

Türkiye'de Hepatit C Prevalansı

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5 Kasım 2015
İstanbul

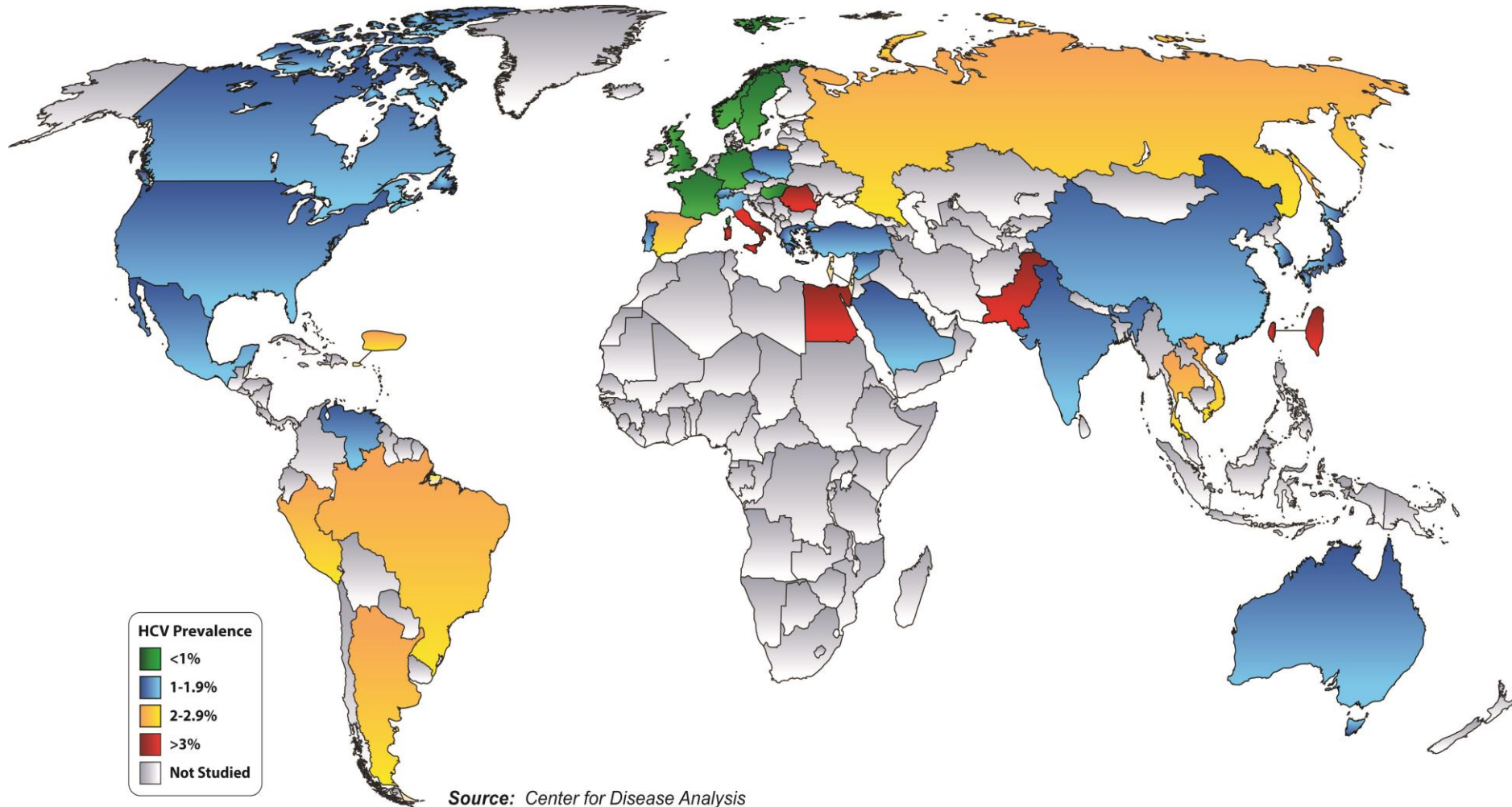
Dünyada Hepatit C Prevalansı; CDC, 2015



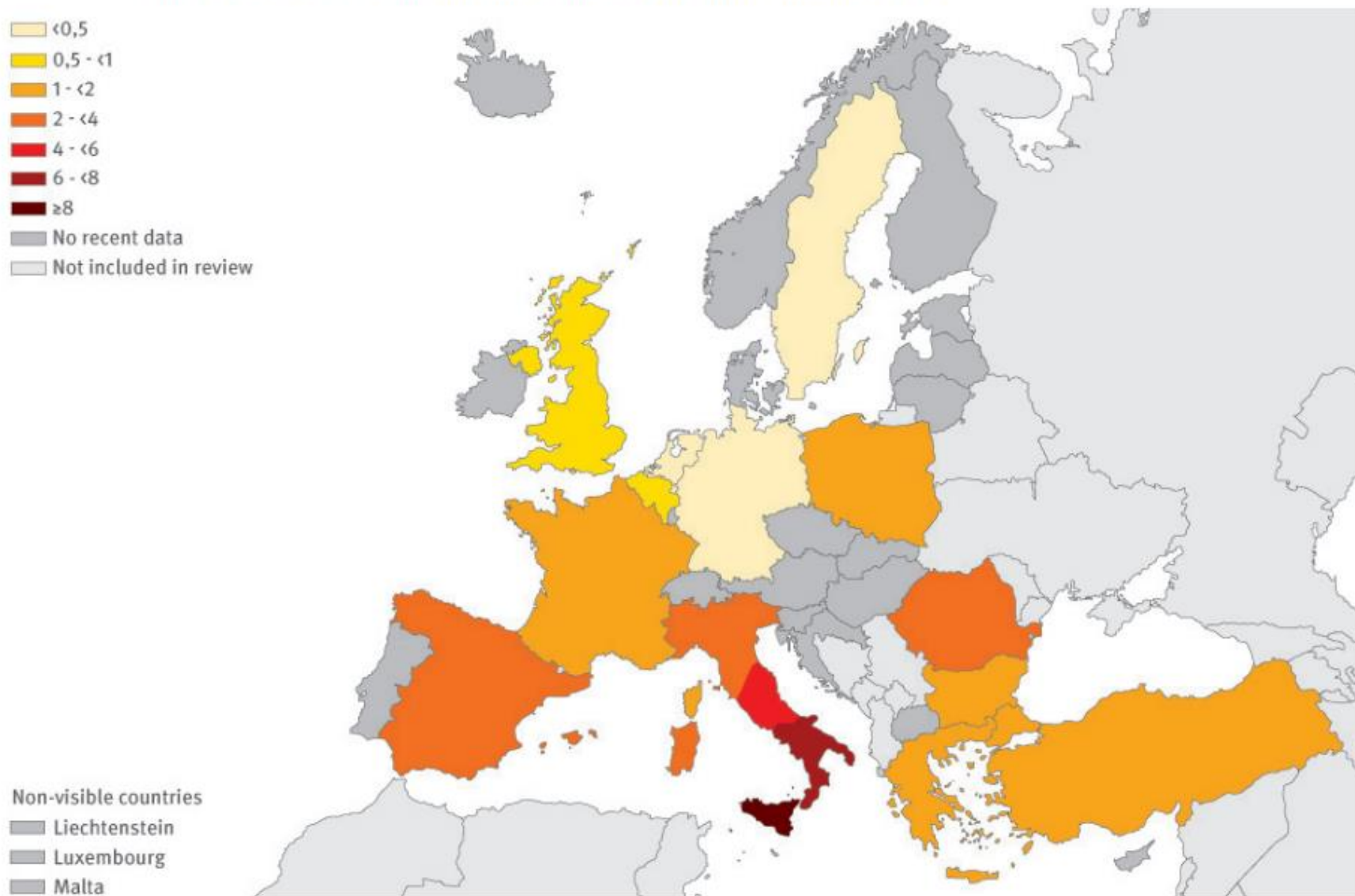
MAP 3-5. DISTRIBUTION OF HEPATITIS C VIRUS INFECTION¹

* Disease data source: Mohd Hanafiah K, Groeger J, Flaxman AD, Wiersma ST. "Global Epidemiology of Hepatitis C Virus Infection; New Estimates of Age-Specific Antibody to HCV and Seroprevalence." *Hepatology* 2013; 57:1333-1342.

