

Reducing hepatitis C  
injecting and sexual  
risk behaviours among  
females who inject drugs  
in Europe (REDUCE):  
translating evidence  
into practice

Final report  
2013

*The REDUCE project is co-funded  
by the European Union's Drug  
Prevention and Information  
Programme*

*Project number:  
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REDUCE*





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[www.thereduceproject.imim.es](http://www.thereduceproject.imim.es)



## Abbreviations

**DDSI** Dual Diagnosis Screening Instrument

**FWID** Females who inject drugs

**HCV** Hepatitis C Virus

**IPV** Intimate Partner Violence

**MWID** Males who inject drugs

**PTSD** Post-Traumatic stress disorder

**PWID** People who inject drugs

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# Executive Summary

## Introduction

The REDUCE project was co-funded by the European Union's Drug Prevention and Information Programme to:

1. measure HCV transmission knowledge and HCV risk behaviours among females who inject drugs (FWID).
2. determine the extent of HCV transmission knowledge and HCV risk behaviours among FWID.
3. develop and test an evidence based group intervention to increase HCV transmission knowledge and reduce HCV risk taking behaviours among FWID.

REDUCE was a collaborative European project, managed by the University of Greenwich and conducted in Italy, Spain, Austria, Scotland and Poland. A mixed methods study design was used to measure and explore FWID HCV risk behaviours, and the evidence based group intervention delivered by trained therapists comprised three sessions that covered:

- Session 1. Understanding Hepatitis C transmission risks.
- Session 2. Hepatitis C and sexual wellbeing – negotiating safety.
- Session 3. Hepatitis C and emotional wellbeing – reducing negative mood.

231 FWID who had injected illicit drugs in the previous six months and were aged 18 years and older took part in structured interviews and a sub-sample of 125 FWID undertook in-depth interviews. Thirty-six FWID who injected in the **previous month** were recruited to the intervention.

## Findings

The REDUCE project's findings suggest the high prevalence of HCV infection among this population is a result of regular risk behaviours for HCV transmission such as:

- Sharing of needles/syringes.
- Injecting in groups or with a partner.
- Involvement in high risk partner relationships.

In addition there was limited knowledge about HCV transmission risk behaviours and important gaps and misconceptions were identified. Even when HCV risk behaviours were correctly identified this did not prevent FWID from continuing to engage in high-risk injecting practises. This dissonance between knowledge and behaviour is explained by a number of reasons including:

1. Lack of sterile injecting equipment.
2. Stressful situations leading to impulsive behaviour.
3. Injecting in groups and/or unsafe locations.
4. Intimate partner violence (IPV) increases FWID vulnerability to injecting risk behaviours and reduces their ability to negotiate and assert safer injection practises.
5. Psychiatric comorbidity increases FWID vulnerability to injecting risk behaviours and reduces their ability to negotiate and assert safer injection practises.

The three session brief group intervention was assessed and valued by the participants and trained therapists. The intervention successfully reduced some injection risk behaviours and significantly increased HCV transmission knowledge among FWID although some modification may be required before its implementation in routine practise. Nevertheless, the costs of successful early intervention compared to the consecutive costs of HCV treatment highlight the need for successful HCV prevention initiatives such as the REDUCE intervention when targeting FWID and other vulnerable populations.

## Recommendations

- 1.** Gender sensitive HCV prevention interventions, such as the REDUCE intervention, are required to address the specific needs of FWID.
- 2.** There remains a need for a randomised controlled trial of the REDUCE intervention.
- 3.** Psychosocial interventions should be offered not only in drug treatment centres, but also in GP practices and within community health services to enable a wider population to be targeted, and more importantly, to improve the capability of FWID to reduce their risk behaviours and prevent infection.



# 1. The REDUCE project

## 1.1 Background and rationale

One objective of the EU Drug Strategy 2005-2012 was to prevent and reduce drug use/dependence and the associated inherent risks among vulnerable groups and people living in socially disadvantaged areas, including women. The EU drugs action plan (2009–2012) highlighted the need to further improve the effectiveness of measures to reduce drug use and its consequences by improving the quality and effectiveness of harm reduction interventions; by targeting innovative and evidence-based and evaluated prevention and intervention programmes to prevent high risk behaviour among vulnerable groups, including people who inject drugs (PWID) and women.

Worldwide, around 170 million people are infected with the hepatitis C virus (HCV); the majority are PWID <sup>[1]</sup>. Being female is a predictor of HCV among PWID <sup>[2]</sup>. Sharing injecting equipment poses the greatest risk of transmission among PWID. While there is no increased risk of HCV transmission in a long term, heterosexual relationship, the risk of transmission increases with multiple sexual partners and among women who are infected with HIV or other sexually transmitted diseases <sup>[3]</sup>. Females who inject drugs (FWID) report risk behaviours including sharing needles and injecting paraphernalia, having sex with males who inject drugs (MWID), having multiple sex partners, exchanging sex for money or drugs and not using condoms <sup>[4, 5]</sup> – potentially putting them at greater risk of HCV. Depression among FWID has been associated with injection-related risk such as needle sharing <sup>[6]</sup>. Research suggests a gap in transmission knowledge among PWID that may contribute to the high HCV prevalence <sup>[7]</sup>. Many FWID rely on others to inject them, often male sexual partners <sup>[8-10]</sup>, which may reduce their ability to insist on safer injecting behaviours. FWID are more likely than MWID to have sexual partners who also inject drugs, to inject with and to have been first injected by a male partner, and to borrow needles and injecting paraphernalia from their sexual partner <sup>[5, 9-13]</sup>. Female drug users experience high levels of intimate partner violence <sup>[14]</sup>. HCV risk behaviour therefore, should be also understood in the context of their relationships with male partners <sup>[15]</sup>. Gender inequalities, negative mood, partner violence and lack of assertiveness may decrease FWID ability to negotiate safer interactions in their personal drug and sex networks/ relationships. Risks could be reduced if FWID were aware of

HCV transmission risks and were able to assertively insist on and negotiate safer injecting and sexual practices. Behavioural interventions to reduce HIV and HCV risk taking behaviours among FWID report reductions in risk behaviours [16, 17]; however previous studies failed to consider sex differences or mental health and have failed to account for risks that may occur in intimate relationships. Therefore the REDUCE project sought to understand the HCV risks that FWID take, and develop an evidence based intervention to teach them about HCV transmission risks and equip them with the skills to assertively insist on and negotiate safer injecting and sex practices to reduce these risk behaviours.

## 1.2 Aims

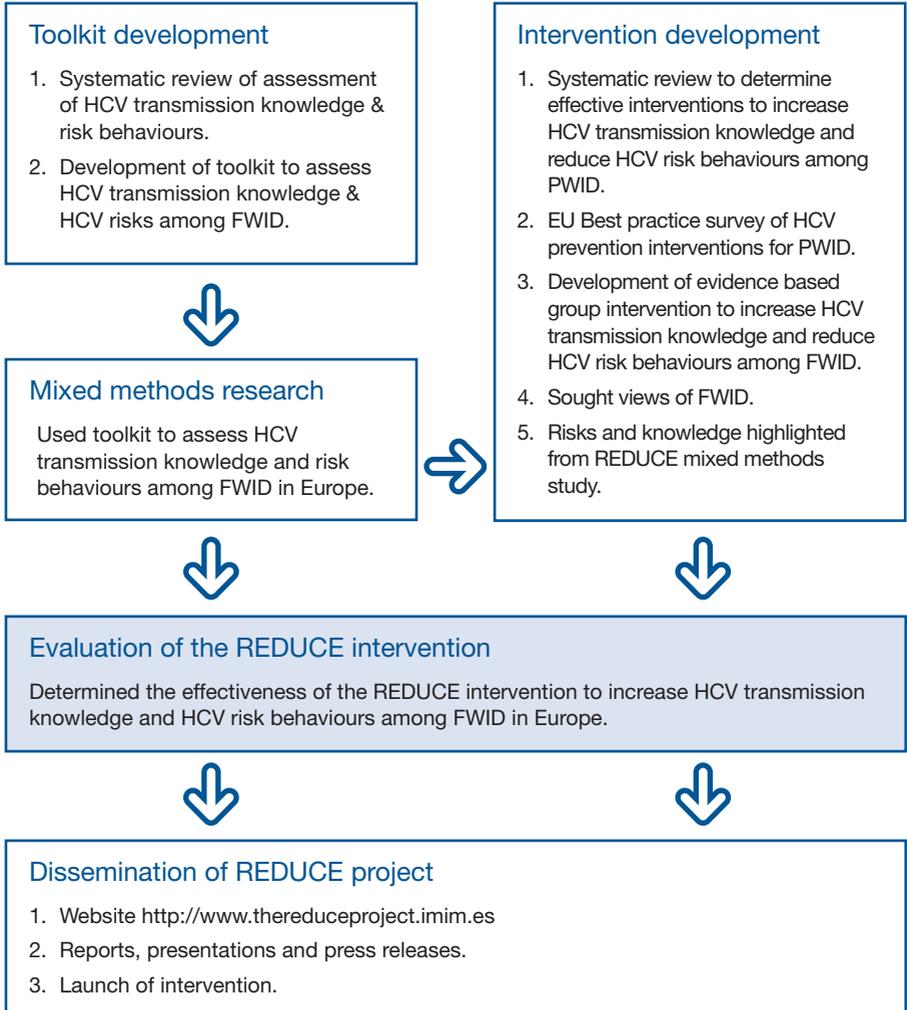
The REDUCE project was co-funded by the European Union's Drug Prevention and Information Programme (Project number: JUST/2010/DPIP/AG/0975 REDUCE) to:

1. Develop a toolkit to measure HCV transmission knowledge and HCV risk behaviours among FWID.
2. Determine the extent of HCV transmission knowledge and HCV risk behaviours among FWID.
3. Develop and test an evidence based group intervention to increase HCV transmission knowledge and reduce HCV risk taking behaviours among FWID.

## 1.3 Workplan

Four working group meetings were held in Barcelona, Glasgow, Warsaw and Vienna. Briefly, **an evidence based toolkit was developed to assess HCV transmission knowledge and risk behaviours** among FWID to inform the development of an evidence based intervention. This intervention was tested in an evaluation study. The toolkit and intervention manual were launched at country specific events and disseminated on the project website and in print.

Figure 1. REDUCE project work plan  
(1 October 2011-27 December 2013)





## 2. Statistics on HCV and drug treatment among drug users in countries participating in the REDUCE project

To help understand the results of the REDUCE project, background information on HCV among PWID in each of the countries participating in the project is described in *Table 1*. *Table 2* describes the availability of drug treatment in each country. *Table 3* presents the availability of treatment for HCV in each country.

