Economic Crisis and Portuguese National Health Service Physicians: Findings from a Descriptive Study of Their Perceptions and Reactions from Health Care Units in the Greater Lisbon Area

ARTIGO ORIGINAL

A Crise Económica em Médicos do Serviço Nacional de Saúde: Estudo Descritivo das Suas Perceções e Reações em Unidades de Saúde na Região da Grande Lisboa

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Acta Med Port 2017 Apr;30(4):263-272 ▪ https://doi.org/10.20344/amp.7690

ABSTRACT

Introduction: In Europe, scant scientific evidence exists on the impact of economic crisis on physicians. This study aims at understanding the adjustments made by public sector physicians to the changing conditions, and their perceptions on the market for medical services in the Lisbon metropolitan area.

Material and Methods: A random sample of 484 physicians from São José Hospital and health center groups in Cascais and Amadora, to explore their perceptions of the economic crisis, and the changes brought to their workload. This paper provides a descriptive statistical analysis of physicians' responses.

Results: In connection to the crisis, our surveyed physicians perceived an increase in demand but a decrease of supply of public health services, as well as an increase in the supply of health services by the private sector. Damaging government policies for the public sector, and the rise of private services and insurance providers were identified as game changers for the sector. Physicians reported a decrease in public remuneration (- 30.5%) and a small increase of public sector hours. A general reduction in living standard was identified as the main adaptation strategy to the crisis. Passion for the profession, its independence and flexibility, were the most frequently mentioned compensating factors. A percentage of 15% of physicians declared considering migration as a possibility for the near future.

Discussion: The crisis has brought non-negligible changes to physicians' working conditions and to the wider market for medical services in Portugal.

Conclusion: The physicians' intrinsic motivation for the professions helped counterbalance salary cuts and deteriorating working conditions.

Keywords: Economic Recession; Health Policy; Physicians; Public Health

RESUMO

Introdução: Na Europa, a evidência sobre o impacto da crise económica nos médicos ainda é escassa. Este estudo explora perceções, opiniões e estratégias de adaptação à crise económica por parte de médicos do setor público na área da Grande Lisboa em Portugal.

Material e Métodos: Um inquérito foi aplicado a 484 médicos, selecionados aleatoriamente, no Hospital de São José de Lisboa (n = 302) e nos agrupamentos de centros de saúde primários de Cascais (n = 96) e Amadora (n = 86). Este trabalho baseia-se na análise estatística descritiva das respostas dadas pelos médicos inquiridos sobre as suas perceções do impacto da crise económica no mercado de serviços médicos (n = 484), das mudanças introduzidas no seu trabalho nos setores público (n = 346) e privado (n = 187), e nas suas intenções de migrar (n = 482).

Resultados: Os médicos inquiridos percepcionaram um aumento da procura dos serviços, mas também uma redução de serviços oferecidos no público, relacionando estas situações com a crise e com um aumento da oferta no setor privado. Os médicos reportaram uma diminuição de salário no setor público (- 30,5%), e um ligeiro aumento no número de horas de trabalho semanal neste setor (+ 2 horas). As respostas indicaram que a mediana das horas de trabalho e rendimentos no privado mantiveram-se constantes entre 2010 e 2015 (16 horas e €2000 mensais). O ajustamento no estilo de vida foi reportado como a principal consequência da crise. O gosto pela profissão médica, a independência e a flexibilidade do trabalho foram os fatores de alívio mais mencionados. Uma percentagem de 15% dos médicos inquiridos declarou considerar a emigração como uma opção para o futuro.

Discussão: Segundo os médicos inquiridos, a crise trouxe mudanças importantes nas suas condições de trabalho e no mercado dos serviços médicos.

Conclusão: À redução salarial e às piores condições de trabalho, correspondeu uma resposta baseada na motivação intrínseca da profissão.