Dünyada Hepatit C Prevalansı; DSÖ, 2002



Hepatitis C prevalence in the general population: anti-HCV



ECDC, 2010

Hepatit C: Genotip Dağılımı

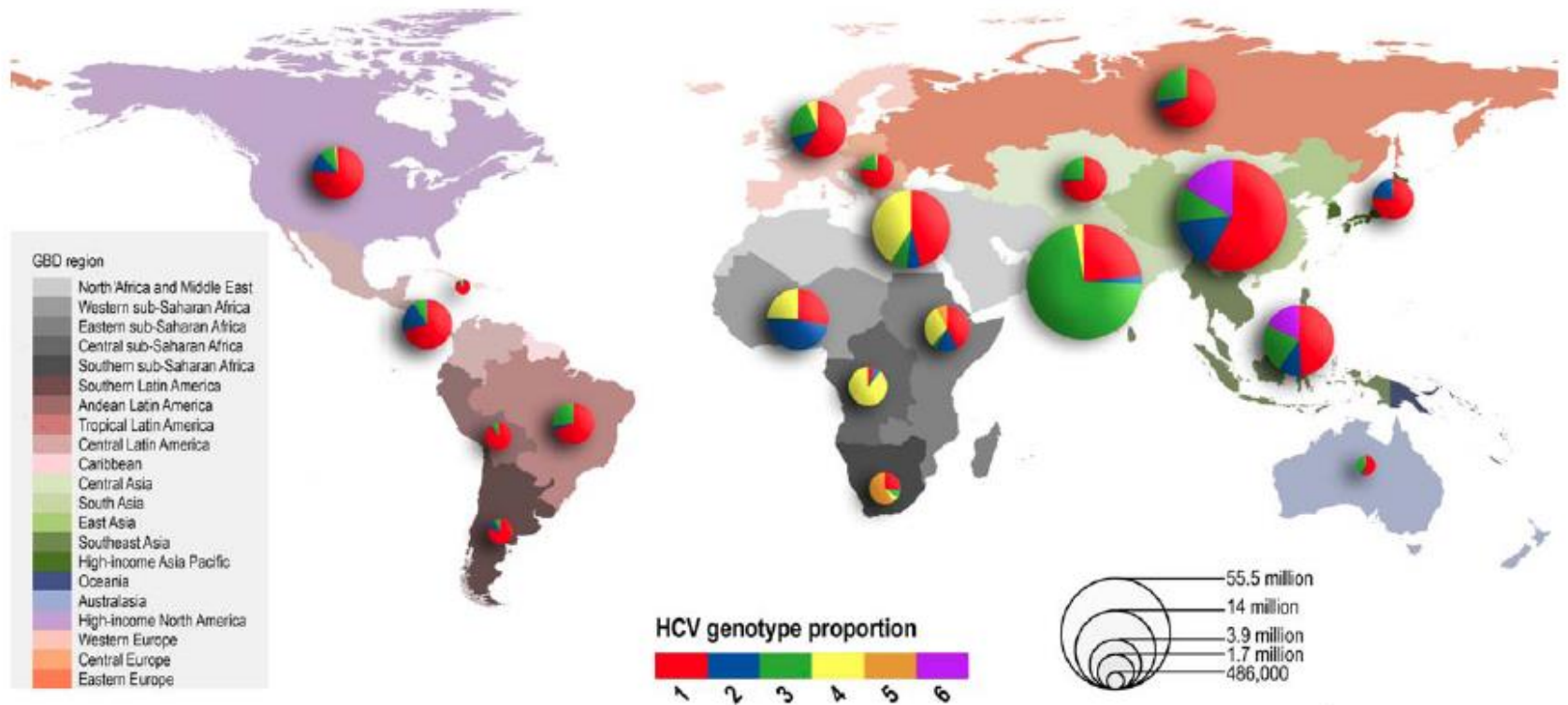


Fig. 1. Relative prevalence of each HCV genotype by GBD region. Size of pie charts is proportional to the number of seroprevalent cases as estimated by Hanafiah et al.²

Türkiye’de Hepatit C Prevalansı: Sistematiik Derleme

İlayda Arjen Kara

Melis Çeldir

Önder Ergönül

Koç Üniversitesi, Tıp Fakültesi

Yöntem

Meta-analysis of Observational Studies in Epidemiology (MOOSE).

MEDLINE, PUBMED, SCIENCEDIRECT,
Ulakbim (Turkish Medical Index)

Viral Hepatit Dergisi (Viral Hepatitis Journal) Enfeksiyon Dergisi (Infection Journal)
KLİMİK Journal

Anahtar kelimeler: “Hepatitis C & Turkey”, “Anti HCV & Turkey”.

Dahil Edilen Çalışmalar

>2000 yılı

Gruplar:

Hastaneler

Kan donörleri

Sağlık çalışanları

Kent/kır ayrımı

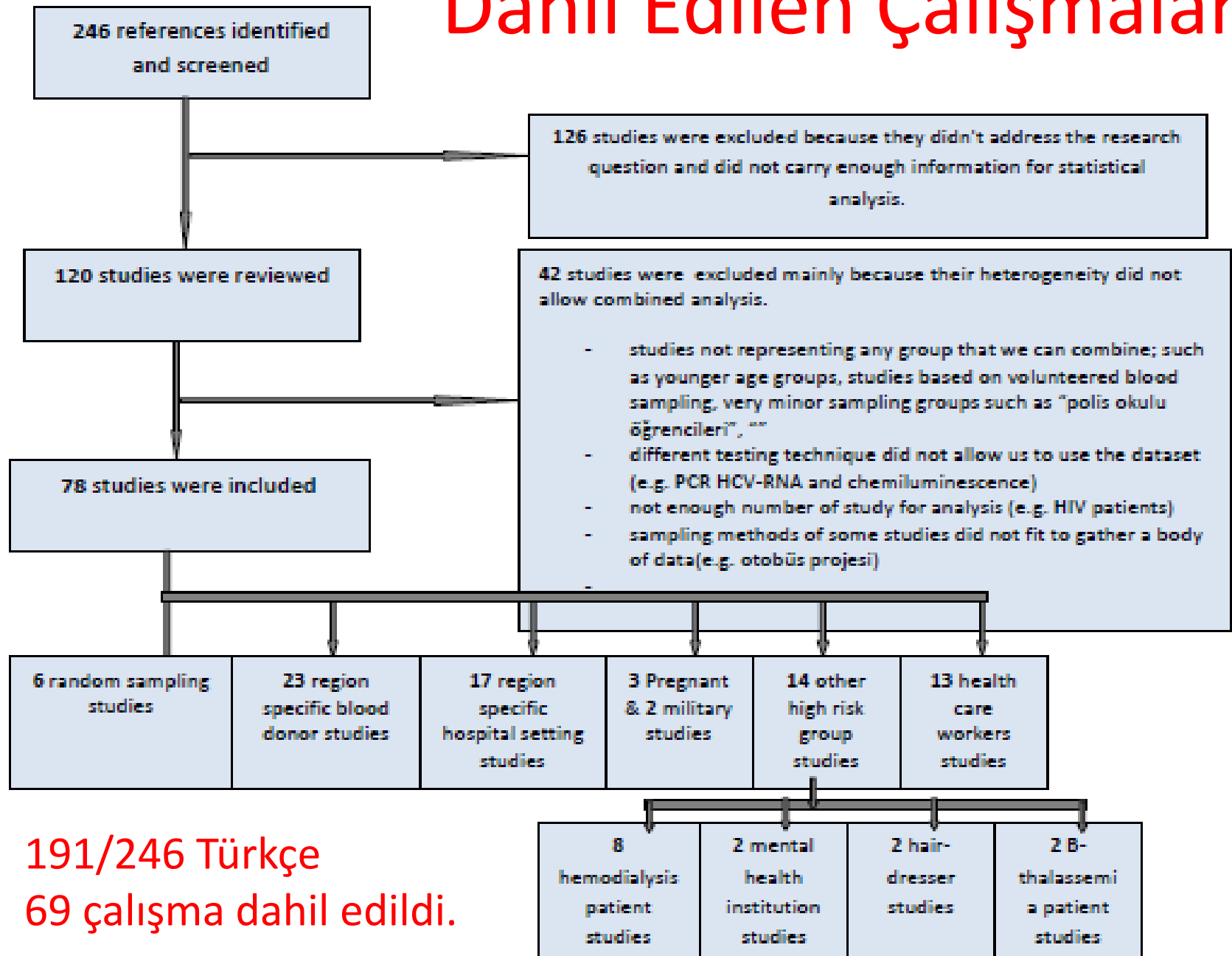
Gebeler

Özel hasta grupları ve riskli gruplar

Anti-HCV ELISA

Çok az çalışmada HCV-RNA PCR

Dahil Edilen Çalışmalar



191/246 Türkçe

69 çalışma dahil edildi.

