#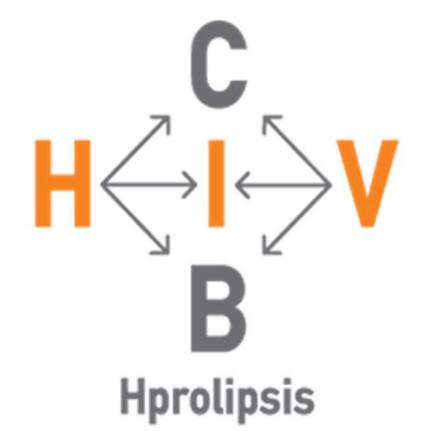 HEPATITIS B, C AND HIV TESTING UPTAKE IN THE GENERAL, MIGRANT AND ROMA POPULATIONS IN GREECE: RESULTS FROM THE HEALTH EXAMINATION SURVEY HPROLIPSIS

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Background

Delayed hepatitis B (HBV), C (HCV) and HIV diagnosis has important negative clinical and public health implications; yet most infected are unaware of their disease. We aimed to estimate prevalence of HBV, HCV and HIV testing uptake and identify significant predictors in the general, migrant and Roma adult (≥18 years) populations in Greece.

Methods

- Data derived from the Greek Health Examination Survey (Hprolipsis) of HBV, HCV and HIV in the general population and in vulnerable populations (immigrants and Roma).
- Multistage stratified random sampling based on 2011 census was applied to select the sample in the general population, whereas non-probability multistage quota sampling was applied to select migrant and Roma populations.
- Trained interviewers and physicians made home (general population) or community (Roma/migrants) visits. Standardized questionnaires were administered and blood samples were collected.
- Knowledge score calculated based on 17 questions and risk behavior level on 9 questions.
- General population prevalence rates were age, sex and geographical area standardized and corrected for study design.

Results

5953, 580 and 534 individuals from the general population, migrants and Roma were enrolled, respectively. Descriptive characteristics are presented in Table 1.

Table1. Socio-demographic characteristics of the study populations

	General population (N=5953*)	Immigrants (N=580)	Roma (N=534)
Male[N(%)]	2528 (48.4%)	311(53.6)	247(46.3)
Age (Median - IQR) years	47.9 (34.0,64.0)	36.8 (29.6,46.6)	35.0(25.0,48.0)
Educational Level			
No school	-	43 (7.4)	270 (50.6)
Up to primary	2112(29.1)	96(16.6)	202 (37.8)
Up to secondary/post-secondary	2569(46.4)	354(61.0)	48(9.0)
University or Higher	1221 (23.7)	74(12.8)	-
Other/Unknown	51 (0.8)	13(2.2)	14 (2.6)
Income			
Upto900/ Up to 350/ No income	2394(40.0)	342 (59.0)	142(26.6)
900-1700/351-700/<450	1655(28.2)	90 (15.5)	305 (57.1)
>1700/701-900/450	606(10.9)	14(2.4)	63 (11.8)
-/>900/>450		5(0.9)	21 (3.9)
No answer	1298(20.9)	129 (22.2)	3 (0.6)
Family Status			
Married/in symbiosis	3929 (61.4)	353(60.9)	422 (79.0)
Single	1989 (38.0)	222(38.3)	111(20.8)
Unknown	35(0.6)	5 (0.9)	1(0.2)
Employment status			
Employed	2089(39.0)	145 (25.0)	140 (26.2)
Retired/ household	2634(35.6)	70 (12.1)	163 (30.5)
Unemployed	782(15.4)	343 (59.1)	195 (36.5)
Other/Unknown	448(10.1)	22(3.8)	36 (6.7)

*weighted percentages

2.9%, 4.3% and 6.2% of the general, migrant and Roma populations respectively had reported high risk behavior. Corresponding percentages with high knowledge score were 27.6%, 15.7% and 5.1% and for being tested for at least one infection 33.6%, 38.3% and 20.1%.

