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 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)

Methods

We analysed anonymous behavioural data from heroin users collected upon entering substitution treatment in Central and Southern Greece in the period 2013-2015. Our data derived from 38 OST clinics run by Organization Against Drugs (OKANA), which according the Greek law is the only authorized to provide substitution treatment all over the country. As a result all 38 OKANA programmes, from which the participants recruited, had similar organisational structure and implement common treatment protocols. Clinics were located at the capitals cities of 14 prefectures in 9 of 13 country regions (Attika, Peloponnese, Crete, Epirus, Thessaly, Western Greece, Central Greece, Ionian Islands, and the Southern Aegean region). In total the clinics which participated represent 70% of all OST clinics and the participants represent 70% of the drug users who entered OST during the same period in Greece.

All drug users were interviewed by health professionals upon their entry to OST clinics and paper-based data were collected using a standardised structured questionnaire. Completed questionnaires were subsequently sent to the Reitox Focal Point, where they were checked and analysed. The procedure of data collection and management has been approved by the Hellenic Personal Data Protection Authority (Decision number: 2186, 1/11/2001)

Statistical Analysis



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 dependent variable for our analysis was the HCV test uptake, derived from the responses to the question ""Have you ever had an HCV test?". Depending on the response the following three mutual exclusive groups were defined: Group A those responded "never tested", Group B those responded "Yes, in the past 12 months" and Group C "Yes, before the past 12 months" The covariates checked included general sociodeomographic characteristics and a large number of addiction related variables. More specifically we analysed Gender, Age, Place of residence, Living with parents, Accommodation, Homeless in the past 12 months, Born in Greece, Greek nationality, Education level, Employment and History of incarceration. Characteristics related to addiction included past treatment attempt, Source of referral and a number of factors indicating high risk drug use behaviour: Mode of administration of primary drug, Frequency of use of primary drug, Polydrug use, Past month injection, Duration of Injection history and Syringe sharing.

Multinomial logistic regression analyses were conducted to identify differences between different periods of HCV test uptake according to these characteristics. Explanatory variables (all categorical) were first tested in univariate multinomial logistic regression analyses. Variables with p<0.05 were included in the multivariable model. The final regression model included only the variables which were statistically significant in the multivariable model and was fitted to the data from 2014 cases for which complete data were available. Likelihood ratio tests were carried out for the overall effect of an explanatory variable and Wald tests for the coefficients of individual categories against the reference category. Analyses were conducted using IBM SPSS Statistics for Windows, Version 22.0 (Armonk, NY: IBM Corp. IBM Corp. Released 2013). Relative risk ratios (RRR) and 95 % confidence intervals (CI) are presented.

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

		(median, IR)
Median age (Intequartile Range)		36 years (12)
	Ν	%
Male	2298	83.9
Living with parents	1438	53.0
Homeless or in precarious housing	316	11.8
Born in Greece	2323	88.3

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

Table 1c. H	listory of HCV testing	Ν	%
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).

Fable 1d. Serological result (after O	ST entry)	N	%
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Unemployed	1444	54.4
Incomplete upper secondary education	1626	60.9
History of imprisonment	1545	57.8

4	Current injectors (in the past 30 days)	873	34.9	Anti-HCV positive	1036	66.1
9	Ever syringe sharing	1160	56.9	Anti-HIV positive (confirmed)	187	11.6
8	Current sharing (in the past 30 days)	109	7.2	And the positive (commed)	107	11.0

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

Gender (Female vs. male)	Significant for
Age group (a. 35+, b. 25-34 years vs. ≤24 years)	_
Place of residence (Athens vs. other areas)	Recent test
Living with parents (No vs. yes)	Past test
Accommodation (Stable vs. homeless or precarious)	A
Homeless in the past 12 months (yes vs. no)	Any test
Born in Greece (yes vs. no)	Non-significant
Greek nationality (yes vs. no)	
Education level (a. University, b. high school vs. lower	r)
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. othe	r source)
Mode of administration of primary drug (a. Injection,	b. Sniffing/eating vs. smoke
Frequency of use of primary drug (Daily vs. less frequ	iently)
Polydrug use (yes vs. no)	
Past 12 months injection (yes vs. no)	
Injection history (a. ≥5 years, b. 2-4 years, c. 0-1 year	s vs. never injected)
Syringe sharing (a. 12 m, b. not in the past 12 m, vs. I	Never or never injected)

Table 3.		Recent test (vs. never)				Past test (vs. never)			
Multivariable multinomial logistic regression analysis		RR	95% CI		Sig	RR	95% CI		Sig
with HCV testing as dependent variable	sig var	ĸĸ	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	<0.00
25-34 years (vs ≤24 years)		3.2	1.9	5.3	<0.001	3.1	1.6	6.3	0.002
Athens (vs other areas)	<0.001	1.1	0.8	1.5	0.598	0.7	0.5	0.9	0.022
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	<0.00
Injecting (vs smoke)	0.001	2.3	1.3	4.0	0.003	2.5	1.3	4.8	0.00
Sniffing / eating (vs smoke)		1.9	1.3	3.0	0.002	2.7	1.6	4.6	<0.00
Polydrug use (vs no)	0.021	1.6	1.0	2.3	0.029	1.0	0.7	1.6	0.90
≥5 y injection history (vs never injected)	0.019	3.0	2.0	4.5	<0.001	3.4	2.1	5.4	<0.00
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	0.002

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

- Factors positively associated with past, but not recent (12 m) HCV test uptake: 2-4 years injection history 2.
- Factors <u>negatively</u> associated with past, <u>but not recent</u> (12 m) HCV test uptake: Living in Athens Metropolitan Area 3.
- Factors positively associated with recent (last 12 months) HCV test uptake: Female gender and Polydrug use. 4.

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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