*Table 1. Prevalence of HCV infection in the general population and among PWID in the countries participating in the REDUCE project*

Country	Population (n inhabitants)	Prevalence of HCV in general population (%)	Prevalence of HCV among PWID (%)	Prevalence of HCV among PWID (%)
Austria	8,400,000	0.5 – 1	38 – 73	38 – 79
Italy	60,700,000	3 – 12	61	63.8
Poland	38,483,000	0.4 – 1.9	47.6	75.8
Scotland	5,222,100	0.7	57	57
Spain	49,000,000	2.5	65 - 90	54 – 71

*Table 2. Services and treatment available for PWID in the countries participating in the REDUCE project*

Treatments available	Austria	Italy	Poland	Scotland	Spain
Opioid substitution treatment available <sup>1</sup>	Yes	Yes	Yes	Yes	Yes
Year of opioid substitution treatment introduced	1987	1980	1992	1986	widely available from 1991
Coverage of opioid substitution treatment (%)	40-60	40-60	10-20, some regions with no access	unknown	65

Needle exchanges available	Yes	Yes	Yes	Yes	Yes
Year needle exchanges introduced	1990	1999	1989	1986	1991
Number of syringes distributed per problematic opioid user (2010-2011) <sup>2</sup>	98	unknown	8	48	19
Injecting rooms available	No	No	No	No	Yes
Year injecting rooms introduced	-	-	-	-	2000
Counselling (e.g. outpatient individual or group)	Yes	Yes	Yes	Yes	Yes
Residential treatment (e.g. inpatient rehabilitation centres)	Yes	Yes	Yes	Yes	Yes
Outpatient detoxification	Yes	Yes	Yes (private sector)	Yes	Yes
Inpatient detoxification	Yes	Yes	Yes	Yes	Yes
Self help (e.g. AA/NA)	Yes	Yes	Yes	Yes	Yes
Psychosocial interventions	Healthcare professionals from different disciplines are available (inpatient & outpatient): Social workers, clinical psychologists and psychotherapists	Available from addiction treatment services.	Education is offered to reduce risk behaviour. There are specific interventions for pregnant women.	Available from addiction treatment services.	Education is offered to reduce risk behaviour in outreach programs, harm reduction and treatment centres. There are no specific interventions for women.

1 Mainly methadone and buprenorphine, except in Austria where slow release morphine is most common opioid substitution treatment.

2 Source: data calculated for REDUCE study through EMCDDA figures of rate of problematic opioid users/1000 inhabitants and N° of syringes distributed <http://www.emcdda.europa.eu/publications/country-overviews/lu/data-sheet>.

**Table 3.** HCV treatment availability and conditions for PWID in countries participating in the REDUCE project

<b>Treatments available</b>	<b>Austria</b>	<b>Italy</b>	<b>Poland</b>	<b>Scotland</b>	<b>Spain</b>
HCV treatment available to drug users	Yes	Yes	Yes	Yes	Yes
Conditions of treatment	After successful detoxification and/or patients in opioid maintenance therapy may receive treatment. Eligible for treatment after at least 6 months of abstinence or, in case of substitution treatment, without additional drug use or, in case of drug use, no injection drug use or intoxication and few psychosocial problems. Treatment is contraindicated for chaotic drug users/ injectors. Decisions are based on individual patients after analyzing risks and benefits.	Treatment usually provided in co-operation with the Infection Disease Unit in the hospitals. The community addition services provide support. Both services cooperate in pursuing the complete treatment programme. Patient must be nearing end of detoxification from methadone or equivalent substitution therapy due to low retention rate.	To receive treatment, drug users should be drug free or in methadone maintenance treatment. If patients return to injecting drug use, they are no longer eligible for treatment. If drug use ceases, the patient will be re-evaluated and a decision about whether to return to treatment is made.	Currently, there is no requirement to be drug free. However, patients must be stable and considered able to adhere to treatment.	Drug free for last 6 months (including alcohol and illicit drugs). Substitution treatment including methadone or buprenorphine is allowed.
Se ofrece de forma gratuita	Yes	Yes	Yes	Yes	Yes
Lista de espera para el tratamiento	No	No	Yes 2 weeks-3 months	Yes	No



## 3. HCV transmission knowledge and risk behaviours among FWID in Europe: a mixed methods study

A mixed methods study was undertaken to determine the level of HCV transmission knowledge and risk behaviours among FWID in 5 European countries (Austria, Italy, Poland, Spain and Scotland). The reasons why FWID continued to take risks were also identified.

### 3.1 Development of the REDUCE toolkit to measure HCV transmission knowledge and risk behaviours

#### 3.1.1 Quantitative questionnaire

Systematic searches of Medline, PsycINFO, CINAHL, ASSIA and Web of Science were conducted to identify existing instruments to measure HCV transmission knowledge and HCV and other blood-borne virus risk taking behaviours.

The HCV transmission knowledge questionnaire was adapted from Balfour et al <sup>[18]</sup>. The questionnaire has 53 risk statements with three response options “true” “false” and “don’t know”. Each correct answer scores one. The total score ranged from 0-53. The higher the total score, the greater the HCV transmission knowledge.

Two instruments were directly used to construct the new risk taking questionnaire used in the REDUCE study: Hepatitis C related knowledge, attitudes and behaviours of Montreal injection drug users [HCV-KAB] <sup>[19]</sup> and the Needle Exchange Surveillance Initiative (NESI) Scotland survey instrument <sup>[20]</sup>. The questionnaire asked about drug use, injecting preparation and administration practices and sexual practices to determine HCV transmission risk behaviours as well as to ascertain why these risks were taken.

Decisions on which questions to include from which instruments, as well as on amendments to wording, were taken by a panel of experts (the REDUCE research group) and the **REDUCE toolkit to measure HCV transmission**

**knowledge and risk behaviours was created.** The toolkit is available in English, German, Italian, Polish and Spanish <http://www.thereducerproject.imim.es/>.

In addition seven lifetime psychiatric disorders (depression, dysthymia, generalised anxiety disorder, post-traumatic stress disorder (PTSD), panic, social phobia and agoraphobia) were screened for using The Dual Diagnosis Screening Instrument (DDSI) <sup>[21]</sup>. The Composite Abuse Scale <sup>[22]</sup> measured severe combined abuse, emotional abuse, physical abuse, and harassment from an intimate partner in the previous 12 months of their current or most recent intimate relationship. HCV status was confirmed by services, with participants' consent, in Italy and Spain, and was self-reported by participants in Austria and Scotland. In Poland, all participants were tested for HCV with consent, unless they had been tested within the last six months.

### 3.1.2 Qualitative topic guide

A topic guide was prepared to facilitate the in-depth interviews. The qualitative interviews covered:

1. HCV transmission knowledge.
2. Injecting risks in relation to preparation, administration and 'aftermath' (cleaning and disposal of used equipment) – participants were asked to describe their usual practice.
3. Sexual risks practices.
4. The role and influence of others in risk behaviours.
5. The reasons for engaging in risk behaviours.
6. Feasibility and acceptability of a psychosocial intervention for FWID to reduce HCV risk behaviours and increase HCV transmission knowledge.

## 3.2 Methods

### 3.2.1 Participants and recruitment

Females who were aged 18 years and older and who had injected heroin and/or other opiates, cocaine or amphetamines in the previous six months were eligible to participate in the study. In Austria, Italy, Scotland and Spain, FWID were approached by researchers in outpatient treatment centre waiting rooms and invited to participate. In Austria and Spain FWID were also recruited from needle exchanges and injecting rooms respectively. In addition, outpatient treatment appointment lists were reviewed by staff to alert researchers to when female clients would be attending the service to increase recruitment opportunities. In Poland, privilege access interviewers who themselves were ex drug users and employees at the drop-in centre, used snowballing techniques to recruit female injectors. All potential participants were given a study information leaflet which was explained to them by the researcher before they were recruited and signed consent was obtained. Ethical Committee approval was granted by the relevant university or health service in each country before the study began.

The mixed methods study was undertaken in two phases. In [Phase 1](#), 231 FWID (44%-74% of whom were HCV positive) were recruited from 5 countries (Table 4). Researchers/privilege access interviewers administered the REDUCE toolkit for assessing HCV transmission knowledge and risk behaviours. The DDSI <sup>[21]</sup> was administered by the researcher in all countries except Italy, where a psychologist administered the DDSI following the administration of the REDUCE toolkit. The most commonly injected drugs were heroin or other opiates in Austria, Italy, Poland and Scotland; and was cocaine in Spain. Table 5 describes the recruitment strategies used in each country for the mixed methods study and compares these samples to data from FWID in each country to identify potential bias with the samples recruited.

Secondly, 125 of the 231 (54%) FWID recruited in [Phase 1](#) were invited to participate in a qualitative interview at the end of the quantitative interview and if they agreed a convenient date was arranged. The FWID were interviewed in depth about their knowledge of HCV transmission and to understand why injectors take HCV sexual and drug risk behaviours. Sixty of the 125 (48%) FWID recruited in [Phase 2](#) were HCV positive.

### 3.2.2 Analysis

Descriptive statistics were calculated using SPSS. Frequencies, total scores, mean and standard deviations (SD) were calculated.

In-depth interviews were digitally recorded and transcribed verbatim. Data were organized and coded. A qualitative research framework approach was used for the analysis: familiarisation, identifying a thematic framework, indexing, charting and mapping and interpretation <sup>[23]</sup>. Two researchers from each country individually coded the first three transcripts in their native language. These codes were debated at a face-to-face meeting with the researchers until these were agreed and a common coding framework established. All coding was undertaken in the native language of the interview and individual country reports were produced. Thereafter, a pooled report of the key themes and commonalities from all 5 individual country reports was developed.

## 3.3 Quantitative results

### 3.3.1 Demographics

Two hundred and thirty one FWID in the past six months were recruited (50 from Austria, Italy, Poland and Spain; and 31 from Scotland). Their mean age was 33.28 years (SD 8.73; range 18-57 years). Over a quarter of participants lived alone (64/231; 27.2%); 30.3% lived with a partner (70/231), 26.4% (61/231) lived with other family members, 15.2% (35/231) lived with friends/flatmates and 14.7% (34/231) lived with children [answers are not mutually exclusive]. Sixty percent (138/231; 59.7%) had ever lived in a hostel for the homeless, had no fixed abode or lived on the street, 28.6% (66/231) had done so in the last 6 months.

The majority of participants were unemployed (156/231; 67.5%) or receiving disability benefit (38/231; 16.5%). Only 10% were in paid employment (23/231; 10%). Almost half (112/231; 48.5%) had high school qualifications and 29.4% (68/231) had a technical certificate, apprenticeship or vocational qualifications. Just 5.2% (12/231) had a university under or post graduate degree.