Sistemik Örneklem Seçimi Yapılan Çalışmalar

Study Group

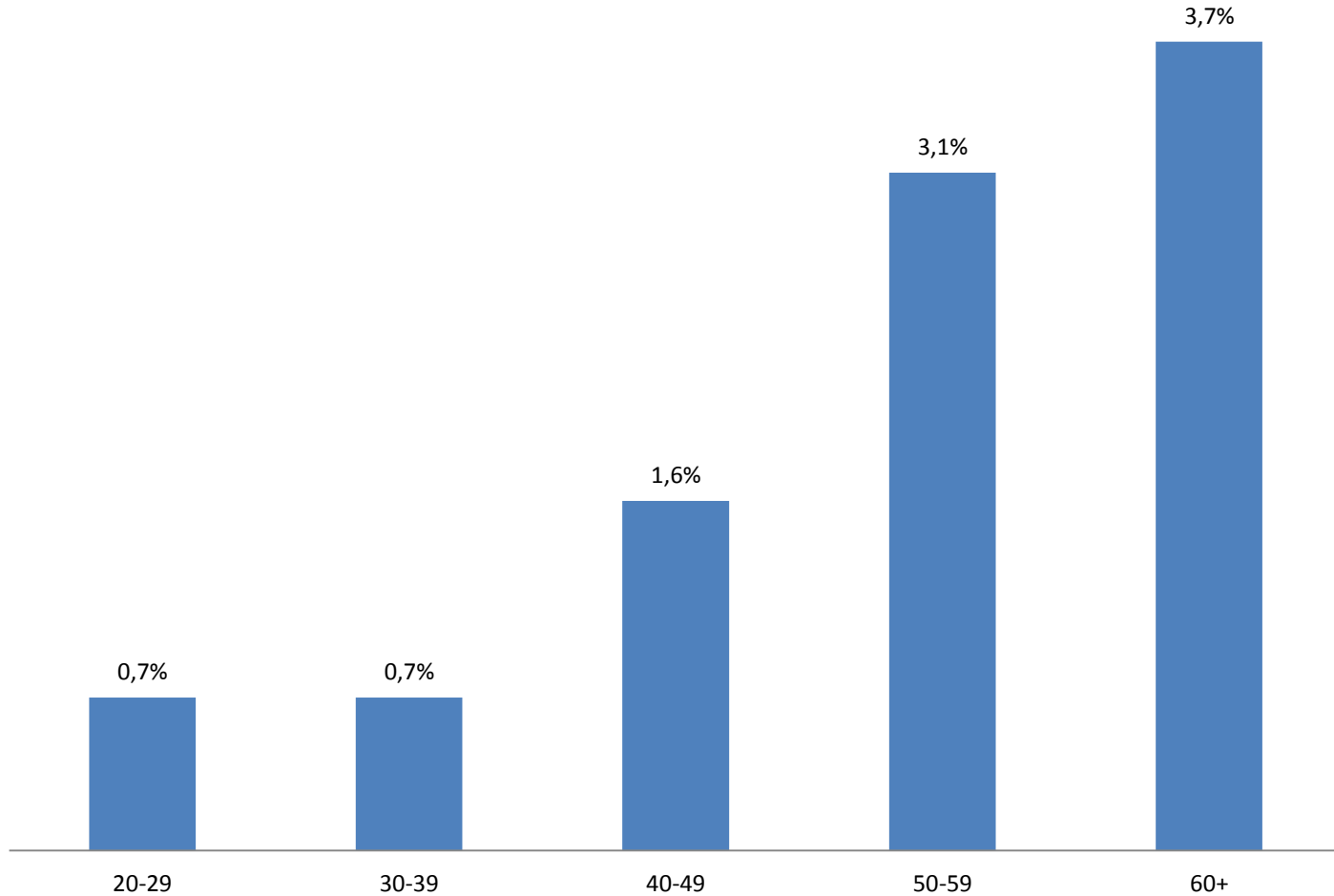
	References	N	n2	WMP%
All studies	[5]	568	7	1,2
	[6]	301	2	0,7
	[7]	1321	9	0,7
	[8]	1095	23	2,1
	[9]	5471	55	1
	[10]	1427	44	3,1
??	Total/Overall	10183	140	1,6

?

5. Kölgelir, S., et al., *Erzurum ve Çevresinde Hepatit C Seroprevalansı*. Viral Hepatit Dergisi, 2003. **8**(3): p. 166-170.
6. Banak, S., E. Yoldaşcan, and B. Kılıç, *Adana İli Yarıkırsal Alanda Yaşayan 10 Yaş ve Üzeri Kişilerde Hepatit B Virüsü (HBsAg) ve Anti-Hepatit C Virüsü (Anti-HCV) Prevalansı ve Etkileyen Faktörler*. Turkish Journal of Infection, 2002. **16**(2): p. 133-140.
7. Yildirim, B., et al., *Hepatitis C virus risk factors in the Turkish community*. Digestive Diseases And Sciences, 2005. **50**(12): p. 2352-2355.
8. Yildirim, B., et al., *Seroprevalence of hepatitis B and C viruses in the province of Tokat in the Black Sea region of Turkey: A population-based study*. Turk J Gastroenterol, 2009. **20**(1): p. 27-30.
9. Tözün, N., et al. CMI 2015
10. Ozer, B., et al., *- Risk factors for higher anti-HCV positivity in a border city in southern Turkey with unique population characteristics*. 2012. - **23**(- 5): p. - 579.

Yaşlara Göre Anti HCV Prevalansı

Age-specific HCV prevalence



Cinsiyet Dağılımı

Gender	References	N	n2	WMP%
female	[5]	288	3	1
[?]	[7]	667	6	0,9
[?]	[8]	554	14	2,5
[?]	[10]	742	19	2,6
[?]	Total	2251	42	2,1
male	[5]	280	4	1,4
[?]	[7]	654	3	0,5
[?]	[8]	541	9	1,7
[?]	[10]	685	25	3,6
[?]	Total	2160	41	2,4

Kan Donörlerinde Yıllara Göre Anti HCV Prevalansı

Blood donors (in years)	No. Studies	N	n2	WMP%	References
1995-1999	2	64302	244	0,4	[11,12]
2000-2004	8	224063	936	0,4	[11-18]
2005-2009	10	208698	564	0,4	[13,15-17,19-24]
2010-2014	2	20040	53	0,3	[24,25]

?

