

# Factors associated with HCV test uptake in heroin users entering substitution treatment in Greece



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## Introduction

People who inject drugs (PWID) represent the main high risk group for HCV infection. Regular HCV testing for PWID is suggested as one of the main prevention measures by international guidelines with frequency of testing not less than once a year. Compliance with recommendations varies significantly not only among countries, but regions and settings within the same country.

According to the 2015 Report of the Greek National Monitoring & Documentation Centre for Drugs, (Greek Reitox Focal Point of the EMCDDA), the estimated prevalence of problem opioids use for 2014 in Greece was 2.4/1000 people aged 18-64 years (~17000). The majority of them were men 14 697 (12 749 – 17 027) and lived in Athens [9.053 (7 445 – 11 105)], while 4.909 (3 944 – 6 191) of the total number report injecting drugs the last 30 days. Current sharing of syringes is reported by 20% of current PWID.

HCV prevalence is high among drug users (73% for those under opioid substitution treatment (OST) while HIV prevalence has increased to 8% all over Greece and 15% in Athens after the recent outbreak (2011-2012) in Athens Metropolitan Area.

Identifying individual factors related to testing history may provide crucial information for policies aiming to reduce barriers to testing at both individual and public health level.

## Aim of the study

To examine history of HCV testing uptake and its determinants among PWID entering OST in Greece.

## Results

The sociodemographic characteristics of our sample (N=2747) are presented at Table 1a while the addiction related characteristics at Table 1b . Answers to the main question at Table 1c.

**Table 1a. Sociodemographics**

	N	%	(median, IR)
Median age (Interquartile Range)			36 years (12)
Male	2298	83.9	
Living with parents	1438	53.0	
Homeless or in precarious housing	316	11.8	
Born in Greece	2323	88.3	
Unemployed	1444	54.4	
Incomplete upper secondary education	1626	60.9	
History of imprisonment	1545	57.8	

**Table 1b. Addiction related characteristics**

	N	% or median (IR)
With previous treatment attempts	1600	59.6
Heroin or other opioids (primary substance)	2438	89.4
Primary substance mostly injected	718	26.7
Primary substance mostly sniffed	1545	57.4
Daily use of primary substance	1930	72.4
Multiple drug use	2331	85.4
Median # of years of use of primary substance (IR)	2677	16 (11)
Ever injectors	2072	79.7
Current injectors (in the past 30 days)	873	34.9
Ever syringe sharing	1160	56.9
Current sharing (in the past 30 days)	109	7.2

**Table 1c. History of HCV testing**

	N	%
Group A Never tested	380	16.5%
Group B Recent test	1406	61.2%
Group C Past test	513	22.3%

Note: By definition only group B may include those for whom the international recommendations have been followed regarding the frequency of testing for drug users (every six or 12 months).

**Table 1d. Serological result (after OST entry)**

	N	%
Anti-HCV positive	1036	66.1
Anti-HIV positive (confirmed)	187	11.6

Variables which were statistically significant in univariate multinomial logistic regression analyses (Table 2) were included in the multivariable model which was fitted to the data from 2014 cases for which complete data were available (Table 3).

**Table 2. Univariate multinomial logistic regression analysis**

A. Sociodemographics	Significant for
Gender (Female vs. male)	Recent test
Age group (a. 35+, b. 25-34 years vs. ≤24 years)	Past test
Place of residence (Athens vs. other areas)	Any test
Living with parents (No vs. yes)	Non-significant
Accommodation (Stable vs. homeless or precarious)	
Homeless in the past 12 months (yes vs. no)	
Born in Greece (yes vs. no)	
Greek nationality (yes vs. no)	
Education level (a. University, b. high school vs. lower)	
Employment (a. Full-time*, b. Part-time job/student/on benefit/other vs. unemployed)	
Ever incarcerated (yes vs. no)	
B. Addiction Characteristics	
Past treatment attempt (yes vs. no)	
Source of referral (a. Self, b. family, c. peers vs. other source)	
Mode of administration of primary drug (a. Injection, b. Sniffing/eating vs. smoke)	
Frequency of use of primary drug (Daily vs. less frequently)	
Polydrug use (yes vs. no)	
Past 12 months injection (yes vs. no)	
Injection history (a. ≥5 years, b. 2-4 years, c. 0-1 years vs. never injected)	
Syringe sharing (a. 12 m, b. not in the past 12 m, vs. Never or never injected)	

**Table 3. Multivariable multinomial logistic regression analysis with HCV testing as dependent variable**

	sig var	Recent test (vs. never)			Past test (vs. never)				
		RR	95% CI		RR	95% CI			
			Lower	Upper		Sig.	Lower	Upper	Sig.
Female (vs male)	<0.001	2.6	1.7	4.0	<0.001	1.5	0.9	2.4	0.147
35+ years (vs ≤24 years)	<0.001	2.6	1.6	4.3	<0.001	3.8	2.0	7.4	<0.001
25-34 years (vs ≤24 years)		3.2	1.9	5.3	<0.001	3.1	1.6	6.3	0.001
Athens (vs other areas)	<0.001	1.1	0.8	1.5	0.598	0.7	0.5	0.9	0.021
Full-time employment (vs unemployed)	0.003	1.5	1.0	2.3	0.078	1.8	1.2	2.9	0.010
Part-time job/student/on benefit (vs unemployed)		1.2	0.9	1.7	0.270	0.9	0.6	1.3	0.474
Past treatment attempt (vs no)	<0.001	3.6	2.6	4.8	<0.001	3.2	2.3	4.5	<0.001
Injecting (vs smoke)	0.001	2.3	1.3	4.0	0.003	2.5	1.3	4.8	0.005
Sniffing / eating (vs smoke)		1.9	1.3	3.0	0.002	2.7	1.6	4.6	<0.001
Polydrug use (vs no)	0.021	1.6	1.0	2.3	0.029	1.0	0.7	1.6	0.901
≥5 y injection history (vs never injected)	0.019	3.0	2.0	4.5	<0.001	3.4	2.1	5.4	<0.001
2-4 y injection history (vs never injected)		1.6	0.9	2.9	0.141	2.1	1.1	4.3	0.033
0-1 y injection history (vs never injected)		1.3	0.6	2.6	0.530	1.0	0.4	2.6	0.956
Recent syringe sharing (in the past 12m) (vs never sharing or never injected)	0.004	1.2	0.7	1.9	0.485	0.9	0.5	1.6	0.822
Syringe sharing but not in the past 12 months (vs never sharing or never injected)		2.1	1.3	3.3	0.001	2.3	1.4	3.7	0.001

Four types of statistically significant associations were derived by the Multivariable multinomial logistic regression analysis with HCV testing as dependent variable (Table 3):

1. Factors positively associated with any past HCV testing: age groups >25 years, history of previous addiction treatment attempts , ≥5 years of injecting history, syringe sharing history (but not in the last 12 months) and full time employment
2. Factors positively associated with past, but not recent (12 m) HCV test uptake: 2-4 years injection history
3. Factors negatively associated with past, but not recent (12 m) HCV test uptake: Living in Athens Metropolitan Area
4. Factors positively associated with recent (last 12 months) HCV test uptake: Female gender and Polydrug use.

## Conclusions

The majority of heroin users entering OST programmes in Greece report HCV testing in the past, although a considerable proportion have never been tested or have not had a recent test. High risk behaviours (injecting, sharing, polydrug use) increase the probability for past testing but “new” injectors and recent sharing need more attention. Prevention efforts should include client convenient and continuous testing opportunities, especially to those living under vulnerable conditions.

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