Palavras-chave: Médicos; Política de Saúde; Portugal; Recessão Económica; Saúde Pública

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INTRODUCTION

Different European countries have been facing a financial crisis over the past few years, with a potential influence on sectors of the society such as health.[1–5] Despite no clear change in the health status of the Portuguese population as well as in the access to healthcare has been scientifically proved,[6] a negative impact on the right to individual and public health protection can exist due to factors not directly related to the health sector, such as unemployment, purchasing power reduction and increased healthcare costs.[4]

The relevance of availability, accessibility, acceptability and healthcare workforce quality aimed at healthcare universal coverage have been reinforced by the Recife Declaration reinforced.[7] Physicians are probably the most expensive resource of the healthcare systems in high-income countries,[8] representing a significant part of public healthcare costs and cuts in public health budgets have subsequently been made.[7] International studies have shown that health budget cuts and wage cuts generate dissatisfaction in physicians and these respond emigrating abroad, claiming early retirement or moving from the public to the private sector.[9–11] Healthcare services market has changed and access of the population to public healthcare services is potentially affected[2] in a cumulative effect with the disparities in physician distribution, which does not correspond to demand needs, according with some authors.[12,13]

The same authors have described that economic expansion leads to an increased physician supply and usage.[12,13] However, even though some hypotheses have been introduced on the impact of an economic recession over service supply, no definite conclusion has yet been reached and some models predicted a lower impact on medical service supply due to price decrease and a partially compensatory increase in private sector.[14] Paxson[15] described that, instead of maximizing the earned income, physicians hold a second job, i.e. working in the public sector for stability, recognition and training and in the private sector for flexibility and extra income. However, these hypotheses are based on the assumption of the presence of infinite labour supply in public and private sector. In situations of generalised crisis, this cannot be a realistic hypothesis and, for this reason, the relevance to substantiate adaptive strategies of physicians to respond to financial crisis in a health system controlled by public services and public funding is warranted.[16]

The 2008 world financial crisis induced organisational change in the healthcare sector. Different cost containment measures were adopted in Portugal in 2009-2010, namely wage freezes, wage and promotion cuts and freeze on public sector hiring. A reduction in travel and food expenditure as well as in overtime pay has also occurred.[17] The signature of the Memorandum of Understanding for 2011-2014 between the Portuguese Government and the bailout financial institutions (known as the Troika) – the International Monetary Fund, the European Central Bank and the European Commission – has established a range of measures aimed at the improvement of efficiency and effectiveness of the healthcare sector[17,18] and some of which have affected healthcare human resources. Wage cuts in the public sector, which have affected healthcare professionals, may have been one of the austerity measures that more dissatisfaction has produced.

This study aimed at understanding the way public-sector physicians, whether or not working on exclusive contracts, have themselves adapted to changes in working conditions related to the financial crisis, as well as their perception on the market of medical services in Greater Lisbon area.

MATERIAL AND METHODS

This study was based on the descriptive statistical analysis of responses given by physicians on their perception and opinion regarding the impact of the financial crisis on the market of medical services and their experiences in a survey carried out between January and April 2015, in Greater Lisbon area (Appendix 1) [http://www.actamedicaportuguesa.com/revista/index.php/amp/article/view/7690/4998].

This was a descriptive study carried out in two groups of primary care health centres (*agrupamentos de centros de saúde primários [ACES]*) - ACES of Amadora and ACES of Cascais and at a secondary healthcare hospital, the *Hospital de São José (HSJ), Centro Hospitalar de Lisboa Central (CHLC)*. Nine municipalities are included in the Greater Lisbon area, covering approximately 2,242,326 people, including eight ACES and eight hospitals/hospital centres. The ACES of Amadora corresponds to the group of health centres of the Municipality of Amadora, involving 12 functional units divided into three *unidades de cuidados de saúde personalizados (UCSP)*, six *unidades de saúde familiares (USF)*, one *unidade de cuidados na comunidade (UCC)*, one *unidade de saúde pública (USP)* and one *unidade de recursos assistenciais partilhados (URAP)*, responding to the needs of a population of around 175 thousand people. The ACES of Cascais is organised into 18 functional units divided into four UCSP, 10 USF, two UCC, one USP and one URAP, responding to the needs of a population of around 205 thousand people. Both ACES are under the authority of the *Administração Regional de Saúde de Lisboa e Vale do Tejo*. The CHLC involves the hospital network of the central region of Lisbon, including the *Hospital de São José* and mainly responds to the needs of the population from Lisbon. Survey respondents were divided by weekly working hours set out in their contract, namely: on a 35-hour (n = 108), on an always-available 35-hour (n = 10), on a 40-hour (n = 234), on an always-available 40-hour (n = 3), on a 42-hour working week (n = 97) and others (n = 32).

