

## Original Article

# Investigating the Impact of the Economic Crisis on Access to Health Services in Greece

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## Abstract

The **aim** of this study was to investigate accessibility problems to healthcare services, especially for vulnerable groups, amid the economic crisis.

**Methods:** A cross-sectional study conducted between September 2015 and September 2016 with a convenient sample of the adult Greek population (N=1,919). Data was collected via a structured questionnaire with closed-ended questions, filled in through telephone interviews. Data analysis was performed using SPSS 21.0 (Statistical Package for Social Sciences) and the two-sided p-value of 0.05 was considered statistically significant

**Results:** Nearly one in five of the participants stated that they encountered problems in accessing and using health services, mainly in relation to accessing outpatient departments (43.4%), and emergency departments of public hospitals (17.2%). Almost half of the respondents (47.7%) reported that they did not use health services even though they needed them. The most important reason (apart from personal perceptions about the severity of the health problem) was due to cost (17.4%). Almost one out of ten (9.6%) reported having visited an Emergency Department for conditions that were not potentially life-threatening because they did not know where else to go (55.4%).

Multivaried logistic regression analysis revealed that participants residing in the rest of Greece reported more frequently unmet health needs than those residing in Athens/Thessaloniki and participants with chronic health problems reported more frequently unmet health needs compared to participants without a chronic health problem (OR=1.28, 95% CI= 1.06-1.54, p = 0.009).

**Conclusions:** Apart from the financial crisis, inherent structural problems of the health system, have negatively affected the access of Greek citizens to healthcare services indicating the necessity to transform the Greek health system into an accessible, effective and sustainable system based on citizens' health care needs and evidence-based decisions.

**Keywords:** access, health services, unmet health needs, economic crisis, Greece

## Introduction

The autumn of 2008 marked the beginning of an economic crisis in Europe that had varied and significant social, political, and economic consequences for the European member states. The economic downturn has reduced GDP significantly and increased both unemployment and poverty. Moreover, the crisis has certainly had a negative impact on access to healthcare services, especially for the most disadvantaged. Access to healthcare services constitutes an essential determinant of health, and access to high quality health services enables good quality of life (Braveman, 2004, European Commission, 2010). The provision of equal access to health care when people need it is and should remain a priority amongst OECD countries. Inequalities of access to health services can be interpreted accurately by measuring self-reported unmet health needs (during the past 12 months), which may affect the health profile of the individuals concerned. In general, people experience reduced accessibility to health care services due to: i) health system's characteristics, e.g. scarcity of resources (lack of health professionals or /and health facilities/devices), or organizational problems and ii) individuals' characteristics e.g. inability to cover the cost of the services or/and the transportation costs due to low-income, unemployment, lack of social security coverage (Mergoupis, 2003; OECD, 2011; Eurofound, 2013a).

According to WHO (2009), people from low socio-economic/vulnerable groups such as the uninsured, unemployed, elderly, immigrants, children, and those suffering from chronic diseases and mental disorders, are most affected in times of severe economic recession. Greece is among the countries most affected by the European financial crisis. The government was forced to introduce economic adjustment programs, make severe cuts in public spending, cut wages to enhance competitiveness, and introduce significant tax increases for revenue collection. Greece has been in this situation for more than ten years and has reported a consequent loss of family and personal income of most citizens (Greeks became 40% poorer from 2008 to 2015), increased long term unemployment rates (from 5.7% in 2010 to 17% in 2016), limited social benefits and insurance coverage, and hindered operation of and access to health services (Stuckler, 2014, Eurostat, 2020a). The proportion of the population at risk of

