Decline in drug injection in Spain with continuing geographic differences

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Proportion of patients at treatment admissions for heroin dependence using injections as main route of administration. Spain 1981-85

- Bilbao 93%
- Coruña 96%
- Barcelona 93%
- Madrid 92%
- Sevilla 74%
- Valencia 92%

OBJECTIVES

• To evaluate time trends and geographical differences in the current main route of administration detected among heroin users in treatment centers.

• To evaluate the transitions from first route to current route.

• In-depth investigation, including self-perceived reasons for:
  a) Selecting an initial usual route for heroin or (or cocaine) administration.
  b) Changing the initial usual route (injection $\rightarrow$ NO injection).
  c) Never injected drugs.

* To analyse route determinants (injecting).
METHODS

- Two cross-sectional studies in young (<30 years) current heroin users
- In: - Barcelona: high prevalence of injection
  - Madrid: intermediate prevalence
  - Seville: almost no injection

<table>
<thead>
<tr>
<th>Route of administration project</th>
<th>Itinere project</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>April 2001-december 2003</td>
</tr>
<tr>
<td>Cross-sectional study</td>
<td>Baseline cross-sectional study of a</td>
</tr>
<tr>
<td></td>
<td>cohort study</td>
</tr>
<tr>
<td>596 participants (207, 199, 190)</td>
<td>992 participants: (365, 427, 200)</td>
</tr>
<tr>
<td>• 50% recruited out of treatment centers by chain referal methods</td>
<td>100% out of treatment centers by chain referal methods</td>
</tr>
<tr>
<td>• 50% in treatment centers</td>
<td></td>
</tr>
<tr>
<td>Face-to-face interview</td>
<td>Face-to-face interview with CAPI</td>
</tr>
</tbody>
</table>
First main route of administration of heroin by year of first use among young users. Spain 1980-1996

Source: 
Barcelona: n=438; Madrid: n=392; Seville: 280.
Current main route of heroin administration (last 30 days) of young drug users (≤ 30 years) of Madrid, Seville y Barcelona, 1995-2001/03

Source:
2001/03 data: ITINERE cohort. Not published.
Current (last 30 days) main route by initial main route of administration of heroin among young users. Itinere Project Spain, 2001/03

Initially sniffers n=164

Initially smokers n=647

Initially injectors n=152

*En Sevilla sólo 4 initially sniffers que luego son current smokers
Factors associated with drug injection in last 12 months among young drug users. Logistic regression. Itinere Project. Spain 2001-03

<table>
<thead>
<tr>
<th>Residence in:</th>
<th>Adjusted OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barcelona</td>
<td>2.8</td>
<td>1.3-6.0</td>
</tr>
<tr>
<td>Madrid</td>
<td>3.9</td>
<td>2.3-6.4</td>
</tr>
<tr>
<td>Seville</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

| Sex (male vs female)         | 2.0         | 1.3-3.1    |
| Ever in prison (yes vs no)   | 1.5         | 1.0-2.1    |
| Homeless (yes vs no)         | 2.5         | 1.6-3.9    |
| HIV (positive vs negative)   | 2.5         | 1.5-4.1    |
| Sex steady partner who was ever injector (yes vs no) | 3.5 | 2.2-5.5 |
| Ever maintenance methadone treatment (yes vs no) | 1.5 | 1.0-2.1 |
| Years of heroin or cocaine use (≥5 years vs <5 years) | 2.2 | 1.2-3.9 |
| Cocaine use (weekly or more vs less than weekly) | 3.8 | 2.4-6.1 |
| Type of heroin (every or most occasions white vs brown) | 3.3 | 1.7-6.5 |
| Type of cocaine (every or most occasions CLH vs crack/base) | 7.9 | 5.1-12.3 |

912 participants were included in the analysis. Variable removed from the model: level of education Not published data.
Type of heroin or cocaine primary used by participants at Barcelona, Madrid and Seville. Itinere Project 2001-03

- **France**: 78% used WH
  - 85% used COCA-CLH

- **Madrid**: 95.5% used BH
  - 68% used CRACK

- **Seville**: 100% used BH
  - 92% used CRACK

**Abbreviations**
- WH: White Heroin
- BH: Brown Heroin
- COCA-CLH: cocaine chlorhydrate

**Note**
- Primary used = in every or almost every consumption
- Not published data
Comparison of the evolution of syringe supply and injecting among heroin or cocaine users admitted to treatment in Spain

- Exchange points
- Syringes distributed (thousands)
- Heroin or cocaine users admitted to treatment whose main route was injection
- Ever injectors admitted to first treatment
CONCLUSIONS

• Transition from injecting to smoking initiated at the end of the 80s has continued til nowadays

• Nevertheless the geographical differences remain. In fact, injecting is currently the main route of heroin administration in Barcelona.

• The situation in Madrid and Seville suggests that smoking is not a transition state, but a stable one among both:
  – Those who use it as initial main route
  – Those who have moved to it

• However, in Barcelona both smoking and specially sniffing are initial routes that are later abandoned as heroin use evolves.