These healthcare units were intentionally selected in order to include specialists with a different profile working in areas with populations with different income patterns, seeking knowledge from different realities. Surveys were applied to a random sample of physicians from three healthcare institutions. The sample size was initially calculated based on the lists provided by the administration of the three institutions. A proportional stratified sampling method has been used, per gender, type of healthcare unit and medical career grade, with subsequent adjustments due to outdated listsstha that were initially provided, as shown in Table 1. The selection of physicians in each grade has been randomly obtained using SPSS software. In practice, the initial sample size has been inflated in order to include at least 70% of the total for each grade.

Not until 70% of the official physician population of the three healthcare units was reached was recruitment of participants halted. However, this percentage was not obtained regarding certain professional grades due to the absence of physicians at the time when the team went to the units or due to refusal to participate (namely regarding General Practitioners working at the HSJ and the ACES of the Amadora, Specialty Registrars at the ACES of Cascais and Amadora, Junior House Officers at the HSJ and Consultants at the ACES of Cascais). On-site surveys have been carried out by trained interviewers. Most surveys (263 (54.3%)) were completed by the interviewer, 183 (37.8%) were self-completed by respondents in the presence of the interviewer and 38 (7.9%) were self-completed. However, the analysis of the distribution and the results did not show any differences between surveys completed by interviewers and self-completed and therefore pooled results are shown.

The questionnaire was designed based on key-items identified in literature on physician's behaviour regarding financial issues.[19] In addition, preliminary interviews regarding these issues were carried out and applied to key informers, decision-makers and junior and senior physicians working in primary care and in hospitals.[20] Wage and contract official data were used in order to triangulate the information provided by physicians.

This was a 56-item questionnaire, organized into six sections: general characteristics of physicians; overall impact of the crisis; impact on public-sector medical work; impact on private-sector medical work; non-medical and leisure activities and adaptive strategies in response to crisis. Some of the items were designed in order to generate multiple choice or closed response, other have been designed so that the participant would give his/her choice in a quantitative 0-10 point analogic visual scale, in which 0 meant no impact / influence and 10 maximum impact / influence (Appendix 2) [http://www.actamedicaportuguesa.com/revista/index.php/amp/article/view/7690/4999]. Two events were specifically considered as 'crisis' in this article: the first one was the recession due to the 2008-2015 global financial crisis related to the collapse of Lehman Brothers[21] and the second one regards the austerity measures

Table 1 – Location, medical career grade and initial and final sample size

Location	Medical career grade	Official population*	Applied surveys	Refusals
Hospital de São José	Senior Consultant	25	32	4
	Consultant	116	87	18
	Specialist Registrar	113	80	6
	General Practitioner	2	1	0
	Specialty Registrar (Senior House Officer)	144	92	2
	Junior House Officer	24	10	0
ACES of Cascais	Senior Consultant	9	8	1
	Consultant	43	32	5
	Specialist Registrar	39	36	3
	General Practitioner	6	3	1
	Specialty Registrar (Senior House Officer)	31	17	1
	Junior House Officer	0	0	0
ACES of Amadora	Senior Consultant	7	7	0
	Consultant	40	28	5
	Specialist Registrar	26	26	0
	General Practitioner	4	2	2
	Specialty Registrar (Senior House Officer)	39	23	0
	Junior House Officer	0	0	0
Total		668	484	48

Source: Survey among physicians on the impact of the financial crisis in Portugal (2015)

* This population corresponds to the 'official' registration number of physicians in the list of Human Resources of the institutions. In some cases, these lists showed to be doubtful and different on-site numbers have been found; therefore, the number of applied questionnaires may have been higher to the official population of physicians.

introduced by the Portuguese Government due to the public debt crisis produced by the financial crisis. The article did not intend to separate these two effects and rather considered the period 2010-2015 as this was the timeframe when the effects were mainly felt in Portugal.

The questionnaire was first applied at the hospital and subsequently at the healthcare centres, by a team of 15 trained interviewers and supervised by researchers of the *Instituto de Higiene e Medicina Tropical (IHMT)*. The study has been approved by the Ethics Committee of the *Administração Regional de Saúde de Lisboa e Vale do Tejo*, the Ethics Committee of the IHMT and the Administrations of the three institutions where the survey took place. An informed consent has been obtained from all respondents.