Kan Donörlerinde Anti HCV Prevalansı

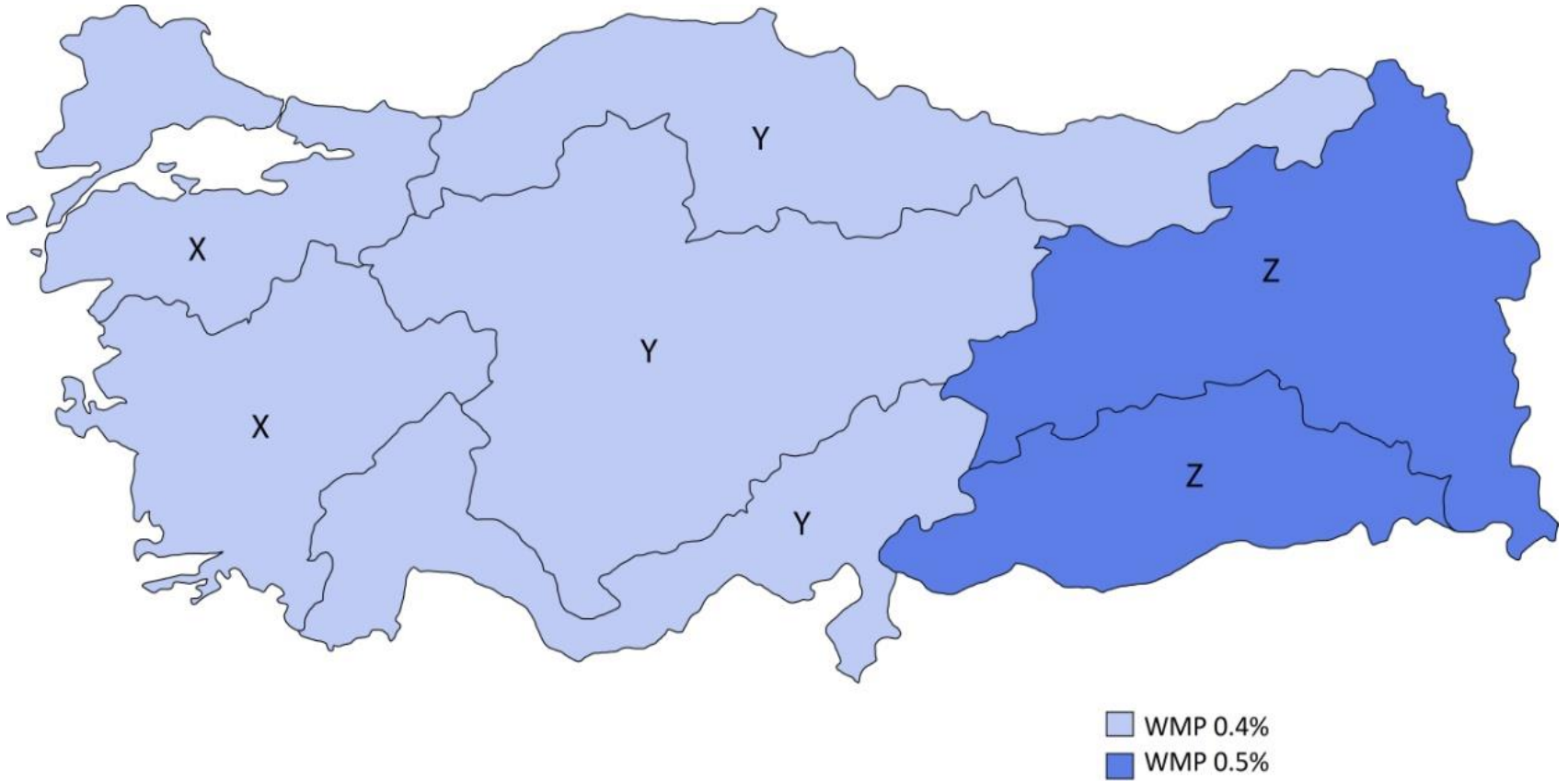


Figure 4b. Hepatitis C prevalence in first-time blood donors: anti-HCV

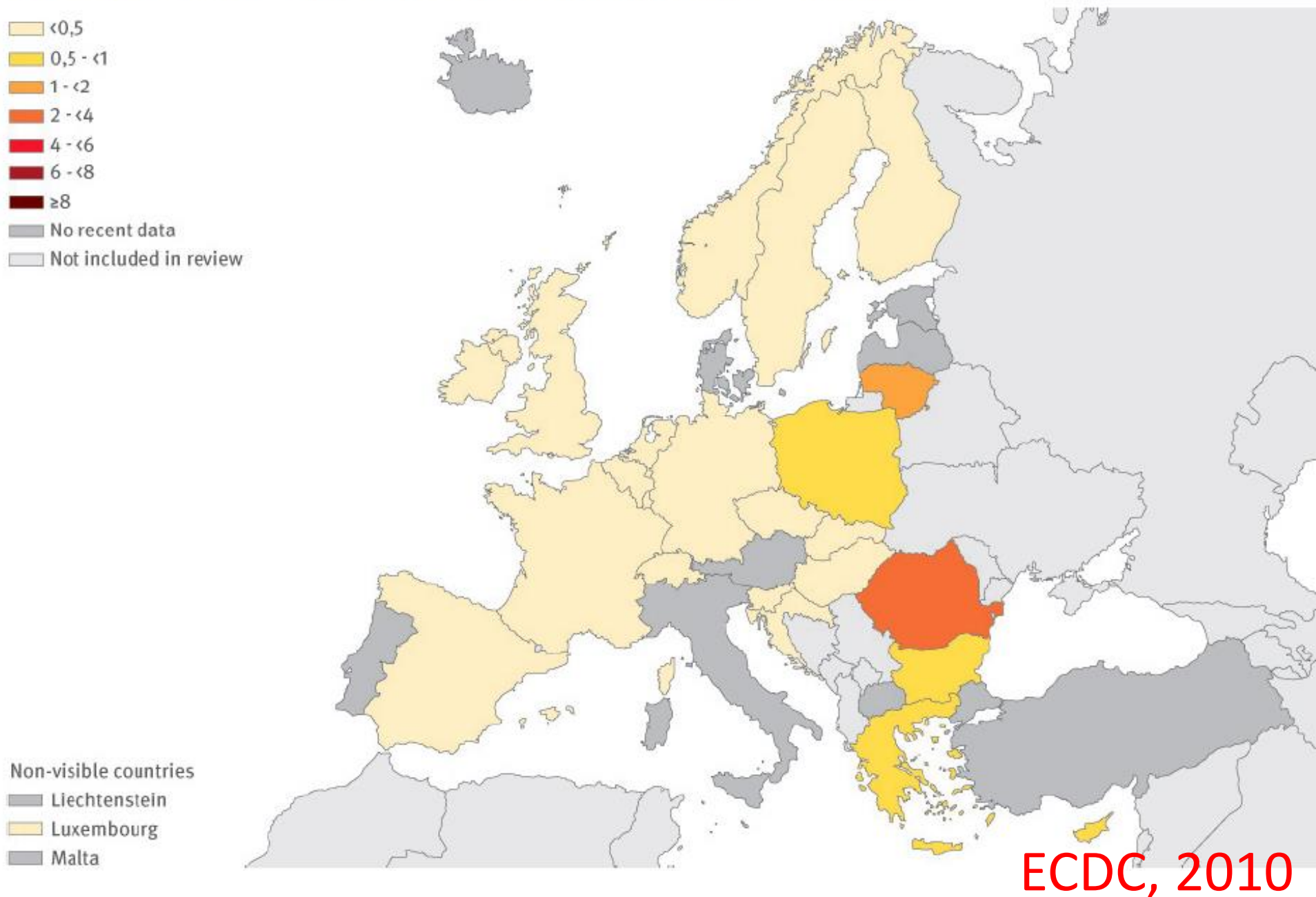


Table A4. Prevalence of anti-HCV in first-time blood donors

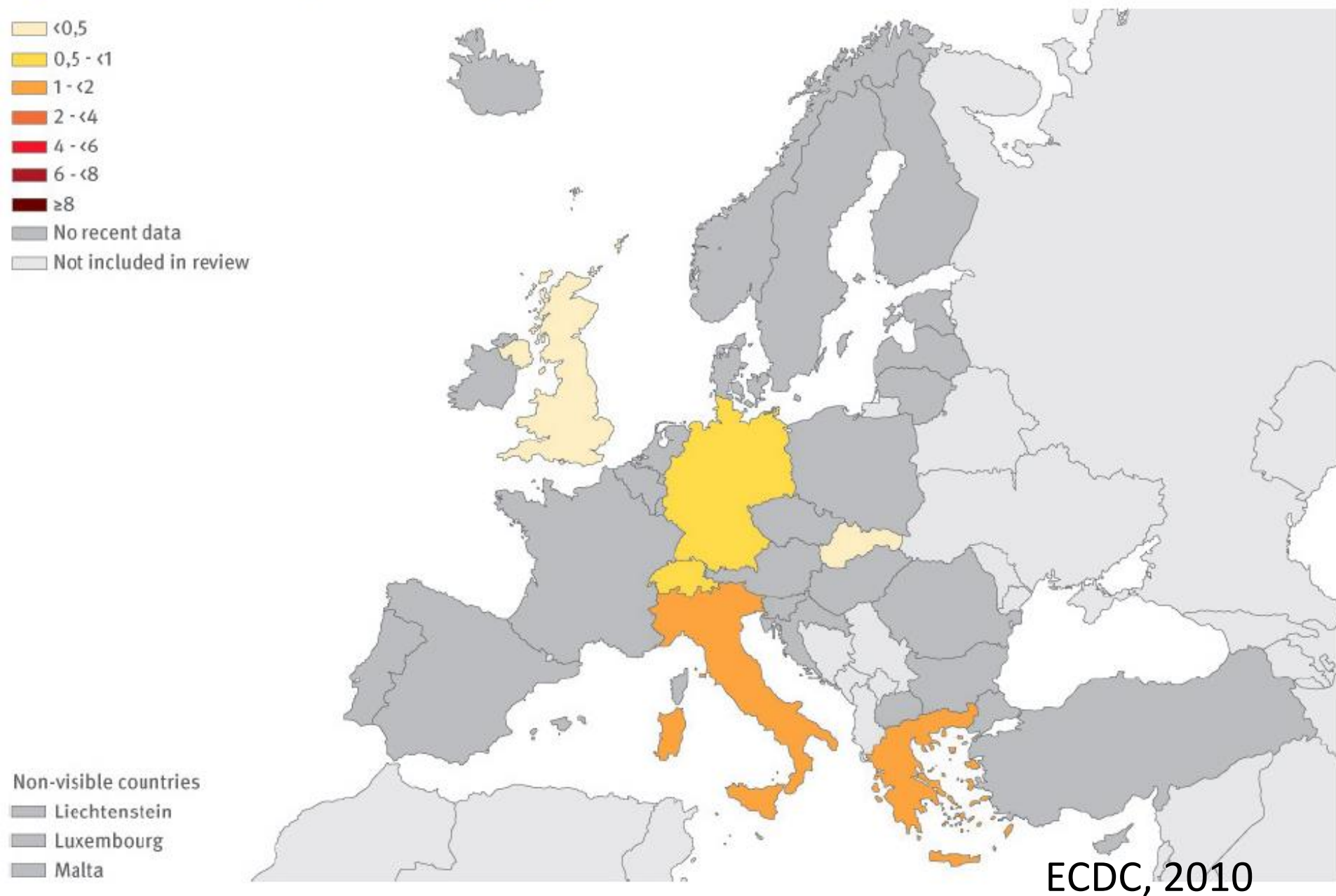
Reference	Country	Period		Area	Region	N	%	95% CI
28*	Belgium	2005					0.06	
28*	Bulgaria	2005					0.9	
28*	Croatia	2005					0.06	
32*	Cyprus	2005		regional	North	5 057	0.5	
28*	Czech Republic	2005					0.1	
28*	Finland	2005					0.04	
28*	France	2005					0.06	
28	Germany	2005					0.08	
158*	Germany	1997	2002	nationwide		2 919 442	0.1	
28*	Greece	2005					0.6	
28*	Hungary	2005					0.3	
28*	Ireland	2005					0.02	
161*	Lithuania	2005	2006	regional	Vilnius	24 894	1.7	
28*	Luxembourg	2005					0.06	
28*	Netherlands	2005					0.03	
28*	Norway	2005					0.06	
162*	Poland	1998	2000	regional	north east	22 618	0.6	
28*	Romania	2005					3.3	
28*	Slovakia	2005					0.06	
28*	Slovenia	2005					0.02	
28	Spain	2005					0.1	
163*	Spain	1999	2001	nationwide		216 590	0.2	
28*	Sweden	2005					0.1	
28*	Switzerland	2005					0.08	
28*	United Kingdom	2005					0.04	

Gebelerde ve Askerlerde Anti HCV Prevalansı

Study Group		Anti HCV (+) prevalence			
Category	No. Studies	N	n2	WMP%	References
Pregnant	3	24454	97	0,5	[44,48,49]
Military	2	17465	185	1,1	[50,51]

?

Figure 5b. Hepatitis C prevalence in pregnant women: anti-HCV



Sağlık Çalışanlarında Hepatit C Prevalansı

Groups	Region	No. Studies	N	n2	WMP %	References
Healthcare workers	x	3	772	3	0,6	[52-54]
??	y	5	367	2	0,3	[55-59]
??	z	5	1535	4	0,4	[60-64]
??	total	13	2674	9	0,4	

?

Yüksek Risk Gruplarında Anti HCV Prevalansı

Risk Group		Anti HCV (+) prevalence			
Groups	No. Studies	N	n	WMP %	References
Hair-dressers	2	654	6	1	[65,66]
B β thalassaemia patients	2	259	27	11,7	[67,68]
Hemodialysis	8	4412	331	7,7	[57,69-75]
Hemodialysis in Region X	-	-	-	-	-
Region Y	3	3304	193	6,2	[69,73,74]
Region Z	4	1042	124	11,8	[70-72,75]
Mental Health Institutions	2	1588	32	2,1	[76,77]

?

Table A2. Prevalence of anti-HCV in the general population

Reference	Country	Period	Area	Region	Sampling	N	%	(95% CI)	Remarks
116*	Belgium	2003	regional	Flanders	random	1 834	0.1	(0.1-0.4)	Oral fluid