poverty or social exclusion rose from 27.7% in 2010 to 35.6% in 2016 due to deprivation of basic goods and services (Eurostat, 2020b). The negative impact of the financial crisis has affected mainly low and middle- income groups, limiting their access to healthcare (Filippidis, 2017; Petmesidou, 2014). In an interrupted time series analysis conducted in Greece, was found that the rate of unmet health needs increased between a 5-year span, from 10% in 2010 to 22% in 2015 with the financial factor being the main reason (Filippidis, 2017). Moreover, high rates of out- of- pocket health expenditure have increased health and geographic inequalities, mainly among the poorest and most vulnerable social groups (Economou et al., 2017; Kaitelidou et al., 2013; Liaropoulos et al., 2008). Self-reported unmet health needs for medical examination in Greece due to either high cost or distance or long waiting lists for people in the lower income groups followed an upward trend of 8.8% in 2008, reaching a maximum of 35.2% in 2016. In 2016, Greece reported the second highest rate (14.4% following Estonia with 16.9%) of unmet needs in the EU (mean 4.3%). In particular, the proportion of low-income Greeks reporting unmet health needs exclusively due to increased cost varied from 7.1% in 2008 to a peak of 34.3% in 2016, and decreased significantly to 20.1% in 2018. On the other hand, it is worth mentioned that the corresponding rate of unmet needs for low-income people in the EU differed significantly, varying from 4.5% in 2008 to a maximum of 5.2% in 2013 and to a minimum of 2.2% in 2018 (Eurostat, 2020c).

The aim of this study was to investigate access barriers to healthcare services, focusing on the vulnerable groups, amid the economic crisis. The specific objectives were to identify the most frequent accessibility problems by type of health services and bring into light the reasons behind these problems.

## Methods

This paper draws from a study designed to analyze the impact of economic crisis on the Greek health care system and especially on access to healthcare services using a convenient sample of 1,919 persons. The survey methodology was that of telephone interviews with a specially designed questionnaire developed by experts in the fields of health management and health economics, based on relevant previous tools (Siskou, 2006,

Kyriopoulos, 2006). The response rate was 71.1 %.

The questionnaire consisted of five main parts related to: (a) *health status* of the participants, (b) *utilization* of public and private *health services* (c) *out of pocket health expenditure* (d) *participants' accessibility* to health services and (e) *demographic and socioeconomic characteristics* of the respondents.

The sample was derived from the Hellenic Telecommunications Organization (OTE) non-business telephone directories of 2014. The ratio of the total number of non-professionals telephones to the desired sample size (n=2,000) provided the "call step", according to which the final phone calls were selected.

Prior to the interviews, all participants were informed about the scope, the methodology of the study, the volunteering participation and they were asked for verbal informed consent. Data was collected and analysed in a way that ensured anonymity and confidentiality. The study design was based on the European General Data Protection Regulation (GDPR) and aligned with the Declaration of Helsinki.

The categorical variables are presented as absolute (n) and relative (%) frequencies, while quantitative variables are presented as mean, standard deviation, median, and minimum and maximum values. The normality assumption was evaluated using the Kolmogorov-Smirnov criterion ( $p > 0.05$  for all variables), histograms and normal probability plots.

The dependent variables concerned features related to access and use of health services, and the independent variables were demographic and clinical characteristics. Bivariate analyses were conducted and included  $\chi^2$  (chi-square test) test and  $\chi^2$  (chi-square test) test for trend to determine associations between categorical variables and Student's t-test to investigate group differences within continuous variables.

Also, multivariate logistic regressions were performed; its results were presented using the odds ratios, the 95% CIs and the corresponding p-values. A two-sided p-value of 0.05 was considered statistically significant and data analysis was performed using SPSS 21.0 (Statistical Package for Social Sciences). Last but not least, a pilot study was conducted with a sample of 30 people in March 2015. The respondents were asked twice using the same

questionnaire with an interval of fifteen days. A test-retest was conducted to check the reliability of the questionnaire in the pilot study. In the case of ordinal and quantitative variables, the intraclass correlation coefficient was calculated. Specifically, in all questions that could be calculated, the intraclass correlation coefficient was  $>0.9$  with p-values  $<0.001$ , which indicates an excellent internal consistency of the questionnaire. Moreover, in the case of categorical variates, the McNemar test was performed. Specifically, in all questions that could be calculated, the p-values were  $>0.63$ , which indicates an excellent internal consistency of the questionnaire. Due to limited variability in some questions, the intraclass correlation coefficient was not possible to be calculated or it was impossible for the McNemar test to be performed.