RESULTS

In total, 532 physicians from the three institutions were contacted and 484 respondents were obtained. From these, 301 (62.2%) worked at the HSJ, 96 (19.8%) at the ACES of Cascais and 86 (17.8%) at the ACES of Amadora (Table 2). An overall 90.7% response rate has been obtained and 48 physicians refused to participate. The analysis of the distribution of physician's characteristics did not show any significant differences between respondents and refusals. As the same questionnaire has been applied in the three institutions, a lower number of responses by physicians from the ACES to items regarding the participation in the private sector has been found, as these have lower access to the private sector and many worked on exclusive contracts in the public sector.

Most physicians (301) in our group worked at the HSJ, while 111 at an A-model USF and 21 at a B-model USF. Most participants were female (57%) with a Portuguese nationality (98%) and a median age of 42 years, aged

Table 2 – General characteristics of respondents

Variable		Total	
		n	%
Age group (n = 479)	24 – 35	187	39.0%
	36 – 45	63	13.3%
	46 – 55	93	19.2%
	56 – 65	132	27.3%
	≥ 66	4	0.8%
Gender (n = 484)	Male	208	43.0%
	Female	276	57.0%
Nationality (n = 484)	Portuguese	473	97.7%
	Other	11	2.3%
Medical career grade (n = 484)	Senior Consultant	47	9.7%
	Consultant	147	30.4%
	Specialist Registrar	142	29.3%
	General Practitioner	6	1.2%
	Specialty Registrar (Senior House Officer)	132	27.3%
	Junior House Officer	10	2.1%
Type of contract (n = 482)	Exclusive	136	28.2%
	Non-exclusive	203	42.1%
	Specialty Registrar (Senior House Officer)	125	25.9%
	Other	18	3.7%
Weekly working hours (n = 484)	35-hour	118	24.4%
	40-hour	237	48.9%
	42-hour	97	20.0%
	Other	32	6.6%
Type of healthcare unit (n = 484)	Hospital	301	62.2%
	A-Model USF	111	22.9%
	B-Model USF	21	4.3%
	USCP	36	7.4%
	USP	13	2.7%
	Other	2	0.4%

Source: Survey among physicians on the impact of the financial crisis in Portugal (2015)
Note: Overall numbers may not reach a total of 484 in some items due to some incomplete responses.