### 3.3.2 History of injecting drug use

The mean age of first injection was 21.36 years (SD 6.21; range 12-47 years). In the past 6 months, 67.5% (156/231) had injected heroin and 23.4% (54/231) had injected other opiates (including Methadone, Substitol, Compensan and Morphium), 49.4% (114/231) had injected cocaine; 16.5% (38/231) had injected speedballs (heroin and cocaine); 19.5% (45/231) had injected stimulants (including amphetamine, Efedron, MDMA, Mephedrone); 8.7% (20/231) had injected benzodiazepines (including Tempazepam, Diazepam and Clonazepam); 1.7% (4/231) had injected crack and 0.9% (2/231) had injected ketamine.

Table 4. Methods for mixed methods study

Country	Recruitment Setting	Phase 1: Quantitative study		
		Sample size (HCV+ve)*	Average age (SD)	Drug injected most often in past 6 months
Austria	Outpatient drug treatment centres / needle exchanges	50 (44 %)	27.48 (5.85)	14 % cocaine; 74 % other opiates
Italy	Outpatient drug treatment / drop in / medical centre / community treatment centres	50 (60 %)	31.32 (8.62)	10 % cocaine; 84 % heroin
Poland	Drop-in for drug users	50 (73.5 %)	34,76 (8.88)	20 % amphetamines; 50 % heroin
Scotland	Outpatient drug treatment centres / community rehabilitation centres	31 (25.8 %)	34.32 (7.33)	13 % cocaine; 81 % heroin
Spain	Outpatient drug treatment centres / injecting rooms	50 (70 %)	38,92 (7.98)	58 % cocaine; 42 % heroin

\* HCV results (except Austria and Scotland) verified with drug treatment service records.

\*\* Dual Diagnosis Screening Instrument.

			<b>Phase 2: Qualitative study</b>		
<b>Recruitment method</b>	<b>Interviewer</b>	<b>DDSI**</b>	<b>Sample size (HCV+ve)*</b>	<b>Recruitment method</b>	<b>Interviewer</b>
Treatment lists/ waiting room recruitment	Researcher	Researcher administered	27.48 (5.85)	Invited for Phase 2 interview following Phase 1	Researcher
Treatment lists	Researcher	Psychologist administered	31.32 (8.62)	Invited for Phase 2 interview following Phase 1	Researcher
Snowballing	Privilege access interviewers (ex users and staff at drop-in)	Privilege access interviewers (ex users and staff at drop-in) administered	24 (15)	Muestra dirigida de la Fase 1	Privilege access interviewers (ex users and staff at drop-in)
Treatment Lists/ waiting room recruitment	Researcher	Researcher administered	25 (6)	Invited for Phase 2 interview following Phase 1	Researcher
Treatment lists/ waiting room recruitment	Researcher	Researcher administered	24 (12)	Invited for Phase 2 interview following Phase 1	Researcher

**Table 5. Recruitment strategy and representativeness of the samples recruited**

Country	Recruitment strategy
Austria	<p>Participants were recruited from a needle-exchange, a psychotherapeutic counseling centre and two outpatient clinics. Most were recruited from the needle-exchange. Recruitment was conducted at different times, week days and weekends to ensure a wide range of FWID were recruited. Participants were recruited by researchers in the lounge- a big living room where many PWID spend much of the day. Recruitment at the counseling center was controlled by staff who invited clients to participate (only two participants were recruited from the centre). The outpatient clinics gave appointments to their clients and those opportunities were used to invite the women to participate.</p>
Italy	<p>Participants were identified by health professionals and recruited in outpatient and residential treatment centres. Health professionals screened patients for eligibility based on their knowledge of the person and attendance in the treatment centre during the time of the study. If consent was given to the health professional, participants were interviewed by a researcher and a psychologist. No refusal rate recorded by staff who did the initial screening (due to privacy reasons). Only 4 FWID who did not attend their interview appointment were unable to be interviewed.</p>
Poland	<p>Participants were recruited by 2 employees of drop-in centre and 2 ex-users, then some participants facilitated further contacts with potential interviewees. In the first stage 25 HCV+ve participants were recruited. Then attempts were made to recruit HCV-ve participants, which required greater effort as this population appeared to be more socially integrated, has less contacts with the drug culture and less likely to use drug services.</p>

**Potential bias****Representative of FWID in city**

	Variables	In mixed methods study	In country
Participants recruited to the mixed methods study were representative of FWID in Austria.	<i>Age</i>	27.48	La media no está disponible pero es similar al % indicado
	<i>Age first injected</i>	19.84	16 – 20
	<i>HCV positive</i>	44 %	25 % – 50 %
	<i>Droga principal inyectada</i>	opiáceos	opiáceos
Participants considered to be vulnerable individuals by staff were automatically excluded. Therefore those who turned up for interview appointments were potentially less problematic injectors. Greater proportion of participants were heroin users than FWID in Italy.	<i>Age</i>	31.32	31.1
	<i>Age first injected</i>	20.18	20 (heroína) 22 (cocaína)
	<i>HCV positive</i>	58 %	61 %
	<i>Droga principal consumida</i>	Heroína 84 %	Heroína 69 %
Most were street drug users, living in hostels and receiving opiate substitution treatment. Majority were former or current clients from the drop-in centre. Potential bias towards women with more severe problems who began injecting earlier, more likely to be amphetamine users than FWID in general. Interviews were conducted by drop-in centre staff and clients therefore could have given socially desirable responses.	<i>Age</i>	34.7	34.5-35.5
	<i>Age first injected</i>	20.2	21.3
	<i>HCV positive</i>	73.5%	75.8%
	<i>% de consumidoras de opiáceos</i>	59%	69 % – 80 %

<b>Country</b>	<b>Recruitment strategy</b>
Scotland	Potential participants identified by staff and if consent was given were interviewed by an experienced researcher. Recruitment rate 67.4% (31/46). Of 31 interviewed, sub-sample of 25 participated in qualitative interview.
Spain	The recruitment was conducted in 3 outpatient drug treatment centers and 2 injecting rooms in Barcelona. Staff from the drug treatment centres provided a list of potential participants. Thereafter, the researcher contacted potential participants with their consent to inform them about the study and invite them to participate. In addition, participants were also recruited in the waiting rooms of outpatient drug treatment centres and injecting rooms. Often centre staff helped by informing the researcher of patients appointment times.

**Potential bias****Representative of FWID in city**

	Variables	In mixed methods study	
		In mixed methods study	In country
Those who turned up for interview appointment were potentially less problematic drug users. While they are representative in age and main drug used of FWID in Scotland, they were less likely to be HCV positive. However 6 participants had cleared HCV – if they are counted as HCV positive the % HCV positive in the REDUCE sample increases to 48%.	<i>Age</i>	34	33
	<i>Age first injected</i>	23	23
	<i>HCV positive</i>	24 %	57 %
	<i>Droga principal inyectada</i>	heroin	heroin
Those women recruited at the beginning were less problematic drug users and had been enrolled in treatment programmes for some time and therefore had a positive relationship with staff. Recruitment of t HCV-ve participants required greater effort. To facilitate this, recruitment was expanded from treatment centres to injecting rooms, where FWID were more likely to be street drug users, younger and mostly cocaine users. Overall the sample was slightly older than FWID in Spain.	<i>Age</i>	39	35
	<i>Age first injected</i>	21	21
	<i>HCV positive</i>	70 %	54 – 71 %
	<i>% de consumidoras de opiáceos</i>	42 %	34.3 %

The drug **most often** injected in the previous 6 months was heroin or other opiates (161/231; 69.7%) and cocaine or stimulants (67/231; 29.0%).

Almost half of the participants had injected every month during the last 6 (107/231; 46.3%). Participants had injected at least once in a mean of 4.12 months (SD 2.07, range 1-6 months).

### 3.3.3 Injecting risk behaviours

Participants were asked how many of all the needles and syringes that they had used to inject in the last 6 months, were new and unused (i.e. from a packet) on a scale of 0 to 10 (where 0 was none and 10 was all). On average participants reported using new and unused (i.e. from a packet) needles and syringes to inject in the last 6 months most of the time (8.58; SD 2.0).

Participants reported most frequently injecting indoors (190/231; 82.3%) in the past 6 months (Table 6). The frequency of injecting alone and with others is shown in *Table 7*.

*Table 6. Location most frequently injected in the past 6 months (n=231)*

<b>Where most frequently injected in the past 6 months</b>	<b>N (%)</b>
House/apartment/flat/ hotel	114 (49.4%)
At a friend's /acquaintance's place	35 (15.2%)
Injecting room	19 (8.2%)
Public toilet	17 (7.4%)
Parents' or family members home	15 (6.5%)
On the streets/ in park	15 (6.5%)
Vacant space/ squat/ stairwell/ car	9 (3.9%)
In a homeless hostel/shelter	6 (2.6%)
Other	1 (0.4%)

*Table 7. Frequency of injecting alone and with others (n=231)*

	Every time	Most of the time	Half of the time	Some of the time	Rarely	Never
Alone	24 (10.4%)	46 (19.9%)	26 (11.3%)	44 (19.0%)	30 (13.0%)	61 (26.4%)
With one other person	39 (16.9%)	78 (33.8%)	27 (11.7%)	40 (17.3%)	22 (9.5%)	25 (10.8%)
With more than one person	1 (0.4%)	14 (6.1%)	8 (3.5%)	50 (21.6%)	55 (23.8%)	103 (44.6%)

The average number of people that participants had injected with was 2.5 (SD 2.3; range 0-15). The 127 participants, who had injected with more than one person in the past 6 months, reported injecting with an average of 3.9 people (SD 2.2; range 2-15). For the 207 participants who reported injecting with at least one other person in the past 6 months, the person that they had done so with most of the time was: their intimate partner (97/207; 46.9%), a close friend (63/207; 30.4%), an acquaintance (41/207; 19.8%), a family member (5/207; 2.4%) or a drug dealer (1/207; 0.5%).

Over half (121/231; 52.4%) of the participants reported that they had ever injected with a needle/syringe that had already been used by someone else. The mean number of times they had injected with a needle/syringe that had been used by someone else in the past 6 months was 11.88 (SD 46.37; range 0-300) ( $p=0.266$ ). For the 66 participants who reported sharing with at least one other person in the past 6 months, the person that they had done so with most of the time was: their intimate partner (36/66; 54.5%), a close friend (13/66; 19.7%), an acquaintance (13/66; 19.7%), a family member (2/66; 3.0%); someone they didn't know (1/66; 1.5%) or other (1/66; 1.5%). In addition they reported injecting with the used needle/syringe in the past 6 months of: an intimate partner (5/66; 7.6%), a close friend (9/65; 13.8%), an acquaintance (7/65; 10.8%), a stranger (2/65; 3.1%), a drug dealer (2/65; 3.1%), and/or a family member (1/65; 1.5%). Participants reported preparation and injecting risk behaviours in their lifetime and in the last 6 months (*Table 8*).