## Results

In Table 1 are presented the demographic and socio-economic characteristics of the participants. Table 2 presents the participants' responses concerning access in the year before the interview. Nearly one in five of the participants (19.1%) declared that they *had problem in accessing and using health services*. In regards to type of health structures where the aforementioned accessibility problems occurred, participants who visited public sector structures (outpatient departments of public hospitals, emergency departments of public hospitals, public hospital clinics and health centres) reported accessibility problems at a rate of 73.4% while the corresponding ratio in private sector structures (outpatient departments of private hospitals, emergency departments of private hospitals, private hospital clinics, private contracted physicians with social insurance schemes, private non-contracted physicians) was found 26.4%. Concerning to the *public sector*, the most significant difficulties people encountered were *long waiting lists* (59.2% said quite / very much) and *lack of staff* (27.9% stated quite/ very much), *indifference and racism* of the medical staff (25.7% stated quite/ very much), the inability to communicate (21.5% stated quite/ very much), lack of *information about the health problem* (17.9% stated quite/ very much), complex *bureaucratic procedures* (17.1% stated quite/ very much).

On the other hand, as far as *the private sector* is concerned, the most significant difficulties for the

participants were *long waiting lists* (43.3% stated quite / very much), *high cost* (17.5% stated quite/ very much), lack of information about the health problem (15.4% said quite/ very much) and *lack of staff* (11.4% stated quite/ very much). Moreover, we found that 9.6% of the respondents reported that they had visited an Emergency Department for health issues that were not potentially life-threatening. The most important reasons given were that they did not know where else to go (55.4%), inability to cover the cost of other health services (e.g., private physicians) (17.9%), difficulties to make an appointment in some other health service (9.2%), lack of insurance (7.6%), and long waiting lists for Outpatient Clinics (6%).

**Unmet health needs:** Almost half of the respondents (47.7%) reported that they did not use health services (during the past 12 months) even though they needed them, indicating *unmet healthcare needs*. The most important reason given related to system structure, apart from individuals' perceptions [self-esteem for the severity of their health issues (31.4%) and the expectation of their health to get improved (17.7%)], was the cost (17.4%). Also, 7.3% of the participants reported that although it was necessary, they did not purchase a medicine due to its cost, and from those 27.7% interrupted completely taking medication due to cost.

**Correlations:** In Table 3 are presented the results of the bivariate analysis between demographic

and social-economic factors (independent variables) and the existence of unmet health needs and statements of not purchasing a necessary medication. Following bivariate analyses, multivariate logistic regression was applied. Its results showed that women reported more frequently unmet health needs than men (OR=1.58, 95% CI= 1.31-1.91,  $p < 0.001$ ), participants with chronic health problems reported more frequently unmet health needs compared to participants without a chronic health problem (OR=1.28, 95% CI= 1.06-1.54,  $p = 0.009$ ) and participants residing in the rest of Greece reported more frequently unmet health needs than those residing in Athens/Thessaloniki (OR=1.32, 95% CI= 1.09-1.59,  $p = 0.004$ ). Moreover, participants without public health insurance reported more frequently that they did not receive a medication due to inability to purchase it than those with public health insurance (OR=4.86, 95% CI= 2.86-8.26,  $p < 0.001$ ). Additionally, more frequently participants with chronic health problems indicated that they did not receive a medication due to inability to purchase it than those without a chronic health problem (OR=2.97, 95% CI= 2-4.41,  $p < 0.001$ ). Finally, our results reveal that the lowest socio-economic status was associated with an increased likelihood of not receiving a medication due to inability to purchase it (OR=0.79, 95% CI= 0.68-0.93,  $p = 0.005$ ).

