can be established between situations of violence and the risk factors analyzed.

Despite the limitations, the data from this study show that a high percentage of WWID recruited in harm reduction centres have been the victims of physical and/or sexual violence on some occasion; this is particularly the case of women with worse social conditions such as those who report living on the street and those involved in sex

work. The importance is therefore justified of establishing detection protocols and systems of referral to the care network for victims of gender violence within the network of drug addiction care centres used by the women, given the difficulties they sometimes have in identifying situations of violence because these have become a "normal" part of their daily lives.

Furthermore, it is also important to train the professionals who care for women, to create safe spaces for them from which they can work safely, without men, and also to work towards new types of masculinity based on respect for women. Finally, it should be ensured that women who use drugs and who also face situations of violence can access resources providing holistic interventions with comprehensive care for such women, given that most of these services are designed to serve men as the visible majority.

Acknowledgments

The authors wish to thank the interviewers, the participating harm reduction centres, Oleguer Parés for his contributions to the manuscript, and especially all the women who use drugs and participated in the study.

Conflict of interests

Albert Espelt is Associate Editor of the journal *Adicciones*. However, this played no role in the editorial process.

References

Arpa, S. (2017). *Women who use drugs: Issues, needs, responses, challenges and implications for policy and practice*. Lisbon, Portugal: EMCDDA Papers, Publications Office of the European Union.

Arribas-Ibar, E., Suelves, J. M., Sanchez-Niubò, A., Tirado-Muñoz, J., Domingo-Salvany, A. & Brugal, M. T. (2018). Violence among illicit drug users recruited in drug treatment facilities. *Adicciones*. Advance publication online. doi:10.20882/adicciones.988.

Azim, T., Bontell, I. & Strathdee, S. A. (2015). Women, drugs and HIV. *International Journal of Drug Policy*, *26 (Supl. 1)*, 16-21. doi:10.1016/j.drugpo.2014.09.003.

Baral, S., Logie, C. H., Grosso, A., Wirtz, A. L. & Beyrer, C. (2013). Modified social ecological model: A tool to guide the assessment of the risks and risk contexts of HIV epidemics. *BMC Public Health*, *13*, 482. doi:10.1186/1471-2458-13-482.

Bourgois, P., Prince, B. & Moss, A. (2004). The everyday violence of hepatitis C among young women who inject drugs in San Francisco. *Human Organization*, *63*, 253-264. doi:10.17730/humo.63.3.h1phxbhrb7m4mlv0.

Chait, L. & Calvo, B. Z. (2005). Mujeres drogodependientes maltratadas: Análisis para la intervención. *Trastornos Adictivos*, *7*, 104-113. doi:10.1016/S1575-0973(0.5)74515-3.

Chohan, B. H., Lavreys, L., Mandaliya, K. N., Kreiss, J. K., Bwayo, J. J., Ndinya-Achola, J. O. & Martin, H. L. (2001). Validation of a modified commercial enzyme-linked immunoassay for detection of human immunodeficiency virus type 1 immunoglobulin G antibodies in saliva. *Clinical and Diagnostic Laboratory Immunology*, *8*, 346-348. doi:10.1128/CDLI.8.2.346-348.2001.

Decker, M. R., Miller, E., McCauley, H. L., Tancredi, D. J., Anderson, H., Levenson, R. R. & Silverman, J. G. (2014). Recent partner violence and sexual and drug-related STI/HIV risk among adolescent and young adult women attending family planning clinics. *Sexually Transmitted Infections*, *90*, 145-149. doi:10.1136/sextrans-2013-051288.

Deering, K. N., Lyons, T., Feng, C. X., Nosyk, B., Strathdee, S. A., Montaner, J. S. G. & Shannon, K. (2013). Client demands for unsafe sex: The socioeconomic risk environment for HIV among street and off-street sex workers. *Journal of Acquired Immune Deficiency Syndromes*, *63*, 522-531. doi:10.1097/QAI.0b013e3182968d39.