144*	Belgium	1993-1994	regional	Flanders	random	4 055	0.9	(0.5-1.1)	
145*	Bulgaria	1999-2000	regional	South Central	convenience	2 211	1.3	(1.2-1.4)	Standardised prevalence
117*	Czech Republic	2001	nationwide		random	2 658	0.2		
146*	France	1997	regional	South	convenience	11 804	1.3	(1.1-1.5)	
121*	Germany	1998	nationwide		random	6 748	0.4	(0.2-0.5)	
120	Germany	1997-2001	regional	North East	random	4 310	0.5		
123	Greece	2002	regional	Athens	convenience	216	0.0		Children only
122*	Greece	1997-1998	regional	Peloponnesus	random	1 500	0.5	(0.2-1.1)	
147*	Greece	1997	regional	Zakinthos (Island)	random	718	1.3		
148	Italy	1996-1997	nationwide		residual	3 577	2.7	(2.2-3.2)	
38*	Italy	2002	regional	North	convenience	956	2.6		
40*	Italy	1994-1995	regional	North	convenience	2 154	3.3	(2.6-4.1)	
149*	Italy		regional	North	convenience	4 820	2.4	(2.0-2.8)	
39*	Italy		regional	North	random	496	11.5		Elderly >65 years
150	Italy	1983-1987	regional	Central	random	3 884	1.8		
151*	Italy		regional	Central	convenience	300	16.3	(12.0-20.6)	
125*	Italy	1997	regional	Central	random	250	22.4	(20.8-24.1)	
126*	Italy		regional	South	random	488	16.2		
152*	Italy	2000-2002	regional	South	convenience	2 753	7.9		
127*	Italy	2002-2003	regional	South	random	1 645	6.5	(5.3-7.7)	
128	Italy	2003-2006	regional	South	random	4 496	6.7		Standardised prevalence
129*	Italy	1994-1995	regional	Sardinia	convenience	3 324	3.2		
130*	Italy	1999-2000	regional	Sicily	random	721	10.4		
131*	Netherlands	2004	regional	Amsterdam	random	1 364	0.6	(0.1-1.1)	Standardised prevalence
153*	Netherlands	2006	regional	East	convenience	2 200	0.2		
154*	Poland	1999	regional	North	convenience	2 561	1.9		
155*	Romania	2006-2008	nationwide		random	8 039	3.5	(3.1-3.9)	
156*	Spain	1996	regional	Catalonia	random	2 142	2.5	(1.8-3.2)	Standardised prevalence
157*	Spain	1997-1998	regional	North	random	1 170	1.6	(1.0-2.6)	
133*	Sweden	1991-1994	regional	Malmö	random	5 533	0.4		
135*	Turkey	2006-2007	regional	South West	random	2 852	1.0		
137*	Turkey	2002-2004	regional	Central	convenience	1 320	2.2		
139*	Turkey		regional	Central	random	1 095	2.1		
37*	United Kingdom	1996	regional	England and Wales	residual	6 401	0.7		