**Table 1:** Demographic and socio-economic characteristics of the participants (N=1,919)

Characteristics	N (%)
<b>Gender</b>	
Men	779 (40.6)
Women	1,140 (59.4)
<b>Age</b>	49.4 (16.6) <sup>a</sup>
<b>Place of permanent residence</b>	
Athens	528 (27.5)
Areas with university hospitals	412 (21.5)
All other areas	979 (51.0)
<b>Place of birth</b>	
Greece	1,839 (95.8)
Other	80 (4.2)
<b>Marital status</b>	
Married	1,275 (66.4)
Single	444 (23.1)

Divorced	127 (6.6)
Widowed	70 (3.6)
<b>Educational level</b>	
No school	105 (5.4)
Graduates of Primary school	271 (14.1)
Graduates of Secondary school	131 (6.8)
Graduates of High school	750 (39.1)
Graduates from Technological Educational Institute	258 (13.5)
University graduates	333 (17.4)
Postgraduate / Doctoral degree	70 (3.6)
<b>Profession</b>	
Employers / self-employed	262 (13.7)
Employees in office job	482 (25.1)
Employees in manual job	276 (14.4)
Unemployed	177 (9.2)
Housewife / rentiers	196 (10.2)
Students / soldiers	79 (4.1)
Retired	441 (23.0)
<b>Months of unemployment (N<sub>1</sub>=177)</b>	29.8 (35.8)
<b>Public health insurance</b>	
Yes	1,815 (94.6)
No	104 (5.4)
<b>Private Health Insurance</b>	
Yes	156 (8.1)
No	1,763 (91.9)

<sup>a</sup>mean value (standard deviation)

**Table 2:** Participants' responses related to accessibility and utilization of health services in the year before the interview

	N (%)
<b>Problems in accessing and using health services (in general) (N=1,919)</b>	
Yes	366 (19.1)
No	1,553 (80.9)
<b>Health services related to problems (N<sub>1</sub>=366)</b>	
Outpatient Clinics of public hospitals	159 (43.4)
Emergency Departments of public hospitals	63 (17.2)
Private physicians contracted with social security scheme	62 (16.9)
Clinics of public hospitals	32 (8.7)
Private physician not contracted with social security scheme	25 (6.8)
Health center	15 (4.1)
Outpatient Clinics of private hospitals	7 (1.9)
Emergency Departments of private hospitals	2 (0.5)

Clinics of private hospitals	1 (0.3)
<b>Unmet health needs (N=1,919)</b>	
Yes	915 (47.7)
No	1,004 (52.3)
<b>Times with unmet health needs (N<sub>2</sub>=915)</b>	
	2.3 (1.6) <sup>a</sup>
<b>Reasons for unmet health needs (N<sub>2</sub>=915)</b>	
Self-esteem that it was not a serious problem and it was not necessary to visit health services	287 (31.4)
Waiting for improvement in health	162 (17.7)
No access due to cost	159 (17.4)
Previous knowledge of the problem	129 (14.1)
Self-esteem that unnecessary visits to doctors should be avoided	52 (5.7)
Lack of time	29 (3.2)
Unreported reason	28 (3.1)
Self-esteem that the problem can be treated with self-care	22 (2.4)
No access due to distance	22 (2.4)
Lack of trust	19 (2.1)
Other reasons (e.g Unawareness)	6 (0.6)
<b>No purchase of a medicine because of cost even though it was needed (N=1,919)</b>	
Yes	141 (7.3)
No	1,778 (92.7)
<b>Interruption of taking a medicine due to cost although it was necessary (N<sub>3</sub>=141)</b>	
Yes	39 (27.7)
No	102 (72.3)
<b>Reasons for not purchasing a medicine (N<sub>3</sub>=141)</b>	
Unable to pay cost-sharing	58 (41.1)
Lack of money due to major family needs	40 (28.4)
Lack of recipe	36 (25.5)
Non-availability to the social pharmacy /non-governmental Organization	5 (3.5)
Unreported reason	2 (1.4)