El-Bassel, N., Wechsberg, W. M. & Shaw, S. A. (2012). Dual HIV risk and vulnerabilities among women who use or inject drugs: No single prevention strategy is the answer. *Current Opinion in HIV and AIDS*, *7*, 326-331. doi:10.1097/COH.0b013e3283536ab2.

El-Bassel, N., Shaw, S. A., Dasgupta, A. & Strathdee, S. A. (2014). Drug use as a driver of HIV risks: Re-emerging and emerging issues. *Current Opinion in HIV and AIDS*, *9*, 150-5. doi:10.1097/COH.0000000000000035.

Espelt, A., Mari-Dell'Olmo, M., Penelo, E. & Bosque-Prous, M. (2017). Applied Prevalence Ratio estimation with different Regression models: An example from a cross-national study on substance use research. *Adicciones*, *29*, 105-112. doi:10.20882/adicciones.823.

Espelt, A., Bosque-Prous, M. & Marí-Dell'Olmo, M. (2019). Considerations on the use of Odds Ratio versus Prevalence or Proportion Ratio. *Adicciones*, *31*, 257-259. doi:10.20882/adicciones.1416.

Falcón, C. M. (2006). Invisibilidad y estigmatización del consumo de drogas en las mujeres. In A. García-Mina & M. J. Carrasco (Eds.), *Diferencias de género en el uso de las drogas* (pp. 13-35). España: Universidad Pontificia Comillas.

Folch, C., Esteve, A., Sanclemente, C., Martró, E., Lugo, R., Molinos, S.,… Casabona, J. (2008). Prevalence of human immunodeficiency virus, Chlamydia trachomatis, and Neisseria gonorrhoeae and risk factors for sexually transmitted infections among immigrant female sex workers in Catalonia, Spain. *Sexually Transmitted Diseases*, *35*, 178-183. doi:10.1097/OLQ.0b013e31815a848d.

Gilbert, L., El-Bassel, N., Manuel, J., Wu, E., Go, H., Golder, S.,... Sanders, G. (2006). An integrated relapse prevention and relationship safety intervention for women on methadone: Testing short-term effects on intimate partner violence and substance use. *Violence and Victims*, 21, 657-672.

Gilbert, L., Raj, A., Hien, D., Stockman, J., Terlikbayeva, A. & Wyatt, G. (2015). Targeting the SAVA (substance abuse, violence and AIDS) syndemic among women and girls: A global review of epidemiology and integrated interventions. *Journal of Acquired Immune Deficiency Syndromes, 69 (Supl. 2),* 118-27. doi:10.1097/QAI.0000000000000626.

Iversen, J., Page, K., Madden, A. & Maher, L. (2015). HIV, HCV, and health-related harms among women who inject drugs: Implications for prevention and treatment. *Journal of Acquired Immune Deficiency Syndromes, 69 (Supl. 2),* 176-181. doi:10.1097/QAI.0000000000000659.

Jiménez, A. M., Molina, M. I. S.-M. & García-Palma, M. B. (2014). Gender bias in addictions and their treatment. An overview from the social perspective. *Procedia-Social and Behavioral Sciences, 132*, 92-99. doi:10.1016/j.sbspro.2014.04.283.

Judd, A., Parry, J., Hickman, M., McDonald, T., Jordan, L., Lewis, K.,… Nelson, M. (2003). Evaluation of a modified commercial assay in detecting antibody to hepatitis C virus in oral fluids and dried blood spots. *Journal of Medical Virology, 71*, 49-55. doi:10.1002/jmv.10463.

Li, Y., Marshall, C. M., Rees, H. C., Nunez, A., Ezeanolue, E. E. & Ehiri, J. E. (2014). Intimate partner violence and HIV infection among women: A systematic review and meta-analysis. *Journal of the International AIDS Society, 17*, 18845. doi:10.7448/IAS.17.1.18845. eCollection 2014.