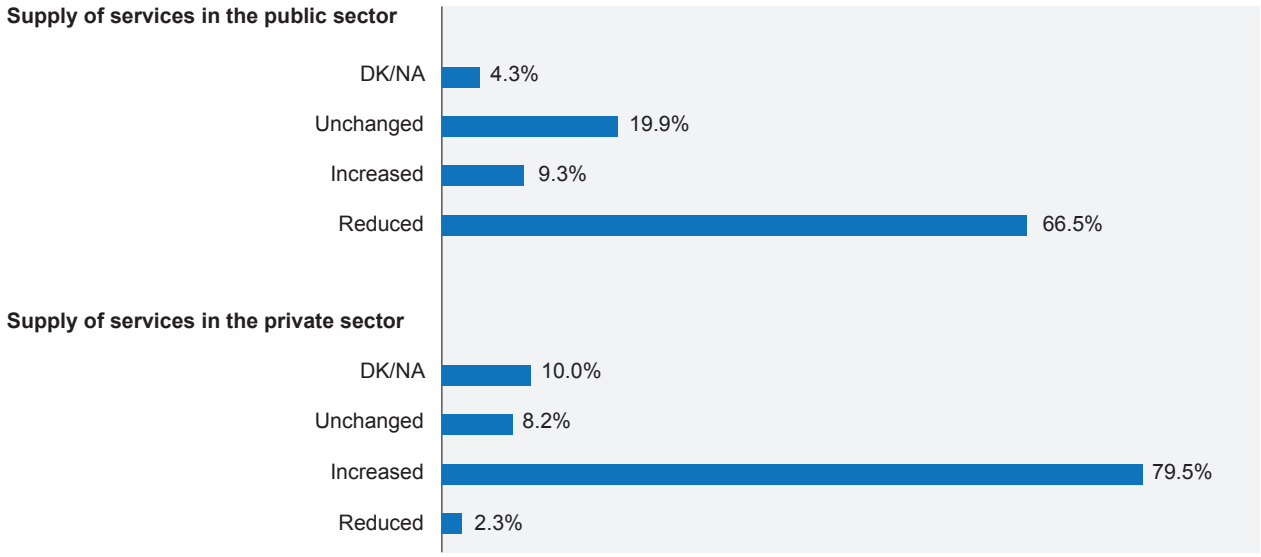

Figure 1 – Perceptions on the supply of healthcare services in the public and the private sector
Source: Survey among physicians on the impact of the financial crisis in Portugal (2015)

Table 3 – Perception of the factors with an influence on the functioning of the public and the private sector over the past five years

Factors with an influence on the public sector	n	Median	Percentile 25 - 75
Health policies harmful to the public sector	469	9.0	7.0 - 10.0
Lack of motivation	480	8.5	7.0 - 9.7
Exodus of staff	478	8.0	7.0 - 9.0
Poorer working conditions	480	8.0	6.0 - 9.0
Primary Healthcare [*Cuidados de Saúde Primários* (CSP)] reform	470	6.0	4.0 - 8.0
Competition from the private sector*	479	6.0	4.0 - 7.5
Reform of hospital referrals	476	6.0	4.0 - 7.4
Change in patient's profile*	469	5.0	3.0 - 7.0
Factors with an influence on the private sector	**n**	**Median**	**Percentile 25 - 75**
Growth of the large hospital groups	468	8.0	7.0 - 9.0
Increased offer of private health insurances*	466	8.0	6.0 - 9.0
Exodus of staff from the public to the private sector	468	8.0	6.0 - 9.0
Health policies that have improved the development of the private sector	458	8.0	6.0 - 9.0
Poorer working conditions in the public sector*	469	7.0	5.0 - 9.0
Reduction in purchasing power*	467	6.0	4.0 - 8.0

Source: Survey among physicians on the impact of the financial crisis in Portugal (2015)
* Demand related factors. Note: Overall numbers may not reach a total of 484 in some categories due to some incomplete responses.

mostly 24-35 (39.0%) and 56-65. Most respondents worked as Specialist Registrars and as Consultants, followed by Specialty Registrars (mainly at the HSJ). A percentage of 42.1% of respondents worked at the HSJ on exclusive contracts and, from these, 68.9% worked on at least a 40-hour working week.

Physician's insight regarding the overall impact of the financial crisis on the Portuguese Health System

Most respondents have described an increased demand for health services by the population from 2010, in the public (259 – 53.5%) as well as the private sector (266 – 55.9%). Most respondents (321 – 66.5%) described a reduction in supply at the public sector, in contrast with 380 respondents (79.5%) who have described an increased supply in the private sector (Fig. 1).

The following factors were described by the participants as having mostly influenced the public sector over the past five years, in a 0-10 scale (Table 3): 'healthcare policies affecting the public sector' with a 9.0 median score, 'lack of motivation' with 8.5, 'poorer working conditions' and 'exodus of staff', both with a 8.0 median score. 'Change in user's profile' has been the factor with the lowest influence, with a median 5.0 score. As regards the private sector (Table 3), the following were described by the participants as having had the most influence: 'growth of large hospital

groups' with a median score of 8.0, 'increased supply in private health insurance', 'exodus of staff from the public to the private sector' and 'health policies that have helped the development of the private sector', all with a median score of 8.0. All these factors showed scores above the middle point of the scale (> 5); the factor 'reduction in user's purchasing power' has obtained the lowest median score (6.0).

Impact of the crisis on public-sector medical work

Most respondents working at the public sector (346 - 71.5%) have described an average two-hour working week increase between 2010 and 2015, with a median 40-hour working week in 2010 and 42-hour in 2015. In ACES of Cascais and Amadora, a more evident working week increase has been found when compared to the HSJ (9.0%, 5.4% and 3.4%, respectively). No significant changes have been found as regards the number of monthly working hours in Emergency. As regards monthly net income, 296 (61.2%) respondents have described a €500 loss per month from 2010 to 2015, with a median monthly net income of €2,300 in 2010 and €1,600 in 2015, corresponding to a 30.5% income loss. A higher loss has been found in public-sector physicians working at the HSJ (33.8%) when compared to those working at the ACES of Cascais (21.4%) and Amadora (15.7%).