<sup>a</sup> mean value (standard deviation)

## Discussion

**Accessibility problems due to health system characteristics:** Almost, one in five participants reported facing difficulties in accessing and using health services (in general), mainly outpatient and emergency departments of public hospitals as well as private physicians contracted with social security scheme. These findings are probably related to the country's primary health care (PHC) sector fragmentation in (PHC), its great

dependence on the private sector and out of pocket funding as well as lack of coordination between primary health care providers and hospital physicians with no clearly defined referral procedures (Economou et al., 2018; Goranitis et al., 2014; Groenewegen & Jurgutis, 2013). It is worth mentioning that accessibility problems to primary health services can result in increased demand for in-hospital or emergency services, even for non -life-threatening health problems that should not be treated in Emergency

Departments (EDs) (Abasolo, 2017). In our study, one in ten of the respondents reported they had visited EDs for non-life-threatening problems mainly because they did not know where else to go, inability to cover the cost of other services / lack of insurance and difficulties to make an appointment /long waiting lists. These findings coincide with the results of a previous study conducted in 2015 with 805 patients visited the EDs of four large scale public hospitals in Attica. Based on the explicit criteria of Hospital Urgencies Appropriateness Protocol (HUAP), 38.1% of patients used EDs inappropriately, mainly due to long waiting lists for other services, unawareness of available outpatient services and increased confidence to hospital (Galanis et al., 2019). Consequently, further development of public primary health care settings is needed as well as with the provision of comprehensive information about the available health services to ensure improved access to appropriate health services

Moreover, the current study revealed that among those reported facing accessibility problems to public health services, almost 60% pointed out long waiting lists as being the most significant difficulty in gaining access to health services. These results are in line with the MIGHEAL project findings, where participants reported waiting lists and the unavailability of an appointment as the most common reasons for unmet needs (Stathopoulou et al., 2018). Our findings with regards to waiting lists could be considered as expected taken into account health personel shortages amid the economic crisis. In particular, from 2009 to 2015, a 17% decrease in staff employed in public hospitals (from 114,471 to 94,659 head counts) was reported. Thus, only 65% of the medical staff and 70% of the nursing personnel were in place in the public hospital sector. A large number of nurses and physicians left in 2012 the NHS, either because they retired, or because they decided to leave the National Health System (NHS). Similar shortages were reported in public Primary Health Care (PHC) units, as only 64% of the physicians' and 67% of the nurses' foreseen places were staffed during 2015-2016 (Economou et al., 2018).

Additionally, a particularly high percentage of the under study population reported unmet health needs (Table 2) with the main reason being the cost (apart from individuals perceptions). These findings imply that individuals delayed or forwent the use of health care services mainly

related to non severe problems to and are in line with the reported extraordinary trend of increasing out of pocket expenditure (OOP) on inpatient care (from €1.2bl in 2010 to €1.58 bl) and restricting by more than 50% OOP expenditure on outpatient care (from €2.953 bl in 2010 to €1.318 bl) amid the economic crisis (Hellenic Statistical Authority, 2021a; Crookes et al., 2020 and Goranitis et al., 2014). We have to mention that our results indicate higher rates of unmet health needs in comparison to previous studies conducted either at the beginning of the economic crisis (Pappa, 2013) or using samples of younger population (EU-SILC: participants >16 years) than the current study population (mean age 49.4 years SD: 16.6; min 20 years max 97 years) and consequently with less health care needs.