Lipsky, S., Krupski, A., Roy-Byrne, P., Lucenko, B., Mancuso, D. & Huber, A. (2010). Effect of co-occurring disorders and intimate partner violence on substance abuse treatment outcomes. *Journal of Substance Abuse Treatment, 38*, 231-244. doi:10.1016/j.jsat.2009.12.005.

Llopis, J. J., Castillo, A., Rebollida, M. & Stocco, P. (2005). Uso de drogas y violencia de género en mujeres adictas en Europa. Claves para su comprensión e intervención. *Salud y Drogas, 5*, 137-158.

Malinowska-Sempruch, K., Rychkova, O. & Foundations, O. S. (2015). *The impact of drug policy on women.* New York, NY: Open Society Foundations.

Marshall, B. D. L., Fairbairn, N., Li, K., Wood, E. & Kerr, T. (2008). Physical violence among a prospective cohort of injection drug users: A gender-focused approach. *Drug and Alcohol Dependence, 97*, 237-246. doi:10.1016/j.drugalcdep.2008.03.028.

Martínez Redondo, P. (2009). Investigación sobre la intervención en drogodependencias y malos tratos a mujeres en la red de atención. *Unión de Asociaciones y Entidades de Atención al Drogodependiente, UNAD.*

Meyer, J. P., Springer, S. A. & Altice, F. L. (2011). Substance abuse, violence, and HIV in women: A literature review of the syndemic. *Journal of Women's Health, 20*, 991-1006. doi:10.1089/jwh.2010.2328.

Robertson, A. M., Syvertsen, J. L., Amaro, H., Martinez, G., Rangel, M. G., Patterson, T. L. & Strathdee, S. A. (2014). Can't buy my love: A typology of female sex workers' commercial relationships in the Mexico-U.S. Border Region. *Journal of Sex Research, 51*, 711-720. doi:10.1080/00224499.2012.757283.

Ruiz-Olivares, R. & Chulkova, M. (2016). Intervención psicológica en mujeres drogodependientes: Una revisión teórica. *Clínica y Salud, 27*, 1-6. doi:10.1016/j.clysa.2016.01.001 1130-5274.

Strathdee, S. A., Lozada, R., Martinez, G., Vera, A., Rusch, M., Nguyen, L.,… Patterson, T. L. (2011). Social and structural factors associated with HIV infection among female sex workers who inject drugs in the Mexico-US border region. *PloS one, 6*, e19048. doi:10.1371/journal.pone.0019048.

Tirado-Muñoz, J., Gilchrist, G., Lligoña, E., Gilbert, L. & Torrens, M. (2015). Intervención grupal para reducir la violencia de género entre consumidoras de drogas. Resultados de un estudio piloto en un centro comunitario de tratamiento de adicciones. *Adicciones, 27*,168-178. doi:10.20882/adicciones.703.

UN General Assembly. (1993). *Declaration on the Elimination of Violence Against Women.* Geneva, Switzerland: 85th Plenary Meeting.

UN Women. (2014). A gender perspective on the impact of drug use, the drug trade, and drug control regimes: UN Women policy brief. *New York: United Nations Women.*

UNAIDS. (2010). *Combination HIV prevention: Tailoring and coordinating biomedical, behavioural and structural strategies to reduce new HIV infections.* Geneva, Switzerland: Joint United Nations on HIV/AIDS (UNAIDS).

UNAIDS. (2014). The gap report. Joint United Nations on HIV/AIDS (UNAIDS). Geneva, Switzerland: UNAIDS.

Wagner, K. D., Hudson, S. M., Latka, M. H., Strathdee, S. A., Thiede, H., Mackesy-Amiti, M. E. & Garfein, R. S. (2009). The effect of intimate partner violence on receptive syringe sharing among young female injection drug users: An analysis of mediation effects. *AIDS and Behavior, 13*, 217-224. doi:10.1007/s10461-007-9309-5.

World Health Organization. (1994). *Multi-city study on drugt injecting and risk of HIV infection. Programme on Substance abuse-Final Report.* Geneva: WHO.