• Past and current drug policies now could have accelerated this transition process, but they have not managed to modify the initial geographical pattern

• The association between the most prevalent route and the type of heroin/cocaine (base or salt) raises again the debate regarding the influence of the illegal market on the adoption of a given route of administration.
  – Current scientific evidence does not allow causal relations.

SOURCE: DGPNSD. Observatorio Español sobre Drogas (OED). Indicador Tratamiento. (Figura 2.1.13.)
### Sources of data

<table>
<thead>
<tr>
<th>Year</th>
<th>Objective</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>Purity, type</td>
<td>Seized heroin (17 provinces)</td>
</tr>
<tr>
<td>1995</td>
<td>Transitions</td>
<td>900 regular heroin users (50% street recruited; 50% in treatment centers at admission)</td>
</tr>
<tr>
<td>2001-03</td>
<td>Transitions and other objectives</td>
<td>992 young adults, regular heroin users, sample of entry at a street recruited cohort</td>
</tr>
</tbody>
</table>

### Routine Data Collection

Injectors /non injectors admitted to first treatment for heroin or cocaine dependence - national coverage
Determinants of injecting route
Temporal and geographical trends
The substance
Geographical distribution of brown / white heroin (seized by police) in Spain, 1993.

Source: De la Fuente et al. Temporal and geographic variations in the characteristics of heroin seized in Spain and their relation with the route of administration. Drug Alcohol Dep; 40: 185-194
Percentage of heroin users in treatment using non-injecting route vs. median purity of heroin seized (assumed to be street drugs) for Spanish provinces with a predominance of brown heroin, 1993.

Source: De la Fuente et al. Temporal and geographic variations in the characteristics of heroin seized in Spain and their relation with the route of administration. Drug Alcohol Dep; 40: 185-194
Self-perceived reasons
In 1995 we studied the reasons for selecting an initial route of heroin administration and subsequent transitions in a sample of 900 regular heroin users (50% street recruited; 50% in treatment centers at admission)

We explored the reasons for:
   a) Selecting injection as initial usual route for heroin (URHA)
   b) Changing URHA to injection
   c) Never having injected drugs
   d) Selecting smoking or sniffing as initial URHA
   e) Changing URHA to a non-injecting route

The participants were asked to
1. Give spontaneously their self-perceived reasons
2. Evaluate the importance of the reasons given in a closed list
Importance given to reasons for **adopting injection as first usual route of heroin administration** and for changing from smoking or sniffing to injecting heroin

<table>
<thead>
<tr>
<th>Influence of social environment</th>
<th>% this reason as rather or very important to injecting as first URHA</th>
<th>% this reason as rather or very important to injecting or very important to changing from smoking or sniffing to injecting</th>
</tr>
</thead>
<tbody>
<tr>
<td>The majority of his/her friends who were using heroin injected</td>
<td>71.1</td>
<td>45.3</td>
</tr>
<tr>
<td>His/her sexual partner used heroin by the injected route</td>
<td>66.8</td>
<td>40.6</td>
</tr>
<tr>
<td>16.3</td>
<td>12.8</td>
<td></td>
</tr>
<tr>
<td>Belief that injected heroin had better effect</td>
<td>51.3</td>
<td>71.8</td>
</tr>
<tr>
<td>Availability of better heroin for injecting than for smoking or sniffing</td>
<td>28.3</td>
<td>21.7</td>
</tr>
<tr>
<td>Unavailability of good heroin for smoking / sniffing</td>
<td>24.7</td>
<td>12.3</td>
</tr>
<tr>
<td>Heroin purity was low or had decreased</td>
<td>10.0</td>
<td>14.3</td>
</tr>
<tr>
<td>Belief that injecting was more efficient than smoking / sniffing</td>
<td>23.0</td>
<td>63.4</td>
</tr>
<tr>
<td>Limited money to buy heroin fit for smoking / sniffing</td>
<td>23.0</td>
<td>51.5</td>
</tr>
<tr>
<td>Large increase in the price of heroin</td>
<td>-</td>
<td>7.9</td>
</tr>
<tr>
<td>Desire to use smaller quantities of heroin</td>
<td>-</td>
<td>40.9</td>
</tr>
</tbody>
</table>

Importance given to reasons for adopting sniffing or smoking as first URHA, and for switching from injecting to smoking or sniffing heroin