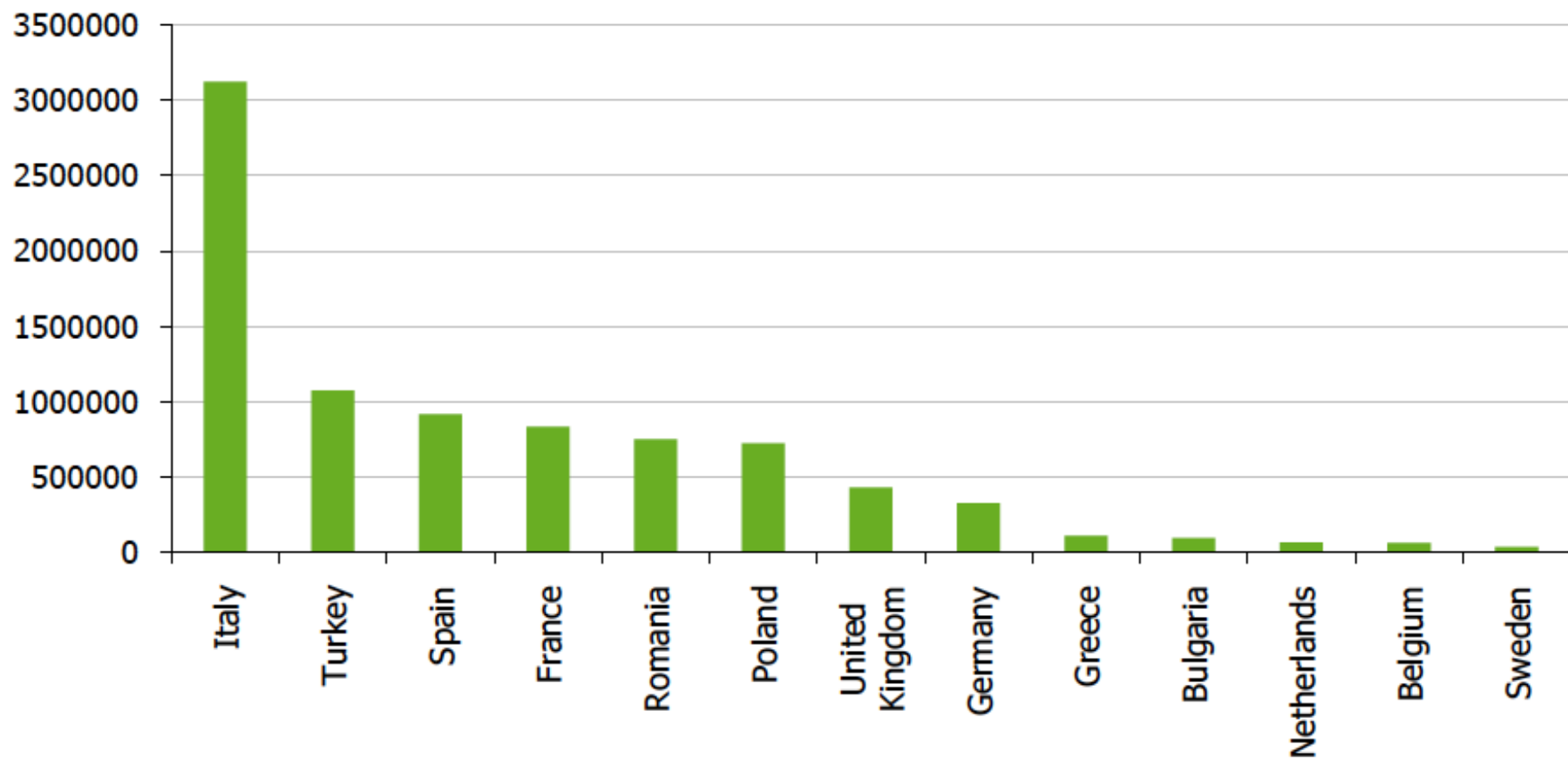
ECDC, 2010

Table A10. Estimated number of individuals in the general population and in the largest three migrant groups who are positive for HBsAg and/or anti-HCV, by country

Country	Total population size (number)	HBsAg prevalence in the general population (%)	anti-HCV prevalence in the general population (%)	HBsAg positive individuals (number)	Anti-HCV positive individuals (number)	Migrants, three largest groups (number)	HBsAg positive migrants (number)	Anti-HCV positive migrants (number)
Austria	8 355 260					461 100	18 444	
Belgium	10 754 528	0.7%	0.6%	75 282	64 527	365 126	14 605	9 512
Bulgaria	7 606 551		1.3%		98 885			
Croatia	4 435 056							
Cyprus	793 963	0.9%		7 146				
Czech Republic	10 467 542	0.6%		62 805				
Denmark	5 511 451					69 342	2 774	
Estonia	1 340 415							
Finland	5 326 314	0.2%		10 653		52 397	2 412	
France	64 351 000		1.3%		836 563	1 871 000	74 840	23 290
Germany	82 050 000	0.6%	0.4%	492 300	328 200	2 626 700	105 068	60 839
Greece	11 257 285	2.1%	1.0%	236 403	112 573	553 093	22 124	14 718
Hungary	10 031 208					226 436	19 283	
Iceland	319 368					3 580	241	
Ireland	4 465 540	0.1%		4 466		103 394	5 115	
Italy	60 053 442	1.4%	5.2%	840 748	3 122 779	1 061 375	62 987	27 031
Latvia	2 261 294					296 816	11 873	5 199
Liechtenstein	35 590							
Lithuania	3 349 872					174 879	6 995	2 993
Luxembourg	493 500					60 412	2 416	
Macedonia	2 048 620							
Malta	413 627							
Netherlands	16 486 587	0.1%	0.4%	16 487	65 946	551 155	22 046	15 106
Norway	4 799 252					51 166	2 047	808
Poland	38 135 876		1.9%		724 582	497 353	19 894	
Portugal	10 627 250					300 118	27 018	4 636
Romania	21 498 616	5.6%	3.5%	1 203 922	752 452	72 179	6 423	2 310
Slovakia	5 412 254	0.6%		32 474		26 285	1 051	
Slovenia	2 032 362					164 222	6 569	412
Spain	45 828 172	1.0%	2.0%	458 282	916 563	1 566 951	93 337	27 761
Sweden	9 256 347	0.2%	0.4%	18 513	37 025	212 245	8 490	
Switzerland	7 700 202					493 718	19 749	
Turkey	71 517 100	5.2%	1.5%	3 718 889	1 072 757	593 999	52 609	6 535
United Kingdom	61 634 599		0.7%		431 442	1 073 000	42 920	21 187