**Table 8. Lifetime and past 6 months preparation and injecting risk behaviours (n=231)^**

<b>Lifetime risk behaviours</b>	<b>N (%)</b>
Injected with the same needle/syringe more than once before discarding it	207 (89.6%)
Used spoons or containers for mixing which had previously been used by someone else	160 (69.3%)
Used an alcohol swab before the injection	144 (62.3%)
Used an alcohol swab after the injection	143 (61.9%)
Injected with needle/syringe used by someone else	121 (52.4%)
Used filters which had previously been used by someone else	117 (50.6%)
Prepared drugs or rinsed your works with water that had already been used by someone else	109 (47.2%)
Shared filters, spoons, cookers or water with someone you knew had HCV	90 (39.0%)
Injected with a used needle/syringe that you were not sure was your own	88 (38.3%)
<b>Risk behaviours in past 6 months</b>	<b>N (%)</b>
Injected with the same needle/syringe more than once before discarding it	188 (81.7%)
Shared a drug with another person after preparing it (i.e. after adding water to make it into a solution)*	170 (73.6%)
Shared a drug with another person before preparing it (i.e. divide up the drug in powder form)*	150 (64.9%)
Used an alcohol swab after the injection	129 (56.1%)
Used an alcohol swab before the injection	123 (53.2%)
Injected with needle/syringe used by someone else	66 (28.6%)
Used spoons or containers for mixing which had previously been used by someone else	120 (51.9%)
Used filters which had previously been used by someone else	82 (35.7%)

Prepared drugs or rinsed your works with water that had already been used by someone else	76 (33.0%)
Shared filters, spoons, cookers or water with someone you knew had HCV	57 (24.8%)
Injected with a used needle/syringe that you were not sure was your own in past 6 months	39 (17.0 %)

^discrepancies due to missing data

\*lifetime frequency for these risk behaviours not asked

The reasons given for injecting with a needle/syringe that someone else had already used are listed in Table 9. The main reasons described were there were no sterile needles/syringes available and withdrawal.

Almost half (58/121; 47.9%) stated they had ever shared needle/syringes with someone they knew was HCV positive and 50.0% (29/58) had done so in the past 6 months. The main HCV positive person with whom they had shared needles/syringes most of the time in the past 6 months was: their intimate partner (15/29; 51.7%), a close friend (7/29; 24.1%), an acquaintance (5/29; 17.2%), or a family member (2/29; 6.9%).

**Table 9. Reason for injecting with a needle/syringe that had been used by someone else in the past 6 months (n=66)**

	<b>All reasons^ N=66</b>	<b>Main reason N=66</b>
There were no sterile needles/syringes available	60 (90.9%)	30 (45.5%)
You knew the person	44 (66.7%)	7 (10.6%)
You were in withdrawal	40 (60.6%)	19 (28.8%)
You were unable to inject without help	26 (39.4%)	2 (3.0%)
You have the same infection as the other person (i.e. hepatitis C, HIV/AIDS)	21 (32.3%)	1 (1.5%)
You did not think the other person had an infection (i.e. hepatitis C, HIV/AIDS)	20 (30.3%)	1 (1.5%)
You did not think it was risky	12 (18.2%)	0
You were too high/stoned/wasted	10 (15.2%)	1 (1.5%)
Other	3 (4.5%)*	4 (6.1%)**
It was impossible to refuse the equipment from that person	1 (1.5%)	1 (1.5%)

^ Not mutually exclusive

\* "I did not feel like going out to buy it", "it's a rule that we are sharing equipment with partner" and "we are together so we are sharing equipment"

\*\* "I did not feel like going out to buy it", "it's a rule that we are sharing equipment with partner", "we are together so we are sharing equipment" and "lot of equipment about and don't know which belongs to who"

In the past 6 months, participants had received needles/syringes from an average of 0.40 (SD 0.77, range 0-4) different people and had passed on their needles/syringes to an average of 0.72 (SD1.43, range 0-10) different people. Participants reported passing their used needles/syringes most of the time in the past 6 months to their intimate partner (32/76; 42.1%), an acquaintance (21/76; 27.6%), a close friend (17/76; 22.4%); a family member (4/76; 5.3%) and a stranger (2/76; 2.6%). In addition, they had also passed their used needles/syringes to an acquaintance (12/76; 15.8%), a close

friend (9/76; 11.8), an intimate partner (6/76; 7.9%), a stranger (3/76; 3.9%) and/or a dealer (2/76; 2.6%).

Just over half of the participants had required help injecting in the past 6 months (123/229; 53.7%) – mostly from their intimate partner (52/123; 42.3%), a close friend (32/123; 26.0%), an acquaintance (28/123; 22.8%), a family member (4/123; 3.3%) or someone they did not know (1/123; 0.8%).

### 3.3.4 Utilization of needle exchange programmes

The majority of participants had ever used a needle/syringe exchange programme (179/231; 77.5%). The principal reasons that participants did not attend needle/syringe programmes were that they did not know they existed or where they were (n=15), that there were no needle/syringe programmes in their area or the distance to travel to one (n=13), that they bought/got their needles from elsewhere (n=11), mainly from a pharmacy, or due to stigma (n=2). Other reasons (n=11) were that the participant had never needed to (n=5), they did not want to or had never gotten around to going (n=3), they were trying to stay away from places where other injectors reside (n=1), they rarely injected (n=1) or lack of time (n=1).

Table 10 describes the proportion of injecting equipment used in past 6 months that was obtained from a needle/syringe exchange programme. While 66.5% (153/230) reported getting new needles/syringes from a needle exchange programme in the past 6 months, only 51.3% reported getting more than three quarters of their new needles/syringes from this source (Table 10). In the past six months participants also obtained new needles/syringes from a pharmacy exchange (129/231; 55.8%), a mobile needle exchange (86/231; 37.2%), a close friend (82/231; 35.5%), a partner (73/231; 31.6%), an acquaintance (68/231; 29.4%), a medical clinic (47/231; 20.3%), an injecting room (44/231; 19.0%), a stranger (24/231; 10.4%), a shooting gallery (8/231; 3.5%), a hospital (8/231; 3.5%).

**Table 10.** Proportion of injecting equipment used in past 6 months that was obtained from a needle/syringe exchange programme (n=230)<sup>^</sup>

	None	About a quarter (1 – 25%)	About a half (50%)	Between a half and three quarters (50 – 75%)	More than three quarters (75 – 100%)
Needles/ syringes	77 (33.5%)	14 (6.1%)	9 (3.9%)	12 (5.2%)	118 (51.3%)
Filters	132 (57.4%)	4 (1.7%)	7 (3.0%)	13 (5.7%)	74 (32.2%)
Spoons/ cookers	116 (50.4%)	9 (3.9%)	11 (4.8%)	10 (4.3%)	84 (36.5%)
Water am- poules	123 (53.7%)	17 (7.4%)	9 (3.9%)	12 (5.2%)	68 (29.7%)
Citric acid or Vit C sachets	186 (80.9%)	1 (0.4%)	7 (3.0%)	3 (1.3%)	33 (14.3%)
Wipes/swabs	105 (45.7%)	8 (3.5%)	9 (3.9%)	12 (5.2%)	96 (41.7%)
Sharps bins	170 (73.9%)	4 (1.7%)	6 (2.6%)	7 (3.0%)	43 (18.7%)

<sup>^</sup> Discrepancies due to missing data

### 3.3.5 HCV status

The majority of participants had ever had a HCV test (226/231; 99.1%), of those 58.0% (131/226) were HCV positive.

### 3.3.6 HCV transmission knowledge

Most participants considered their knowledge of HCV transmission to be fair (102/230; 44.3%) or good (90/230; 39.1%). However, Figure 2 illustrates that there were still many misconceptions around how HCV is transmitted and major gaps in HCV transmission knowledge. The mean HCV knowledge transmission score was 39.28 (SD 5.92, range 20-52).

Figure 2. HCV transmission knowledge among FWID

Risks FWID were aware of (>70% were aware)	Risks FWID were NOT aware of (>30% were not aware)	Misconceptions (>30% believed)
		
Sharing needles, spoons, filters, toothbrushes and razors	Sharing rinse water	There is a HCV vaccine
Front and backloading	Sharing drug preparing water	People can get HCV by injecting without ever sharing injecting equipment
Flushing injecting equipment with tap water does NOT destroy HCV	Sharing tourniquets	HCV transmitted through contact with saliva, tears, sweat, or urine
Wiping injection site with a swab or tissue, that had been used by another person	Bleaching or boiling needles is NOT a safe way to avoid getting HCV	People can get HCV by donating blood
Needle stick injuries	Touching an injection site of someone else (e.g. to feel for a vein, to wipe away, or to stop bleeding)	It is possible to contract HCV from re-using own equipment that no one else has used before
Blood contact, even with one exposure or a tiny amount of blood	Licking or sucking left over drugs from shared equipment	People can only get HCV if they have HIV
Tattoos and body piercings	HCV can survive in a shared needle that had not been used for over a month	Easier to get HIV than H
Sharing kitchen cups, plates or utensils, coughing and sneezing, hugs, handshakes or holding hands, food, air and toilet seats do not spread HCV	Sharing pipes when smoking drugs	People can get HCV by deep kissing, putting the tongue in the partner's mouth, if the partner has HCV
Re-infection possible	Snorting cocaine with shared straws, rolled money, etc	Washing hands before and after injecting will help people to prevent the risk of passing on HCV
Mother to child transmission	There are more than one type of HCV	HCV spread by mosquitoes or other insects
Unprotected vaginal, anal and oral sex	Breastfeeding	
Sharing sex toys		
Even healthy looking people can transmit HCV		

### 3.3.7 Prison

Almost half of the participants had ever been in prison or a young offenders' institution (100/231; 43.3%), a mean of 1.66 times (SD 4.07; range 0-35). Seventeen percent (17/100) of those who had ever been incarcerated had injected in prison.