Table 2. Overall level of knowledge for HBV, HCV and HIV, risk category and testing history for HBV, HCV and HIV

	General population	Immigrants	Roma
Knowledge score			
Low	1998(29.6)	225(38.8)	213 (39.9)
Medium	2467(42.9)	264(45.5)	294 (55.1)
High	1488(27.6)	91(15.7)	27 (5.1)
Risk category			
Low	2640(59.2)	307(52.9)	137(25.7)
Medium	1831(37.9)	248(42.8)	364(68.2)
High	113(2.9)	25(4.3)	33(6.2)
Testing History			
HBV	1657(30.7)	143(24.7)	102 (19.1)
HCV	1180(22.5)	93(16.0)	30 (5.6)
HIV	1006 (19.6)	141(24.3)	23 (4.3)
At least one	1803(33.6)	222(38.3)	107 (20.1)

Younger age, higher educational level, higher income, being married, higher knowledge and high risk behavior were independent predictors for testing in the general population; educational level, income and being married were not significant predictors among Roma; among migrants knowledge level, high risk behavior and higher education were significant predictors.

Table3. Factors affecting testing intake in the general population, immigrants and Roma. Results from weighted logistic regression analysis

	General population OR (95%C.I)	p-value	Immigrants OR (95%C.I)	p-value	Roma OR (95%C.I)	p-value
Female	0.97 (0.842, 1.107)	0.612	0.91 (0.618, 1.331)	0.618	0.92 (0.552, 1.538)	0.754
Age (per year)	0.99 (0.981, 0.990)	**<0.001**	1.00 (0.983, 1.015)	0.925	0.98 (0.957, 0.995)	**0.016**
Educational level						
Up to primary/No school	1		1		1	
Up to secondary/Up to primary	1.52 (1.253, 1.847)	**<0.001**	1.54 (0.621, 3.825)	0.351	0.82 (0.467, 1.448)	0.499
Higher Education/Higher	2.41 (1.914, 3.022)	**<0.001**	2.38 (1.046, 5.506)	**0.039**	0.405(0.140, 1.171)	0.095
Unemployed	0.95 (0.779, 1.159)	0.615	1.07 (0.719, 1.5860)	0.744	2.02 (1.208, 3.391)	**0.007**
Income						
<900/<350/No income	1		1		1	
900-1700/350-700/450	1.28 (1.076, 1.517)	**0.005**	0.94 (0.558, 1.580)	0.813	1.01(0.572, 1.788)	0.968
>1700/>700/>450	1.41 (1.115, 1.790)	**0.004**	0.79 (0.258, 2.427)	0.683	0.77 (0.337, 1.772)	0.543
No answer	0.96 (0.779, 1.159)	0.687	1.13 (0.718, 1.792)	0.588	-	-
Single/in symbiosis	0.68 (0.584, 0.798)	**<0.001**	1.24 (0.719, 1.586)	0.274	0.61 (0.316, 1.185)	0.145
Knowledge score						
Low	1		1		1	
Medium	2.01 (1.679, 2.411)	**<0.001**	1.91 (1.268, 2.882)	0.002	2.04 (1.188, 3.516)	**0.010**
High	3.10 (2.528, 3.794)	**<0.001**	3.51 (2.013, 6.123)	<0.001	4.74 (1.738, 12.917)	**0.002**
Risk Behaviour						
Low	1		1		1	
Medium	1.80 (1.563, 2.070)	**<0.001**	1.25 (0.853, 1.843)	0.251	1.37 (0.770, 2.440)	0.285
High	3.36 (2.109, 5.353)	**<0.001**	2.73 (1.0956.793)	0.031	2.68 (1.023, 7.001)	**0.045**

Conclusions

HBV, HCV and HIV testing rates were limited for studied populations, particularly among Roma. The very low comprehensive knowledge contributed substantially to these low rates. There is urgent need for large scale awareness interventions, especially among most vulnerable populations, to increase population engagement in prevention practices and testing.