Indeed, in a cross-sectional study conducted in Greece at the beginning of the economic crisis in 2010, using a sample of 1,000 adults aged 18 and over, indicated that approximately 10% of the respondents reported unmet needs (Pappa, 2013). Later on, the European Union Statistics on Income and Living Conditions (EU-SILC) study demonstrated that unmet health needs for people (>16 years) within the first quantile in Greece peaked at 35.6%% in 2016 from 7.7% in 2010. However, this rate reduced significantly to 19.3% in 2017 (Eurostat, 2020c) and this can be explained by the enactment in 2016 of a new law amendment (Government Gazettes No. 4368 04/04/2016) providing the right of free access to all public health services for the provision of medical and pharmaceutical care to uninsured groups. Additionally, our findings reveal a regional gap, with participants residing in the rest of Greece reporting more frequently unmet health needs than did those residing in the two big cities of Athens/Thessaloniki. It should be noted that Greece faces significant geographical inequities regarding health resources allocation. For instance, physicians' density varies from about 300 per 100,000 pop. in Western Macedonia and Central Greece to 874 per 100,000 pop. in Attica (Hellenic Statistical Authority, 2021b). Thus, re-allocation of the resources in a more efficient way should become an issue of high priority for policy-makers.

#### **Accessibility problems due to individuals' characteristics**

In regards to individuals' characteristics affecting health services accessibility, our results reveal

that participants with chronic health problems were associated with increased likelihood of reporting unmet health needs than did participants without a chronic health problem. These results could be attributed to increased health needs of these patients and probably to economic constraints associated with the burden of the chronic disease (e.g. increased out of pocket health expenses, early exit from labor market or prolonged absenteeism from work environment). Indeed, based on the results of a former cross-sectional study conducted in 2013 by Kyriopoulos et al. (2014) via telephone interviews (N=1,594 chronically ill patients) 63.5% of participants reported unmet health needs due to economic barriers. In addition, unemployment has been found to be an important factor related to difficulties in accessing health care services due to limited income. High-income patients can overcome barriers to access as they can pay for healthcare beyond the public health services, implying that high-income chronic patients can increase their alternatives, e.g., through private services or even informal payments or co-payments (Kyriopoulos et al., 2014). Moreover, the current study results reveal that uninsured participants from lowest socio-economic groups with chronic health problems were associated with increased likelihood of not receiving a medication due to inability to purchase it. Among those participants in need of medication intake, some patients did not purchase medication and others interrupted necessary medication intake because of the cost. Surveys show that income reduction (during the years of economic crisis) has deprived people of access to appropriate healthcare, forcing them even to reduce or stop taking medication (Tountas et al., 2011; Tountas et al., 2015). Our results coincide with those of a former study conducted by Tsiantou et al. (2014) with 176 physicians taken care of diabetes mellitus 2 patients reporting that almost a quarter of their patients ceased or modified their treatment either because they were unable to access services to prescribe their medications or because they lost their insurance coverage.

However, the current study findings seem to be worsen when compared to the results of a study conducted in 2019 among 1,009 Greek elderlies (mean age 70 years) with chronic conditions. According to Monokrousou et al. (2020), only 5.5% and 12% of elderlies reported inability to buy prescribed drugs and reduction to medications dosages due to cost, respectively. The aforementioned diversified results, compared to our study corresponding rates, can be attributed to aging differences of the under study populations (mean age: 49.4 years for the current study participants vs 70 years for the former study participants) as elderly patients view pharmaceuticals as an important tool for maintaining their health and managing their illnesses (Park et al., 2018). Thus, to cope with medication expenses, elderly had to economize on other family expenses, such as entertainment (88%), travel (88%), and clothing (83%) Monokrousou et al. (2020). In addition, our findings reveal a gender gap, with women reporting more frequently unmet health needs than do men. These results are in line with the findings of the EU- Survey on Income and Living Conditions with a higher rate of Greek women (15.8%) reporting unmet medical needs in 2016 compared to men (12.9%) (Eurostat, 2020c). Women compared to men are more aware of health issues and more willing to seek information on health prevention and promotion issues so they are able to identify more easily health needs and thus to recognize unmet health needs (Ek, 2015). In general, Moreover, socio-economic factors maybe correlated to increased unmet health needs of women. women undertake a variety of in-home responsibilities (e.g. providing informal care to their families' members) and have a higher likelihood (compared to men) in precarious employment (especially during the economic crisis) with the risk of losing income in case they take time from their jobs to attend medical appointments. Thus, women's in-home time consuming responsibilities and the structure of their labor status can increase their risk of having an unmet healthcare need (Bryant, et al., 2009; Armstrong, 2006).