### 3.3.8 Intimate relationships

Of those who replied, 39% (89/228) were not currently in a relationship and 61.0% (139/228) were currently in a relationship. The majority reported that their most recent or current partner was male (220/228; 96.5%) and had ever injected drugs (157/227; 69.2%). The majority reported that they had had vaginal sex in the previous 6 months of their current or most recent relationship (196/227; 86.3%). Anal sex was less common. Condom use was not usually used with partners for vaginal or anal sex. Over a third of participants stated their usual form of contraception was "none" (78/227; 34.4%), 41.4% (94/227) stated condoms, 10.1% (23/227) used the contraceptive pill, 4.8% (11/227) used the contraceptive implant, 3.1% (7/227) used the coil/UD, 2.6% (6/227) had been sterilised, 0.4% (1/227) reported that their partner had had a vasectomy and 3.1% (7/227) reported they used another form of contraception.

Thirty seven percent reported that their current or most recent partner was HCV positive (84/227).

### 3.3.9 Intimate partner violence

Overall, 70.4% (159/226) of participants had experienced intimate partner violence in the past 12 months of their current or most recent relationship. The most common type of violence experienced was severe combined sexual and physical abuse (90/226; 39.8%); followed by physical abuse with emotional abuse (36/226; 15.9%) and emotional abuse and/or harassment (24/226; 10.6%). It was less common for participants to experience physical intimate partner violence without any other forms of violence (9/226; 4.0%).

### 3.3.10 Psychiatric disorders

The majority of participants reported at least one lifetime comorbid psychiatric disorder (200/229; 87.3%), the mean number of lifetime disorders were 3.03 (SD 2.11, range 0-7). The most common lifetime psychiatric disorders were depression (174/229; 76.0%); panic disorder (124/229; 54.1%) and PTSD (120/229; 52.4%). Seventy seven percent (176/229; 76.9%) met criteria for any lifetime affective disorder and 76.9% (176/229) met criteria for any lifetime anxiety disorder.

## 3.4 Qualitative results

### 3.4.1 Introduction

The first phase of the REDUCE-project included quantitative structured interviews with 231 FWID in the past six months. A sub-sample of 125 of these 231 participants were purposively selected (to include diversity in age, primary substance of abuse, HCV status and risk behaviours) to participate in an in-depth interview in phase 2 to explore their knowledge and understanding of HCV transmission and the associated injecting and sexual risk behaviours. Selection criteria included age, HCV status, mental health status and intimate partner violence experienced.

Eligible participants (women aged  $\geq 18$  years, that had injected drugs within the six months prior to interview) from the participating countries were recruited through a range of services including outpatient addiction clinics, community addiction teams, harm reduction services and rehabilitation projects. The interview duration ranged from around 20 minutes to 1½ hours. Each interview was conducted in the participants' native language, mainly at treatment centres.

### 3.4.2 Results

The participants were aged between 18 and 57 years old. Sixty (48%) reported their HCV status as positive; 60 (48%) as negative; and five (4%) did not know their status. The women had first injected between the ages of 12 and 38 though most started injecting in their twenties. Most participants (81/125, 65%) had a regular partner, whilst the remainder were single. The majority were able to inject themselves although some needed help with injecting either due to inexperience or because they needed assistance to access their veins.

*Table 11. Number of participants, age range and HCV status by country*

Country	N	Age range (mean)	HCV positive	HCV negative	HCV status unknown
Austria	28	18 - 43 (27)	14	14	–
Italy	24	20 - 50 (30)	13	11	–
Poland	24	23 - 57 (33)	15	9	–
Scotland <sup>1</sup>	25	20 - 45 (34)	6	14	5
Spain	24	24 - 48 (39)	12	12	–
<b>Total</b>	<b>125</b>	–	<b>60</b>	<b>60</b>	<b>5</b>

<sup>1</sup> 6 FWID who believed they were currently HCV negative reported clearing the virus following treatment.

### Information about HCV risk and transmission knowledge

A number of questions were asked in order to explore the participants' sources for obtaining HCV information, and their knowledge of the risk behaviours associated with HCV transmission.

#### Acquisition of information

Participants reported that their main sources of HCV information were health service providers, drug treatment services, non-government organisations (NGOs) and peers. Other sources of information included leaflets and brochures, the internet and prison. While the women often obtained their information from a range of sources, health service providers were the main information source in Scotland, Spain, Italy and Austria; in Poland, the main source of HCV information was peers. The availability of written information was viewed as poor by respondents in Poland though this view was not echoed elsewhere. In general, information provided by professionals and in brochures was regarded as more reliable, while information provided by other drug users was generally considered less reliable:

*“I do not consider friends to be a reliable source of information (about HCV). There is, among them strange myths about how you can be infected. Many people have the wrong idea about it”* (Poland: ID 16, amphetamine, 41 years old, HCV positive).

*“Yes... but if it comes from the street... they say anything because I have heard lots of different things but I think it’s true only if it comes from a professional or leaflets... the rest, I don’t know”* (Spain: FM07, cocaine, 28 years old, HCV negative).

Many women sought information following diagnosis of HCV infection either of themselves or of friends. Other reasons included entering treatment for HCV, pregnancy and concerns around previous injecting risk behaviours (e.g. equipment sharing). Although some women across the countries were pro-active in seeking and keeping up-to-date with information, many were passive or disinterested. Using drugs, testing negative, or believing no new information was required, were the main reasons for not seeking up-to-date information. A small number of participants believed that once infected, there was no reason to acquire further information and in Poland, Italy and Scotland some women thought that HCV infection was a less serious threat to their health than HIV *“I was careful mainly about HIV because at the end of the day, rightly or wrongly, I’ve always perceived hepatitis C as more manageable compared to HIV”* (Italy, ID 42, heroin, 33 years old, HCV negative). In Spain, some HCV negative respondents said they did not seek further information as they considered themselves occasional users and tended to minimise the risk of infection although those with a higher level of education showed a more pro-active attitude to gaining new knowledge on the virus.

### **Transmission Knowledge: Understanding and false beliefs**

Although all participants reported that they had received information on HCV transmission, the level of knowledge was often incomplete and incorrect. Most were aware that the HCV virus was transmitted through blood to blood contact but fewer were aware of sexual transmission. Some of the women were not aware of the transmission risks associated with sharing water or other injecting paraphernalia, which is particularly concerning as sharing injecting paraphernalia is an important source of infection, *“I knew that it was possible to get infected by using shared needles and syringes and that infection occurs through blood but I didn’t know that sharing a cooker to prepare a drug was dangerous, too”* (Poland: ID 15, heroin, 42 years old, HCV positive).

A number of myths were prevalent among the women. For example, some women thought they could get infected by re-using their own needles (Austria, Italy and Poland); that sexual transmission was only possible during menstruation (Austria and Spain); that one could not be infected more than once with the virus (Scotland); and that the virus could be transmitted through saliva (Scotland), semen (Spain) or touch (Poland).

Even among participants who were reportedly aware of HCV transmission risks there was still a level of risk-taking. This dissonance between what was known about avoiding viral transmission and risky injecting practices was explained by a number of factors including the need to ameliorate withdrawal symptoms, drug cravings, presumed immunity and a belief that contracting the virus is inevitable for most injecting drug users.

### **First experience of injecting**

Most of the women experienced their first injecting episode in the company of a partner or friend who were often more experienced users and helped the participants to prepare and inject. Some women were injected by multiple users before being able to inject themselves thus increasing the risk of viral transmission. The main reasons for starting to inject were economics/maximising the effect, curiosity and partner/peer influence, *“I didn’t want to inject and he forced me to try this thing, I was in love and I did.”* (Italy: ID 26, cocaine, 44 years old, HCV negative following successful treatment).

### **Injecting risk behaviours**

The following section explores the injecting risk behaviours of the study participants including the settings in which injecting takes place, the purchase and disposal of injecting equipment and issues of safety including preventative injecting risk behaviours.

#### **Setting**

The majority of participants in all participating countries tended to inject in the company of others. It was rare for women to inject alone. Injecting was more frequently practised in a private setting (e.g. their own/other users’ home or car). Spain reported that half their sample practised ‘occasional’ outdoor injecting however, similar to participants from Poland, these women

were aware that injecting in public spaces was riskier due to their engaging in more frequent equipment sharing and being less able to take precautions such as accessing sterile water, *“If we take drugs in the stairwell, I use common water and rinse the equipment in a shared bottle”* (Poland ID 5, heroin, 36 years old, HCV positive). Injecting rooms were available in Spain, which were used predominantly by the younger women in the sample, *“I spend a lot of time here, in the injecting room. I don’t have a home. I think it is always better here than on the street”* (Spain: JT34, cocaine, 24 years old, HCV positive); while older females tended to inject in private and alone, *“I used to do it in the street. That was before, when I was younger. But now, I prefer a more tranquil place, I just do it at home, with my stuff, my sofa, I take my time...”* (Spain: JT46, heroin, 46 years old, HCV positive). The older respondents reported feeling less secure and more vulnerable when injecting outside.

Similar to outdoor injecting, women reported engaging in riskier behaviours when injecting in groups. For example, in Poland, women reported that equipment sharing increased, either accidentally because people were unsure as to what equipment was theirs or as a result of a lack of available sterile needles and syringes. In Poland, participants believed there were not enough sterile needles and syringes available in exchange sites to distribute among the injecting group; and the needles and syringes that could be bought in pharmacies sometimes did not meet the needs of drug injectors.

### Purchase and disposal

AClean injecting equipment is largely accessed through needle exchange programmes. In Spain and Scotland, women stressed the benefits of being able to access all the equipment needed for a safe injection episode together in one kit (e.g. sterile needle/ syringe, filters, swabs, cookers and water). In Scotland, these were mainly accessed through pharmacy needle exchanges; in Spain, the respondents mainly accessed injecting rooms and pharmacies; in Italy women bought their kits from local pharmacies and automatic dispensers and obtained them for free from exchange services. In Austria most participants regularly visited a needle exchange facility; few got their new and sterile needles and items from friends. Poland’s respondents were less positive about the availability of injecting equipment – citing difficulties in obtaining sterile equipment, lack of adequate supplies in pharmacies, negative attitudes from pharmacists and lack of money to buy equipment. However, across all countries, access to equipment remained a problem

for some women particularly in relation to available and accessible needle exchange sites and cravings, whilst withdrawal often prevented women making the effort to obtain new equipment.