Most respondents (384 – 80.7%) have described no career development over the past four years, 194 (40.4%) have responded that they would not recommend their work in the public sector to a colleague and 32.5% would recommend it with no exclusive component. In addition, 325 (67.7%) respondents working in the public sector were unwilling to work an extra hour, even when associated with an extra payment; however, among the 114 respondents working in the public sector who were willing to work more time, a median net €30 wage per extra hour has been described.

Impact of the crisis on private-sector medical work

In total, 187 (38.7%) respondents working both in the private and public sector mainly worked in the HSJ (96.3%) (Fig. 2) and 87 (46.2%) from these worked in a private hospital and 73 (39.2%) in a private clinic.

A median 16-hour working week has been described by private-sector doctors in 2010 and 15-hour in 2015. As regards monthly net income, 88 (47.1%) private sector respondents did not describe any change between 2010 and 2015, with a median of €2,000 per month on both years. More than 80% (86.2%) of the respondents described that they would recommend their work in the private sector to a colleague, 114 (60.0%) would accept working an extra hour in the private sector and only 68 from these have described a median €40 wage per extra hour.

Adaptive strategies in response to the crisis

Most respondents (327 – 68.0%) described having changed their lifestyle due to the crisis on a 0-10 scale as (i) 'a reduction in standard of living' with a median 7.0 score and (ii) 'an increase in the number of work hours' with a median score of 4.0 (Table 4). As regards the factors that have relieved the impact of the crisis, 'love for the medical profession' with a median score of 9.0, 'independence and flexibility at work' with a 5.0 median and 'working opportunities in the private sector' with a median of 4.0 have been described by respondents.

Push factors for migration

Most respondents (409 – 84.9%) have declared they had no intention to emigrate over the following two years and 73 (15.1%) of those who had such intention described 'dissatisfaction with career perspectives', 'dissatisfaction with current wage' and 'lack of appreciation of the profession

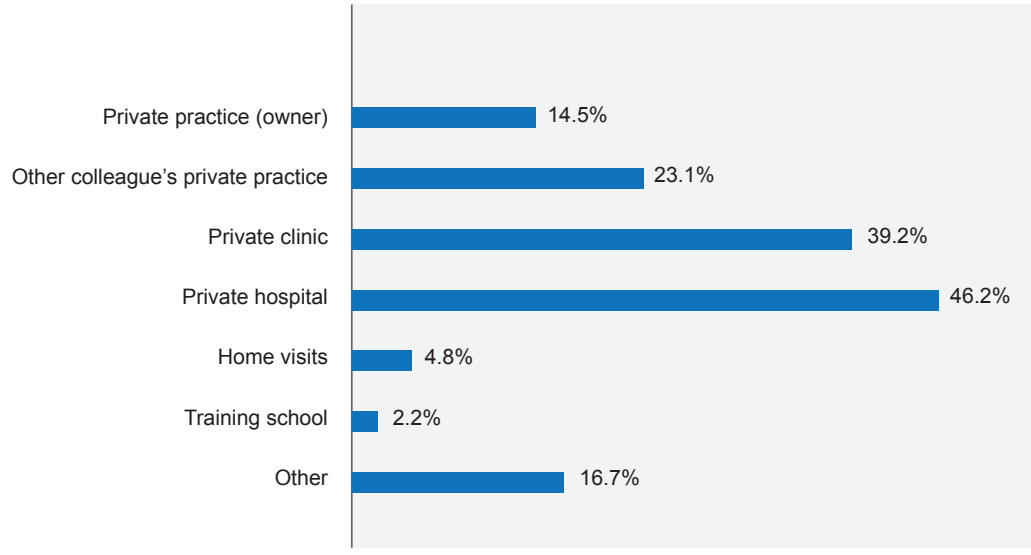

Figure 2 – Type of establishment of physicians working in the private sector
Source: Survey among physicians on the impact of the financial crisis in Portugal (2015)