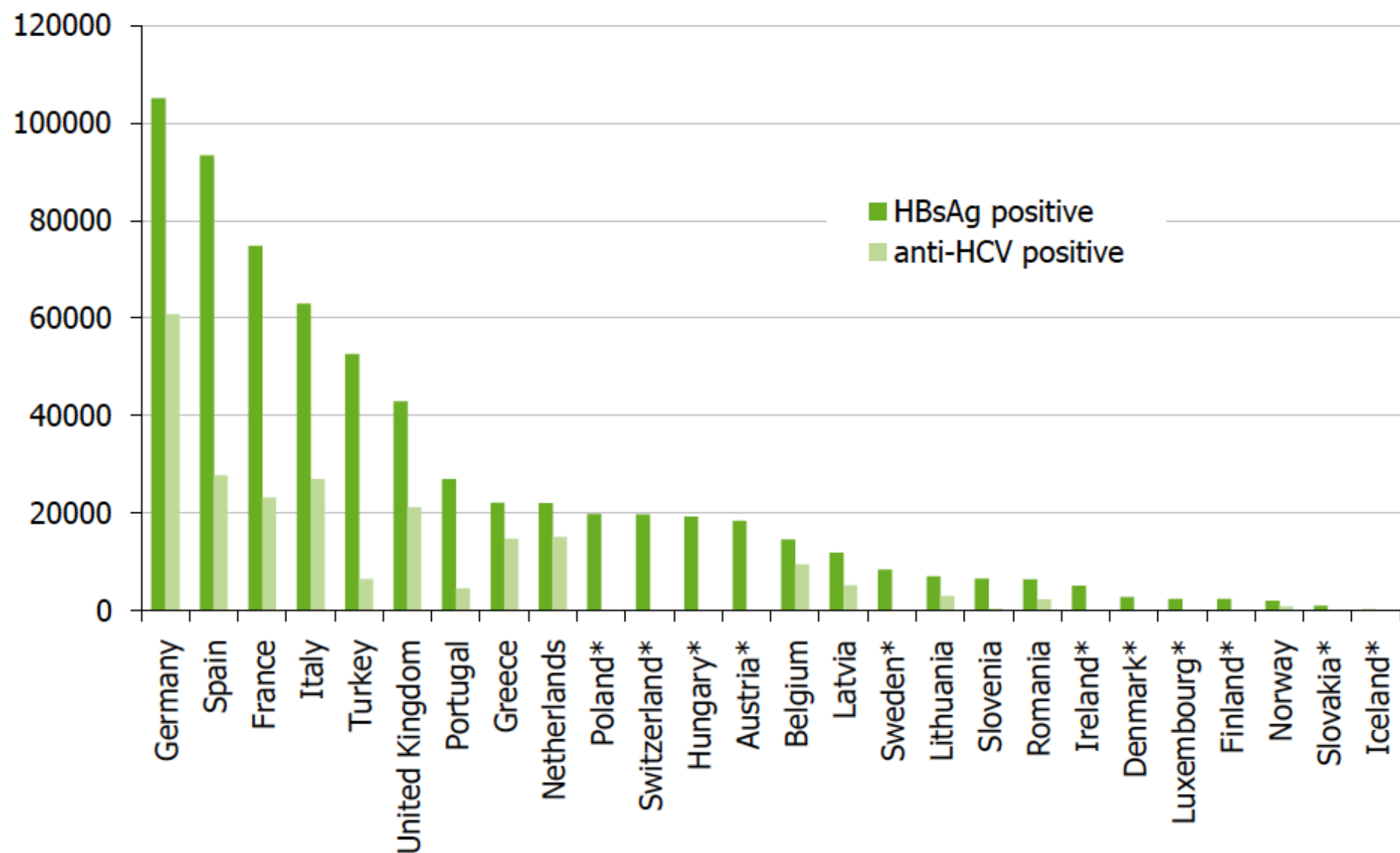
ECDC, 2010

Figure 7. Estimated number of anti-HCV-positive individuals by country, based on general population prevalence estimates



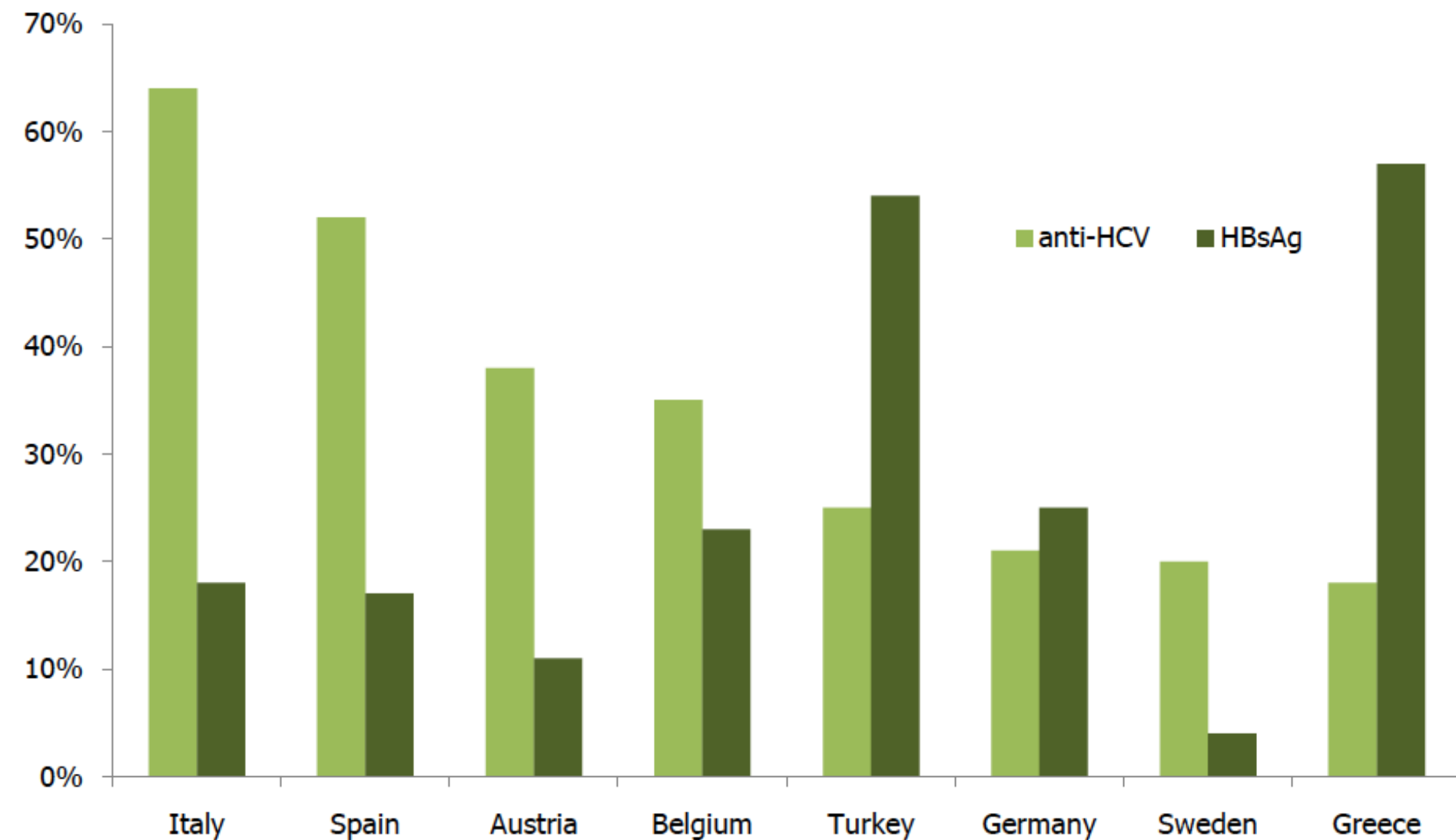
ECDC, 2010

Figure 8. Estimated number of HBsAg- and anti-HCV-positive individuals in the three largest migrants groups, by country



ECDC, 2010

Figure 11. Estimated HBsAg and anti-HCV prevalence in HCC patients by country



ECDC, 2010

Table 4. Estimated HBsAg- and anti-HCV prevalence in cirrhosis patients by country

Country	Anti-HCV prevalence			HBsAg prevalence		
	%	N	References	%	N	References
Italy	61%	4125	56, 74	11%	4125	56, 74
Spain	32%	451	75	10%	451	75
Turkey	11%	505	66, 76	64%	731	66, 76

Seroprevalence of hepatitis B and C virus infections and risk factors in Turkey: a fieldwork TURHEP study

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1) Aabadem University School of Medicine, 2) Marmara University School of Medicine, 3) Istanbul Memorial Hospital, Istanbul, 4) Ankara University Faculty of Medicine, Ankara, 5) Ege University Faculty of Medicine, Izmir, 6) Istanbul University Istanbul Faculty of Medicine and 7) Koc University School of Medicine, Istanbul, Turkey