In terms of disposal, most participants returned used needles to the exchange sites – usually in cin bins or other safe disposable containers. Italy and Austria do not supply sharp items bins. In Italy, most participants disposed of their equipment in a bin either at home or in the street. Needles were usually re-capped for safe disposal and a few women mentioned this as a preventive measure against accidental needle-stick injuries to others. Some participants retained used needles for later use – usually as a stop-gap when no new needles were available; a few admitted they would pass on their used needles to other users experiencing withdrawal symptoms, *“When someone feels really bad withdrawal symptoms? Yes, I would hand him my needles. To help him...”* (Austria: ID RED 17, 31 years old, HCV positive). A number noted that they often shared a bag for re-used needles with an injecting partner and while some marked the syringe barrels in order to identify their needle, others simply placed the used needles in a bag without any identification thus increasing their risk of re-using someone else’s (possibly) contaminated needle, *“I don’t know, I have them (syringes) there I take them out and mine is the same as his, I mean I don’t share them on purpose, I mean it is just the fact that they are there (...) when I put them in the bag I wouldn’t think of marking it, you know, my friends always marked them, but after a while I didn’t think of doing it anymore, I would put it in the bag and then take it out and use it, we weren’t sure which was which, so for sure we shared, but it wasn’t something we wanted to do it was just that we were there together and we just took them and injected”* (ID 5, cocaine, 24 years old, HCV positive).

Some women cleaned their used needles with water and/or alcohol for later use before placing in bags but a few mentioned placing dirty needles in a bag and cleaning them at next use.

### Preparation and injecting

A large proportion of women reported cleaning their injection sites either before and/or after injecting. In Spain, Italy and Scotland at least, the injecting kits distributed contained alcohol swabs for cleaning the skin. Nevertheless, participants also reported using tissues, towels, cotton, baby wipes and even paper from cigarette packets.

Across all countries the majority of women had shared injecting equipment at some point in their injecting career. Important differences were noted in terms of preparing drugs for injection. Where injecting is done alone, the women noted that they have more control over the process and take fewer risks in terms of sharing equipment. Injecting in groups or with a partner however carries more risk as there are opportunities for equipment sharing particularly the cookers, water and filters. Although most of the women interviewed were aware of the transmission risks associated with needle sharing it was common practice to share cookers, filters and water. In Scotland and Italy, women described sharing cookers, filters and water to draw up a drug solution into individual needles. In Spain and Poland it was more common for women to describe a process of front- or back-loading.<sup>1</sup> In Italy, seven women described front-loading and back-loading, though only two mentioned using new syringes/needles, the rest reported doing so with used or “sterilised” syringes. In Austria front and back-loading was not common practice.

A common theme that emerged across all countries was the description of informal rules during drug preparation and injection. In Italy, Poland Scotland and Spain, women described how those users with more experience would prepare the injection – this was particularly common among novice injectors or those unable to inject themselves. Preparation and order of injecting was also determined by those who provide the most money to buy the drugs. Issues of ‘trust’ are another important factor particularly for those women unable to inject themselves – trust itself was often predicated on how well the other person was known to the respondent (e.g. long-term relationship/sexual partners) and the knowledge and experience of the injecting partner. A small number of participants mentioned relinquishing control of the preparation process because the partner preferred to take control and they felt unable to negotiate or insist on safe injecting practice. Similarly, intimate partner violence limited participants’ ability to avoid sharing equipment with aggressive/dominant partners, *“Aye, too scared to say to him, I don’t want to use*

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<sup>1</sup> Front/ backloading involves drawing up a prepared drug solution into one syringe which has a needle attached. Then some of the solution is squirted back into the other syringe/s either through the front end where the needle is removed (frontloading) or through the back end where the plunger is removed (backloading).

*yours, in case I got another smack in the jaw. I was too scared, I've done it before with him and I just... och I don't want to go into it, but I'd just end up with a smack on the mouth"* (Scotland: ID 2023, cocaine, 39 years old, HCV positive).

Depression and apathy were also cited as a reason for not adopting harm reduction measures due to low motivation, *"Well, you don't give a shit at that moment, when you feel down... you just don't care"* (Spain: JT43, cocaine, 36 years old, HCV positive).

A few participants in Italy, Scotland and Spain noted that it was rare for users to discuss their serology status when injecting in groups though this was not the case in Poland. In Poland women reported informing and asking others about their HCV and HIV status and deciding on that basis whether to share equipment or not, while in Austria it was not uncommon for participants to discuss HCV with their partner or friends.

## **Sexual behaviour**

The majority of participants were heterosexual and were, or had been, in long-term intimate relationships. In Austria, half the sample reported using condoms during a relationship. However in Spain, Scotland, Italy and Poland condom use was not regularly practised in relationships – indeed most of the participants in Poland used no contraception at all. The main reasons for not using condoms during sex were trust and intimacy within long-term relationships; lack of assertiveness; previous or current intimate partner violence resulting in fear (perceived or actual) of a partner's reaction if asked to use a condom; being 'caught up in the moment'; disinterest; and reduced sexual sensation:

*"My partner says that if I want to use a condom, it means that I do not love him and I'll leave him in the future"* (Poland: ID 15, heroin, 42 years old, HCV positive).

*"Yes with my relationship that homeless guy. He refused (to use a condom) furthermore, he hit me in the face. I was afraid, I couldn't say 'use it' twice"* (Spain: JT35, heroin, 45 years old, HCV positive).

In some cases partners would refuse to wear condoms although others reported that their partners were willing to wear condoms and either engaged in a joint decision, or insisted on the use of condoms. Condoms were rarely

used in cases where both partners were HCV positive as the risk of becoming infected with a different genotype of HCV was not widely considered.

A small proportion of women would ask new partners to undergo tests for sexually transmitted infections (including HCV) and a larger proportion reported that they would insist new or casual partners wore condoms. Very few participants in the overall sample were involved in prostitution but those who did reported that condoms were usually always worn (exceptions when clients would offer increased payment for sex without a condom) and a few mentioned using condoms during oral sex. Anal sex was rarely practised and only in Spain was it reported as the most risky type of sex for viral transmission. Oral sex was generally not mentioned or considered a risk factor. Interesting was the perception that no protection was available for lesbian intimate relations. Although some participants were aware that unprotected sex was a risk factor for HCV transmission, knowledge of this issue was not as well observed as that for injecting behaviours. Nevertheless, even among those who did have an awareness of the risks, there still remained a dissonance between their knowledge and actual practise.

## **Infection and prevention**

This section explores the participants understanding of their HCV status in terms of how they consider they may have caught or avoided the virus.

Participants who reported being HCV negative adopted a number of strategies that may explain how they had avoided transmission. Most did not share (or reduced their sharing of) needles or other injecting equipment; some used condoms; others would mark their injecting equipment to ensure re-used needles were their own. A small number of women in most countries attributed their negative status to '*luck*'.

Almost half (48%) of the participants had contracted HCV at some point during their injecting career. Most believed they had been infected through sharing needles and other injecting equipment (e.g. cookers and filters). In Poland women did not associate HCV transmission with the use of shared rinse water although some of them mentioned lack of hygiene or dirt as reasons for viral transmission. In Italy, the possibility of becoming infected through sharing needles and/or syringes was known, but the fact that one

could get infected from sharing other equipment was sometimes only learned during the interview. Very few women believed they had acquired the virus through sexual transmission as most assume that transmission via this route is minimal (either because they have taken precautions to minimise sexual risk or because they believe the risk is low).

Following diagnosis, most participants engaged in safer injecting practices – particularly in terms of avoiding sharing needles and equipment. A small minority made no changes – either because they already engaged in safe injecting practices or because sharing was habitual. Some participants disclosed their positive status to other users – leaving the decision to share equipment to the injecting partner(s). Preventing harm to others, in particular other family members and children, was an important strategy for a number of women; they avoided sharing items such as nail clippers, toothbrushes and razor blades. Some reported using condoms to protect partners from sexual transmission. Women who engaged in outdoor injecting reportedly tried to secure access to clean water to rinse used equipment. Others injected at home to ensure preparation and injecting could be done safely without hurrying.

## **Intervention**

In all participating countries, there was universal support for the delivery of an intervention on HCV transmission risks and strategies to avoid infection. Participants were keen to benefit from learning assertiveness behaviour skills around injecting and sexual health and thought more knowledge around HCV would benefit not just them but also younger/novice injectors.

There was a mixed response as to whether the intervention should be delivered in a group setting or on a one-to-one basis. Those who would prefer individual sessions cited reasons such as fear of possible group conflicts, embarrassment and lack of confidence. Some felt they would be more open to discussing personal topics and behaviours with a worker and that individual sessions would ensure anonymity and confidentiality. Some women reported that they were embarrassed or feared being judged by others in relation to their HCV status. Alternatively, the advantages of a group setting were that experiences could be shared and discussions would be more interesting. Group work was also perceived to be more friendly and

dynamic than one-to-one sessions. In Italy, group work was the preferred option. Most participants from Austria, Italy and Poland thought involving partners in the intervention would be positive as it would allow partners to gain knowledge around HCV transmission risks and provide support to the women. Conversely, in Spain and Scotland the majority did not want partner involvement as they felt they would be less able to share their opinions and experiences with partners present.

## Summary

In summary, the findings show similarities among participants from different countries in terms of information gathering, knowledge and injecting behaviours. While some differences were identified, the general overview suggests a need to improve the understanding of HCV transmission risks among FWID that pro-actively encourages and supports injecting and sexual health behaviour changes.

Although HCV information was obtained through a range of sources, the information considered most reliable was that provided by professionals. Despite the availability of widespread HCV transmission information, there remained a number of significant gaps in knowledge: namely the transmission risks associated with sharing water for preparation and rinsing, and sexual transmission risks. Furthermore, a number of false beliefs or myths appeared to be embedded in the culture of injecting drug use regardless of country. There was also some indication that further information was required regarding the relative risks associated with HIV/AIDS and increased risk for HCV transmission.

Cognitive dissonance was identified, despite being aware of the HCV transmission risks associated with blood-to-blood contact, participants continued to engage in unsafe injecting practices – notably the sharing of injecting paraphernalia. Physical drug withdrawals and cravings explain why sharing occurred in some cases. However reported beliefs such as ‘luck’ or ‘inevitability’ were inconsistent with participant’s actual knowledge and would benefit from further investigation to explore the extent to which they influence injecting behaviours.

The findings also strongly indicate that those who were unable to inject themselves were dependent on fellow users and were less able to negotiate or insist on the use of clean, separate injecting equipment. This in turn increased their risk of HCV transmission. The same situation applied to the small number of participants who reported that partners preferred to control the injecting process. Training on negotiation and assertiveness skills may enable women to feel more confident about raising the issue of and insisting on the use of sterile injecting equipment and condoms. Similar to sharing injecting equipment, trust and intimacy and lack of assertiveness are key factors in sexual risk-taking behaviours.

### 3.5 Triangulation of the mixed methods data

*Table 12* brings together the findings from the quantitative and qualitative parts of the study to describe the internal (attitude/motivation, knowledge/skill and situation) and external (culture and policy) factors associated with the injecting and sexual risk behaviours reported, and provides recommendations for service development to assist FWID reduce these behaviours.