<table>
<thead>
<tr>
<th>Reason</th>
<th>% → this reason as rather or very important (\rightarrow) sniffing or smoking as first URHA(^a)</th>
<th>% → this reason as rather or very important (\rightarrow) from injecting to smoking / sniffing (\rightarrow)</th>
<th>Source: Bravo MJ et al. Reasons for selecting an initial route of heroin administration and for subsequent transitions during a severe HIV epidemic. Addiction 2003;98:749-760</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fear of health consequences of injecting</td>
<td>70.6</td>
<td>77.1</td>
<td>70.6</td>
</tr>
<tr>
<td>Belief that smoking or sniffing implies lower risk of overdose</td>
<td>45.3</td>
<td>56.7</td>
<td>45.3</td>
</tr>
<tr>
<td>Fear of infection by HIV / having an HIV test done (^c)</td>
<td>44.0</td>
<td>61.4</td>
<td>44.0</td>
</tr>
<tr>
<td>Belief that smoking / sniffing implies lower risk of dependence</td>
<td>38.5</td>
<td>-</td>
<td>38.5</td>
</tr>
<tr>
<td>Influence of social environment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The majority of his/ her friends sniffed or smoked</td>
<td>64.6</td>
<td>40.4</td>
<td></td>
</tr>
<tr>
<td>His / her sexual partner smoked or sniffed heroin</td>
<td>59.9</td>
<td>31.5</td>
<td></td>
</tr>
<tr>
<td>Availability of good heroin suitable for smoking / sniffing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heroin purity was high or had increased considerably</td>
<td>19.3</td>
<td>6.0</td>
<td></td>
</tr>
<tr>
<td>Availability of heroin for smoking, but not for injecting</td>
<td>11.2</td>
<td>23.5</td>
<td></td>
</tr>
<tr>
<td>Belief that smoked / sniffed heroin had better effect</td>
<td>19.1</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Increased capacity to buy heroin</td>
<td>-</td>
<td>35.5</td>
<td></td>
</tr>
<tr>
<td>Difficulties to inject because of vein problems</td>
<td>4.9</td>
<td>43.0</td>
<td></td>
</tr>
</tbody>
</table>
Reasons given as rather or very important for never having injected (n=262)

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fear of health consequences of injection</td>
<td>95.8</td>
</tr>
<tr>
<td>Fear of blood or of inserting a needle in one’s veins</td>
<td>89.3</td>
</tr>
<tr>
<td>Influence of social environment</td>
<td>59.5</td>
</tr>
<tr>
<td>Having enough money to buy heroin suitable for smoking or sniffing</td>
<td>54.1</td>
</tr>
<tr>
<td>Always having good heroin available for smoking or sniffing</td>
<td>20.2</td>
</tr>
</tbody>
</table>

Gender issues regarding the selection of the route of administration, 1995. Spain

- Women had been injected for the first time by their sexual partner in a much greater proportion than men (29.8% vs 1.3% p<0.00001)

- The importance of having an injector as sexual partner was much stronger among women:
  - 50% of women considered this was a rather or very important reason for adopt injection as first URHA vs 10.2% of men (p<0.00001)
  - 38.9% of women considered this was a rather or very important reason for changing from smoking or sniffing to injecting vs 7.2% of men (p<0.00001)

- Having a non-injector partner was also more important among women than men for selecting a non injecting route (smoking or sniffing) as first URHA or change towards non injecting routes at some point of their career.
Conclusions

• During the last 20 years important changes on the route of heroin administration have been observed in Spain according to a geographical gradient from southwest to north east.

• These changes has been a consequence of two major phenomena:
  – New heroin users have been increasingly using non-intravenous routes
  – Heroin users have changed their route of drug administration from injecting to non-injecting routes.

• These two processes have operated differently for each city (Barcelona, Madrid and Seville) with regards to timing and magnitude of transitions.
Conclusions II
Determinants

The substance:

– Type of heroin in the market and purity has likely played an important role on the selection of initial main route and current/recent main route. Where both types of heroin exists or where brown heroin predominates, purity may also influence the choice.

– Users did not have a clear perception of the influence of the market on their choices.

– Nevertheless they were very aware of the importance of a better effect or efficiency of injection when changing to this route.
Conclusions III
Determinants

• The social environment:
  – More important for the first main route (injecting or non-injecting) and less important for the transitions between routes
  – The influence of the sexual partner´s route of administration (injecting / non-injecting) seems to be higher for woman than for men. Both for adoption of first main route and transitions.

• Fear of health consequences of injecting:
  – Mainly to avoid overdose and HIV infection
  – Nevertheless the changes on the route of heroin administrations began in Spain before the users were aware of this risks for their health (early eighties)
Conclusions IV

Determinants

• Frequency of cocaine (weekly or more vs less than weekly) and type of cocaine (clh vs base) were found to be independent associated factors to the use of injecting route.

• The introduction of cocaine among heroin users in Spain in the last 10 years and the very high prevalence of use in this population must be further investigated regarding its role on the route transition phenomenon.
• Gracias!
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Evolución de la oferta de jeringuillas y uso de la vía parenteral por los admitidos a tratamiento en España

- **Syringes distributed (thousands)**
- **Exchange points**
- **heroin or cocaine users admitted to treatment whose main route was injection**
- **ever injectors admitted to first drug dependence treatment**
Proporción de admitidos a tratamiento por primera vez en la vida por abuso/dependencia de heroína que se administran esta droga principalmente por inyección.

1991 - 1995

1991 - 1995

1993 - 1997

1995 - 2002

<20%  20-39%  40-60%  >60%

Fuente: DGPNDS. Observatorio Español sobre Drogas (OED). Indicador Tratamiento