Values are expressed as n (%) unless otherwise stated <sup>a</sup> chi-square test <sup>b</sup> mean value (standard deviation) <sup>c</sup> t- test <sup>d</sup> chi-square trend test

**Table 3:** Bivariate analysis between demographic and social-economic factors (independent variables) and the existence of unmet health needs and statements of not purchasing a necessary medication due to cost.

Independent Variable	Problem in access and use of health services (in general)		p-value	Unmet health needs		p-value	Not receiving a medication due to cost although it was necessary		p-value
	No	Yes		No	Yes		No	Yes	
<b>Gender</b>			<b>0.002<sup>a</sup></b>			<b>&lt;0.001<sup>a</sup></b>			<b>0.1<sup>a</sup></b>
Men	657 (84.3)	122 (15.7)		462 (59.3)	317 (40.7)		731 (93.8)	48 (6.2)	
Women	896 (78.6)	244 (21.4)		542 (47.5)	598 (52.5)		1047 (91.8)	93 (8.2)	
Age <sup>b</sup>	49.4 (16.6)	49.7 (16.5)	0.7 <sup>c</sup>	49.3 (16.9)	49.6 (16.3)	0.6 <sup>c</sup>	49.2 (16.8)	53.0 (14.1)	<b>0.002<sup>c</sup></b>
<b>Place of permanent residence</b>			0.7 <sup>a</sup>			<b>0.001<sup>a</sup></b>			0.6 <sup>a</sup>
The rest of Greece	986 (81.2)	228 (18.8)		603 (49.7)	611 (50.3)		1128 (92.9)	86 (7.1)	
Athens/ Thessaloniki	567 (80.4)	138 (19.6)		401 (56.9)	304 (43.1)		650 (92.2)	55 (7.8)	
<b>Place of birth</b>			<b>0.1<sup>a</sup></b>			<b>0.07<sup>a</sup></b>			<b>0.07<sup>a</sup></b>
Greece	1494 (81.2)	345 (18.8)		970 (52.7)	869 (47.3)		1708 (92.9)	131 (7.1)	
Abroad	59 (73.8)	21 (26.3)		34 (42.5)	46 (57.5)		70 (87.5)	10 (12.5)	
<b>Public health insurance</b>			0.6 <sup>a</sup>			0.8 <sup>a</sup>			<b>&lt;0.001<sup>a</sup></b>
Yes	1471 (81.0)	344 (19.0)		951 (52.4)	864 (47.6)		1696 (93.4)	119 (6.6)	
No	82 (78.8)	22 (21.2)		53 (51.0)	51 (49.0)		82 (78.8)	22 (21.2)	
<b>Private health insurance</b>			0.5 <sup>a</sup>			<b>0.1<sup>a</sup></b>			0.6 <sup>a</sup>
Yes	123 (78.8)	33 (21.2)		91 (58.3)	65 (41.7)		146 (93.6)	10 (6.4)	
No	1430 (81.1)	333 (18.9)		913 (51.8)	850 (48.2)		1632 (92.6)	131 (7.4)	
<b>Chronic health problem</b>			<b>&lt;0.001<sup>a</sup></b>			<b>&lt;0.001<sup>a</sup></b>			<b>&lt;0.001<sup>a</sup></b>
Yes	711 (77.2)	210 (22.8)		444 (48.2)	477 (51.8)		820 (89.0)	101 (11.0)	
No	842 (84.4)	156 (15.6)		560 (56.1)	438 (43.9)		958 (96.0)	40 (4.0)	
<b>ESOMAR</b>			<b>0.001<sup>d</sup></b>			<b>0.02<sup>d</sup></b>			<b>&lt;0.001<sup>d</sup></b>
E	175 (72.9)	65 (27.1)		117 (48.8)	123 (51.2)		218 (90.8)	22 (9.2)	
D	292 (78.7)	79 (21.3)		183 (49.3)	188 (50.7)		326 (87.9)	45 (12.1)	
C2	613 (83.1)	125 (16.9)		383 (51.9)	355 (48.1)		692 (93.8)	46 (6.2)	
C1	353 (83.1)	72 (16.9)		240 (56.5)	185 (43.5)		401 (94.4)	24 (5.6)	
A/B	115 (83.3)	23 (16.7)		77 (55.8)	61 (44.2)		134 (97.1)	4 (2.9)	