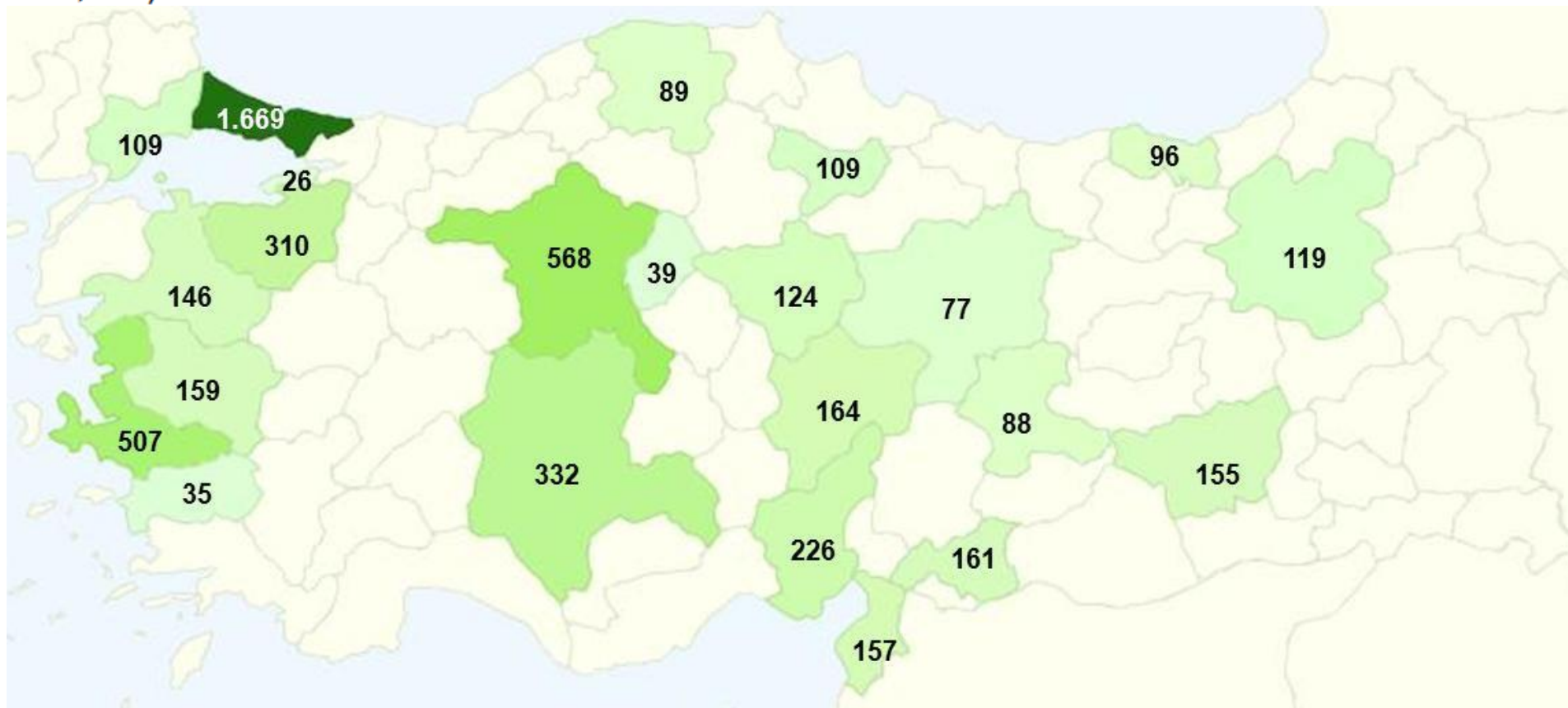


TABLE I. Sociodemographics of all participants according to HBsAg and anti-HCV positivity

	HBsAg (+) n = 218	HBsAg (-) n = 5242	p	Anti-HCV (+) n = 52	Anti-HCV (-) n = 5371	p	All participants ^a n = 5460
Age (years), mean (SD)	42.8 (13.8)	40.7 (14.5)	0.019	48.5 (16.0)	41.0 (15.0)	<0.001	40.8 (14.7)
Age group (years), n (%)							
18–29	42 (19.3)	1445 (27.3)	0.059	7 (13.4)	1483 (28)	0.004	1490 (27.3)
30–39	54 (24.8)	1323 (25.4)		11 (21.0)	1364 (25)		1375 (25.5)
40–49	55 (25.3)	1080 (20.7)		9 (17.0)	1127 (21)		1136 (21.0)
50–59	41 (18.8)	706 (13.5)		10 (19.0)	738 (14)		748 (13.9)
60–69	14 (6.4)	400 (7.6)		9 (17.0)	405 (7.5)		414 (7.6)
≥70	11 (5.0)	247 (4.7)		6 (12.0)	242 (5.0)		248 (4.7)
Gender, n (%)							
Female	89 (40.8)	2692 (51.3)	0.002	33 (63.4)	2750 (51)	0.070	2783 (51.0)
Male	129 (59.1)	2550 (48.6)		19 (36.5)	2658 (49)		2677 (49.0)
Educational status, n (%)							
Less than high school	167 (76.6)	3647 (69.6)	0.027	43 (83.0)	3771 (70.0)	0.043	3814 (70.0)
High school or over	51 (23.4)	1594 (30.4)		9 (17.0)	1636 (30.0)		1645 (30.1)
High-risk profession, n (%)	n = 218	n = 5241					n = 5459
Healthcare workers	3 (1.4)	242 (4.6)	0.024	4 (8.0)	241 (4.6)	0.265	245 (4.5)
Marital status, n (%)							
Married	183 (84.0)	3979 (75.9)	0.006	39 (75.0)	4123 (76.0)	0.838	4162 (76.2)
Single (unmarried, widow(er) and divorced)	35 (16.0)	1263 (24.1)		13 (25.0)	1285 (24.0)		1298 (23.8)
Place of residence, n (%)							
Urban	147 (76.2)	3603 (75.0)	0.710	38 (73.0)	3949 (73.0)	0.989	3987 (75.0)
Rural	46 (23.8)	1202 (25.0)		14 (27.0)	1461 (27.0)		1475 (25.0)

HBsAg, hepatitis B surface antigen; HCV, hepatitis C virus.

^aNumber with available data.

TABLE 4. Risk factors for anti-hepatitis C virus positivity

	Univariate analysis			Multivariate analysis		
	OR	95% CI	p value	OR	95% CI	p value
Age ≥ 50	2.5	1.48–4.43	0.001	2	1.09–4.3	0.026
Close contact with hepatitis patient	1.8	0.86–4.06	0.109	1.9	0.86–4.3	0.109
Living in southeastern part (versus other regions)	2.1	0.9–5.06	0.081	1.4	0.42–4.73	0.565
Male gender	0.6	0.33–1.05	0.073	0.6	0.28–1.4	0.258
Being married (versus single: unmarried, widow/widower, divorced)	0.93	0.49–1.75	0.838	1.1	0.5–2.48	0.783
Educational level less than high school	2	1.01–4.26	0.047	1.3	0.56–2.94	0.552
Oro-dental interventions	1.5	0.72–3.08	0.275	1.3	0.54–2.97	0.575
Use of non-disposable syringe	1.7	0.35–19.51	0.071	1.07	0.53–2.15	0.849
Unsafe sexual practices	0.75	0.28–2.01	0.572	0.5	0.08–3.04	0.459
Transfusion of blood and blood products	2.2	1.14–4.39	0.018	1.3	0.55–3.16	0.519
Surgery	1.5	0.86–2.63	0.147	1.1	0.57–2.18	0.743
Piercing/Tattoo and/or acupuncture	1.5	0.83–2.61	0.175	1.1	0.55–2.49	0.667
Dialysis	(0%)	(0.2%)	0.768			

Çalışmaları için Teşekkür Ederiz

Acar, Akalın, Akcam, Altuntaş-Aydın, Apan, Arabacı, Asan, Aydınli, Banak, Bilişik-Doğan, Bozkurt, Bulut, Çetinkol, Çoban, Çopur-Çiçek, Coşkun, Demiraslan, Demirtürk, Ersöz, Evirgen, Gülaçtı, Gülcan, Gürkan, İnci, Iraz, Kadanalı, Kader, Kandemir, Kaplan, Karabay, Karagöz, Kaygusuz, Keçik-Boşnak, Koçak, Köksaldı-Motor, Kölgeliler, Köroğlu, Koruk, Köse, Mıstık, Ocak, Öksüz, Öz-Bölükbaş, Özer, Pehlivanoğlu, Polat, Şafak, Şahin, Şanlı, Sarı, Şencan, Seyhun, Sezak, Sirmatel, Süzük, Tekin-Koruk, Temiz, Tözün, Tunç, Turan, Türk-Dağı, Turunç, Uçmak, Uzun, Yıldırım, Zeteroğlu.