**Table 12.** Triangulation of mixed methods data and recommendations resulting from research findings

Behaviour	Internal factors	
	Attitude/Motivation	Knowledge/skill
<b>Injecting risk behaviours</b>		
Sharing needles and syringes (including back-loading and front-loading)	Inevitability; trust; perceived stigma; apathy; cravings/ withdrawal; partner HCV status; cognitive dissonance (know risk but continue to take risk)	Low/lack of knowledge; inexperience; false beliefs; no disclosure of status; lack of assertiveness/ negotiation skills
Sharing paraphernalia (water, cooker, tourniquet, filter, swab)	Inevitability; trust; perceived stigma; apathy; cravings/ withdrawal; partner HCV status; cognitive dissonance (know risk but continue to take risk)	Low/lack of knowledge; inexperience; false beliefs; no disclosure of status; lack of assertiveness/ negotiation skills
Outdoor injecting	Apathy; craving/withdrawal	Lack of assertiveness; low/ lack of knowledge; inexperience; false beliefs; no disclosure of status
Injecting in company	Trust; apathy; cravings/ withdrawal; cognitive dissonance	Inexperience; lack of knowledge; lack of assertiveness/negotiation skills; no disclosure of status
Cleaning needles	Trust; perceived stigma; partner HCV status; cognitive dissonance (know risk but continue to take risk)	Low/ lack of knowledge; false beliefs
Re-use own needle	Trust; apathy; cravings/ withdrawal	Low/ lack of knowledge

External factors			Recommendation
Situation	Culture	Policy	
Lack of accessibility (distance from pharmacy, lack of needle exchange programmes, lack of money, etc); injecting outdoor; homeless	Perceived stigma; norm to inject together; stimulant use higher risk	Lack of HCV education; lack of information on availability of services, especially needle exchange programmes; lack of free needles/ syringes	<i>Increase HCV education by GP and health professionals; provide wider information on services; free provision of needles/syringes</i>
Lack of accessibility (distance from pharmacy, lack of needle exchange programmes, lack of money, etc); injecting outdoor; homelessness	Perceived stigma; norm to inject together; stimulant use higher risk	HCV education does not focus on risk of sharing paraphernalia, lack of free equipment; injecting kits do not contain water (Scotland recently began providing water in kits)	<i>HCV education should include transmission risks associated with sharing injecting paraphernalia; free provision of paraphernalia</i>
Lack of private space such as injecting rooms	Perceived stigma; norm to inject together	Lack of fit for purpose places to inject such as injecting rooms	<i>Provision of fit for purpose places to inject such as injecting rooms</i>
	Informal rules; norm to inject together; trust/love	Lack of HCV education	<i>Increase HCV education by GP and health professionals</i>
Lack of accessibility (distance from pharmacy, lack of needle exchange programmes etc); Lack of fit for purpose places to inject such as injecting rooms	Usual behaviour	Lack of fit for purpose places to inject such as injecting rooms; lack of information on availability of services, especially needle exchange programmes	<i>Provision of fit for purpose places to inject such as injecting rooms; wider provision of information on services available</i>
Lack of accessibility (distance from pharmacy, lack of needle exchange programmes etc); Lack of fit for purpose places to inject such as injecting rooms	Usual behaviour	Number of needles/kits availability from needle exchange programmes	<i>No limit to number of needles/ kits provided at needle exchange programmes</i>

Behaviour	Internal factors	
	Attitude/Motivation	Knowledge/skill
Storage	Trust; perceived stigma; partner HCV status; apathy	Low/ lack of knowledge; false beliefs
Injected by other	Trust; apathy; cravings/ withdrawal; relinquishing control; informal rules; cognitive dissonance (know risk but continue to take risk)	Low/ lack of knowledge; inexperience; lack of assertiveness/ negotiation skills; no disclosure of status
Preparation by other	Trust; apathy; cravings/ withdrawal; relinquishing control; informal rules; cognitive dissonance (know risk but continue to take risk)	Low/ lack of knowledge; lack of assertiveness/ negotiation skills; inexperience; no disclosure of status
Poor hygiene	Apathy; cravings/withdrawal	Low/ lack of knowledge

**Non male or female condom use**

Vaginal sex	Trust and intimacy; apathy; previous or current intimate partner violence (IPV); cognitive dissonance; partner has same HCV status or is HCV negative; reduced sexual sensation; embarrassment	False beliefs about sexual transmission of HCV; lack of knowledge; lack of assertiveness to negotiate condom use
Anal sex	Trust and intimacy; apathy; current IPV; cognitive dissonance; partner has same HCV status or is HCV negative	False beliefs about sexual transmission of HCV; lack of knowledge; lack of assertiveness to negotiate condom use
Oral sex	Trust and intimacy; current IPV; cognitive dissonance; partner has same HCV status or is HCV negative	False beliefs about sexual transmission of HCV; lack of knowledge; lack of assertiveness to negotiate condom use

External factors			Recommendation
Situation	Culture	Policy	
Lack of accessibility (distance from pharmacy, lack of needle exchange programmes etc);	Usual behaviour	Lack of HCV education	<i>Increase HCV education by GP and health professionals</i>
Dominant partner; more experienced users	Usual behaviour	Lack of HCV education	<i>Increase HCV education by GP and health professionals</i>
Dominant partner; more experienced user; purchaser of drugs; more stable user	Usual behaviour	Lack of HCV education;	<i>Increase HCV education by GP and health professionals;</i>
Poor availability of swabs; lack of money	Usual behaviour	Lack of HCV education; Lack of availability of swabs	<i>Increase HCV education by GP and health professionals; increase availability of swabs</i>
Prostitution; multiple partners; partner refusal; lack of accessibility to condoms; lack of money to buy condoms	Habitual behaviour	Lack of HCV education; lack of sexual education	<i>Increase HCV and sexual education by GP and health professionals</i>
Prostitution		Lack of HCV education; lack of sexual education	<i>Increase HCV and sexual education by GP and health professionals</i>
Prostitution		Lack of HCV education; lack of sexual education	<i>Increase HCV and sexual education by GP and health professionals</i>



## 4. Developing and testing a psychosocial intervention to reduce HCV sexual and drug taking risk behaviours and increase HCV transmission knowledge among FWID in Europe

### 4.1 Developing the REDUCE intervention

The development of the REDUCE psychosocial intervention was informed by:

- A systematic review of the existing literature.
- A European best practice survey.
- Views of FWID.
- Expert knowledge.
- The REDUCE mixed methods study.

#### 4.1.1 European best practice survey

A survey was sent to key stakeholders from the European Union to determine the range of HCV prevention strategies across Europe to reduce HCV risk behaviours and increase HCV transmission knowledge among FWID. The European Monitoring Centre for Drugs and Drug Addiction facilitated the identification of key stakeholders, through the CORRELATION network. In addition the International Network on Hepatitis in Substance Users agreed to distribute the questionnaire.

In total, 31 surveys were received from 22 countries across Europe, mostly completed by non-governmental organisations (NGO) working with drug users. Of the 22 different countries that completed at least one questionnaire,

14 reported that psychosocial interventions were offered to PWID to reduce HCV risk behaviours and/or increase HCV transmission knowledge. Eighteen interventions were described but only seven specifically addressed the needs of FWID. While none of these seven interventions had been tested using randomised controlled trial methodology their content was reviewed for the purpose of developing the REDUCE intervention.

#### 4.1.2 Systematic review of the literature on the efficacy of psychosocial interventions to reduce HCV risk taking behaviours and increase transmission knowledge

A systematic review was conducted to determine the efficacy of psychosocial interventions to reduce sexual and risk taking behaviours and increase knowledge of HCV transmission among drug users. Medline, EMBASE, the Cochrane Clinical Trial Database and PsycINFO were searched to identify randomised controlled trials and intervention studies until February 2012 using a search strategy. In addition, bibliographies were hand-searched for potentially relevant studies. Psychosocial interventions were defined as non-pharmacological interventions that aimed to change individual behaviours.

None of the 11 trials identified were interventions aimed specifically at FWID. Manuals from interventions that effectively reduced risk behaviours or increased transmission knowledge were sourced for review. Much of the sessions on HCV risk behaviours were adapted or reproduced with permission from the DUIT study [24]. In addition sessions on managing negative mood were adapted or reproduced with permission from the Women's Wellness Treatment [25] and the Behavioural Modification for Drug Dependence [26-28]. Factsheets and information from the [www.HCVAdvocate.org](http://www.HCVAdvocate.org) and [www.hiwecanhelp.com](http://www.hiwecanhelp.com) were also included with permission.

#### 4.1.3 The intervention

A three session brief group intervention was developed for delivery by a professional (e.g. psychologist, nurse, educator etc.). Permission was sought from original authors of any adapted materials and is detailed throughout the

intervention. Each session lasted 2 hours including a 15 minute break. The sessions covered:

- Session 1. Understanding Hepatitis C transmission risks.
- Session 2. Hepatitis C and sexual wellbeing – negotiating safety.
- Session 3. Hepatitis C and emotional wellbeing – reducing negative mood.

## 4.2 Testing the intervention

The evaluation assessed whether FWID reported any changes in HCV transmission knowledge and risk behaviours following participation in the three session psychosocial REDUCE intervention. Participants and intervention providers were also asked about the feasibility and acceptability of participating in and delivering the intervention.

### 4.2.1 Participants and recruitment

Females aged 18 years and older and who had injected heroin or other opiates, cocaine or amphetamines **in the previous month** were eligible to participate.

Participants in Austria were recruited from a day care centre and syringe exchange institution. Two participants in the intervention had also participated in the mixed methods study. In Italy, FWID were identified by the psychiatrist and recruited to the intervention study from a treatment centre that was not involved in the mixed methods study. FWID who participated in the intervention in Poland were recruited from a drop-in centre for drug users. One Polish intervention participant had completed the mixed methods study. Potential participants were identified by nurses and by the researcher in the waiting room at two outpatient drug treatment centres in Scotland. Consent was given by the potential participants to the nurses to allow the researcher to contact them for recruitment. None had participated in the mixed methods study. In Spain, FWID who participated in the intervention study were participants from the mixed methods study that met criteria and were interested in participating in the intervention study. Therefore, recruitment procedures varied among countries. The 11 participants who had already participated in the mixed methods study may have been more familiar with the HCV knowledge questionnaire. However, in the mixed methods study, there was no evidence to suggest any differences in HCV transmission knowledge across countries ( $p=0.076$ ).

In all countries, participants were reminded of the intervention times and dates by telephone and/or text on the day before and/or on the morning

of the intervention session they were due to attend. Participants received vouchers for their time following each intervention session and following completion of the research interviews.