**Limitations:** The study was conducted from September 2015 to September 2016; thus it does not include the period from 2012 to August 2015 during which the economic recession peaked. Moreover, unmet healthcare needs do not constitute an explicit indicator of accessibility to health services, as individual perceptions (for health) are also reflected. Additionally, as data on unmet health needs were self-reported, it constitutes subject to respondent bias (partly correlated to past events recall inaccuracy).

**Conclusions-Proposals:** The financial crisis has clearly negatively affected the access of Greek citizens to healthcare services and especially those from vulnerable groups. However, the crisis constitutes one dimension of the difficulties in accessing healthcare system; the other dimension is due to inherent structural problems of the health system, such as fragmentation of services, not fully development of public PHC and regressive financing. Thus, the Greek healthcare system, although the citizens' universal coverage by the public health insurance and the establishment of the National Health System since 1983, seems in practice to be inequitable favouring the wealthiest citizens (Siskou et al., 2008; Crookes et al., 2020). The determinants negatively impacting on accessibility to health services include (as revealed by the current study) lowest socio-economic group, lack of insurance coverage, chronic health problems, female gender and residing in non-urban areas. Despite the limitations of the study, the results may show how the economic crisis has affected access to healthcare services and impel policymakers to improve access in a challenging time period and environment. As the effects of economic recession on health are various and may become more intense in the future, stakeholders need to take measures to prevent a deterioration of the health indicators of the Greek population. Governments should protect groups in vulnerable situations by facilitating access to health services and abolishing out-of-pocket payments for such people at least. Some important access measures for improving this situation arising from the financial crisis should be targeted at directing patients towards primary care. Strengthening PHC has been recognized as the most efficient way to facilitate access to high-quality healthcare and the gold

pathway to achieve "health for all" due to its potential for cost containment and thus improved sustainability of the healthcare system (Souliotis et al., 2019; Groenewegen & Jurgutis, 2013). In response to the necessity of enhanced PHC, the Greek government in collaboration with the World Health Organization put in place, in the second semester of 2017, the Law 4486/2017 regarding the PHC reform. Thus, the first Public Local Health Units (under the acronym TOMY) staffed with general practitioners, pediatricians, nurses and social workers were established in December 2017. These new PHC units aimed to contribute to the provision of high quality primary care services to citizens, while at the same time favoring the health system by improving the health of the population and helping to reduce health expenditure (Konstantakopoulou et al., 2019). While the results of the TOMYs first evaluation studies reveal positive users experiences mainly from the quality of medical and nursing care (Konstantakopoulou et al., 2019), there is still a long way to go to transform the Greek health system into an accessible, effective and sustainable system. This transformation, however, needs to be directed by citizens' health care needs and evidence-based decisions. Implementing population health needs assessment (by gender, age group and region) as a public policy tool will bring on light emerging health problems or behavioral trends (Marshall, 2019). Creating the appropriate information-related infrastructure, such as a dynamic e-health map reporting both the supply and the demand side as well as quality indicators will aid policy-makers and health professionals to facilitate targeted efficient reforms and resources re-allocation. Perhaps, the lessons learned during the economic crisis will demonstrate to have at least one "silver lining" facilitating for an improved health system in the future (Goranitis et al., 2014).

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