#### 4.2.2 Outcome measures

The HCV knowledge transmission questionnaire developed by the REDUCE project was administered to participants at baseline, the end of the intervention and one month post intervention. In addition, drug and sexual risk behaviours in the previous month (taken from the REDUCE mixed methods study questionnaire) were assessed at baseline and at one month post intervention. The Patient Health Questionnaire (PHQ-9) <sup>[29]</sup> assessed depressive symptoms experienced in the two weeks prior to baseline and in the two weeks to the one month post intervention follow up.

#### 4.2.3 Intervention delivery

The intervention was delivered in outpatient drug treatment settings by a Clinical Psychologist in Austria, Italy and Spain. In Poland, the intervention was delivered by two Health Educators (both attended all sessions), and in Scotland, the intervention was delivered by an HIV/HCV Nurse. A researcher attended each session to check the fidelity of the intervention delivered against the manual.

#### 4.2.4 Analysis

Paired t-tests were used for continuous data and McNemar tests for matched pairs were used for categorical data to compare pre and post intervention findings. Intention to treat analysis was conducted to ensure that all participants who began the treatment were included in the analysis, whether they completed all three sessions of the intervention or not. Therefore, if the participant did not complete one or more of the follow up questionnaires, the responses from their most recent assessment were used. Imputation of

data was conducted for five cases at the end of intervention assessment (HCV knowledge questionnaire only) and for four cases at one month post intervention.

## 4.3 Results of the evaluation

### 4.3.1 Compliance and retention

Thirty six participants who had injected in the previous month were recruited to participate in the 3 session intervention: 10 from Austria, 6 from Italy, 5 from Poland, 7 from Scotland and 8 from Spain. The mean age of the participants was 32.19 years (SD 8.31; range 22-56 years). Compliance and attrition rates are presented in Table 13. 81% (29/36) of participants attended the second session and 78% (28/36) attended the third session. The end of intervention assessment was completed by 86% (31/36) of participants and the one month post intervention was completed by 89% (32/36) of participants.

*Table 13. Compliance and attrition rates for REDUCE intervention study*

	Number attending each intervention session			Number completing assessments at each time frame		
	1 <sup>a</sup>	2 <sup>a</sup>	3 <sup>a</sup>	Pre-intervention	End of intervention	1 month post intervention
Austria	10	10	10	10	10	8
Italy	6*	5	5	6	5	6
Poland	5	4**	3**	5	5	5
Scotland	7	6	4	7	5	6
Spain	8	4	6	8	6	7

\* One participant did not attend session 1 following baseline assessment, but attended session 2 (where the key learnings from session 1 were reviewed) and session 3.

\*\*Sessions delivered individually to participants absent in sessions 2 and 3.

### 4.3.2 Behaviour change

One month post intervention, four participants had not injected in the month following the intervention. Despite the small sample size, **the intervention was effective in reducing some HCV injecting risk behaviours and**

**increasing HCV transmission knowledge. No change in sexual risk behaviours or depressive symptomatology were reported one month post intervention** (*Table 14*).

#### 4.3.3 Feasibility and acceptability of the intervention

Discussions with professionals who delivered and participants who attended the intervention determined its acceptability, and identified areas that worked well and those that could be improved. While the intervention was relatively brief (3 sessions), professionals believed that the duration of each session (2 hours) was too long for participants' to concentrate and to be able to answer all questions raised by participants. Participants stated that they learned a lot and really enjoyed the interactive parts of the intervention including the video, games and role play exercises. They were less keen on the didactic parts delivered by the professionals.

The first session, Understanding Hepatitis C transmission risks, was enjoyed the most, followed by the second session, Hepatitis C and sexual wellbeing–negotiating safety. Participants felt that the strategies taught during the third session, Hepatitis C and emotional wellbeing – reducing negative mood, were not enough to stop them injecting (and taking risks) when they were feeling down.

*Table 14. Behaviour change from baseline to one month post intervention*

<b>Significant results</b>	<b>Non-significant results</b>
<b>Significant reduction in using spoons or containers for mixing that had previously been used by someone else</b>	No difference in sharing needles/syringes with someone they knew had HCV
<b>Significant reduction in sharing filters, spoons, cookers or water with someone they knew was HCV positive</b>	No difference in using filters that had previously been used by someone else
<b>Significant reduction in using an alcohol swab when they injected drugs after the injection</b>	No difference in preparing drugs or rinsing works with water that had already been used by someone else
<b>Significant increase in HCV transmission knowledge</b>	No difference in sharing drugs with another person before or after preparing them
	No difference in using an alcohol swab when you injected drugs before the injection
	No difference in the number of all new and unused needles/syringes used to inject, number of times participants had injected with a needle/syringe that had already been used by someone else or number of different people that they had received used needles/syringes from
	No difference in sexual risk taking behaviours
	No difference in depressive symptoms



## 5. Conclusions and recommendations

### 5.1 Conclusions

FWID are a vulnerable population with many health problems, HCV infection being among the most prevalent. The REDUCE project provides an innovative, evidence-based and evaluated intervention to reduce HCV risk behaviours and prevent the spread of HCV infection in the particularly vulnerable target group of FWID.

#### **What HCV risk behaviours do FWID engage in?**

The systematic assessment of HCV risk behaviours among FWID in 5 European countries allowed us to conclude that the high prevalence of HCV infection among this population can be explained as a result of regular risk behaviours for HCV transmission, namely:

- Sharing of injecting paraphernalia.
- Typical injection episodes occur in groups or with a partner, increasing the risk of sharing contaminated injecting equipment.
- High frequency of having a high-risk partner relationship, due to HCV infection of the partner and/or experience of intimate partner violence. In both cases sharing injecting equipment and unprotected sex are common.
- Low frequency of condom use.

#### **What do FWID know about HCV transmission?**

Another relevant aspect highlighted by this study is the fact that a large percentage of the investigated population demonstrated limited knowledge about HCV transmission mechanisms. The results have highlighted important gaps and many misconceptions. Furthermore, even when they are able to correctly identify some of the risk behaviours, this did not prevent them from continuing to engage in high risk behaviours.

The analysis of HCV transmission knowledge shows that FWID are aware of a number of risk behaviours. For example, the majority know that:

- HCV transmission risk is related to blood contact.
- Sharing injecting needles, syringes, spoons, filters, swabs or tissues which have been used by another person, and sharing toothbrushes and razors, tattoos and piercings are correctly identified as possible sources of infection.
- Flushing injecting equipment with tap water does not destroy HCV.
- Unprotected sex is a risky behaviour.
- Can be re-infected with HCV.
- Sharing kitchen cups, plates or utensils, coughing and sneezing, hugs, handshakes or holding hands, food, air and toilet seats does not spread HCV.

### **What do FWID not know about HCV transmission?**

There remain several important gaps in FWID HCV transmission knowledge, namely:

- Poor awareness of HCV transmission risks from sharing rinse and diluting water.
- Poor awareness of HCV transmission risks from sharing tourniquets, pipes, straws or rolled money or other devices for snorting drugs.
- Poor awareness that HCV can survive for a long period of time in contaminated equipment.
- Poor awareness that touching some-one else's injection site (e.g. to feel for a vein, to wipe away blood, or to stop bleeding) could transmit HCV.
- Poor awareness of the existence of various subtypes of HCV.

As well as being unaware of some aspects of HCV infection and transmission, FWID in the current study were also found to hold a number of misconceptions about the how HCV was acquired and transmitted:

- Many believed that a vaccine for HCV prevention was available and currently administered to patients.
- Many believed that it was much easier to get infected with HIV than HCV.
- Many believed that people can only get HCV if they have HIV.
- Many believed that HCV infection could be spread through mosquito bites.

### Why do FWID continue to take risks?

**Although FWID seemed to be aware of some of the relevant risk behaviours for HCV transmission, this did not appear to prevent them from practising such behaviours.** There are several reasons that explain this dissonance between the FWID knowledge and behaviours:

- They often lack clean and sterile injecting equipment.
- Stressful situations (i.e. withdrawal/ drug cravings) may lead them to behave impulsively.
- They frequently take drugs in groups (where multiple users inject and share equipment and drugs) and/or in unsafe locations (e.g. outdoors/ public spaces).
- Intimate partner violence is common and reduces FWID ability to protect her own health by negotiating safer injecting and sexual practices.
- The high prevalence of psychiatric comorbidity, notably depression and anxiety, makes the FWID even more vulnerable to engage in unsafe behaviours. Negative mood and lack of assertiveness may decrease their ability to negotiate safer interactions in their personal drug and sex networks/relationships.

### What about the intervention?

The manualised intervention, designed and tested in 5 European countries in this study, has been assessed as a much-needed and interesting intervention

by FWID. According to the participants' evaluation of the three sessions of the intervention, session 1 (related to knowledge) was most valued, while session 3 (related to emotional well-being) was the least valued. Participants and therapists suggested reducing the didactic parts of each session where they are required to listen, and increasing the time for group discussion on the topics. Therefore, the final intervention requires some modification before implementation in routine practise.

Future HCV intervention initiatives for FWID need to consider the difficulty in recruiting and retaining FWID. During the study one important difficulty experienced was the recruitment (through drug treatment services) of HCV negative FWID. Most FWID in treatment had already been infected by the time they sought treatment for the first time, which has implications for HCV prevention among this group. Moreover, FWID stressed that they considered HCV transmission and treatment information from GPs and other health professionals to be more reliable and trustworthy than information from their peers, which has implications for the approach used in delivering HCV prevention interventions.

The findings from the REDUCE project highlight the need for a gender sensitive approach to HCV prevention. Findings from the intervention study are limited as it was not a randomised controlled trial and only a small sample of FWID participated. However, despite these limitations, the intervention did successfully reduce some injection risk behaviours and significantly increased HCV transmission knowledge among FWID. However, it was not successful in reducing sexual risk behaviours, potentially due to the fact that the majority of participants were in long term established relationships where condoms were not routinely used. The costs of successful early intervention compared to the consecutive costs of treatment (from interferon to liver transplantation) highlight the need for successful HCV prevention interventions such as the REDUCE intervention when targeting vulnerable populations.

## 5.2 Recommendations

The findings from the REDUCE project have resulted in several recommendations:

- 1.** Gender sensitive HCV prevention interventions, such as the REDUCE intervention, are required to address the specific needs of FWID.
- 2.** There remains a need for a randomised controlled trial of the REDUCE intervention.
- 3.** Psychosocial interventions should be offered not only in drug treatment centres, but also in GP practices and within community health services to enable a wider population to be targeted, and more importantly, to improve the capability of FWID to reduce their risk behaviours and prevent infection.



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