Table 4 – Impact factors of financial crisis and relieving factors

Impact factors	n	Median	Percentile 25 - 75
Poorer standards of living	478	7.0	5.0 - 9.0
Increased work hours	475	4.0	0.0 - 8.0
Reduction in house cleaning expenses	477	3.0	0.0 - 7.0
Reduction in transportation expenses	477	3.0	0.0 - 6.0
Reduction in family and children expenses	470	0.0	0.0 - 5.0
Other professional activity	475	0.0	0.0 - 4.0
Thinking about early retirement	464	0.0	0.0 - 3.0
Relieving factors	**n**	**Median**	**Percentile 25 - 75**
Love for the medical profession	470	9.0	7.9 - 10.0
Independence and flexibility at work	470	5.0	2.0 - 7.0
Working opportunities in the private sector	469	4.0	0.0 - 8.0
Higher wage than other professions	465	2.0	0.0 - 5.0
Earned income of partner	463	0.0	0.0 - 5.0
Wage in the public sector	468	0.0	0.0 - 2.0
Working on exclusive contract	466	0.0	0.0 - 2.0
Economic support by extended family	467	0.0	0.0 - 2.0
Request for early retirement	460	0.0	0.0 - 0.0
Personal stock income	465	0.0	0.0 - 0.0

Source: Survey among physicians on the impact of the financial crisis in Portugal (2015)

in Portugal' as major determinants for the intention to emigrate, with a median score of 9.5, 9.3 and 9.0, respectively (Appendix 3) [http://www.actamedicaportuguesa.com/revista/index.php/amp/article/view/7690/5000].

The most relevant factors related to the intention of remaining in Portugal included 'love to live in Portugal' with a median score of 8.0, 'love for the medical profession in Portugal' and 'family commitments in Portugal', both with a median score of 8.0. Conversely, 'speaking no other language' and 'difficulty in obtaining a job abroad' were the reasons described as less relevant (Table 5).

DISCUSSION

The information obtained at the HSJ and at the ACES of Cascais and Amadora showed that physicians are aware of an increased demand for healthcare services due to the crisis, in addition to an increased supply in the private sector and reduced supply in the public sector. Public-sector physicians have described a 30.5% wage loss, despite a two-hour increase in their working week. Most respondents have declared that they would only recommend their work in the public sector on a non-exclusive contract; most respondents that also worked in the private sector responded has having a job in private hospitals and clinics and no increase in working hours nor in the income related to private work was described between 2010 and 2015. Most respondents were satisfied with their work at the private sector and some adjustments in their lifestyle were described as the main consequence of the crisis. Around 15% of the respondents described having considered emigration as a possible option for a near future, due to dissatisfaction regarding career perspective and to current

Table 5 – Factors affecting the permanence in Portugal

Factors leading to the permanence in Portugal	n	Median	Percentile 25 - 75
Love for Portugal	482	8.0	7.0 - 10.0
Family commitments in Portugal	480	8.0	5.0 - 10.0
Love for the medical profession in Portugal	483	8.0	6.0 - 9.0
Love for the working environment	483	7.0	5.0 - 9.0
Not affecting healthcare services	478	4.0	0.0 - 7.0
Conditions offered in the medical profession	483	3.0	1.0 - 5.0
Too old to emigrate	482	2.0	0.0 - 8.0
Difficulty to obtain a job abroad	477	1.0	0.0 - 5.0
Not speaking another language	482	0.0	0.0 - 4.0

Source: Survey among physicians on the impact of the financial crisis in Portugal (2015)

wage. Love for living in Portugal, for the medical profession in Portugal and family commitments were the main reasons to remain in the country.

An increase in demand for healthcare services by the population has been found, according with the opinion of respondents, in line with the evidence described in a study on hospital admission in Portugal.[22] These perceptions also seemed in line with studies in this area[23] and with what has been recommended by healthcare authorities, even though they seemed in contrast with what has been described in other studies.[6,24] This increased usage may be explained by an increase in some disorders – mainly mental – related to unemployment, that usually occur with any financial crisis.[5] The growth in large hospital groups and in clinics to the detriment of private practices has been found in the private sector.[4] If confirmed, this change may have had an important impact on medical activity in terms of independence and autonomy, as well as in terms of the access to a job in the private sector. Furthermore, data seemed showing a contradiction regarding the private sector, with physicians describing an increase in the number of patients in the private sector and, at the same time, less working hours in 2015, probably a sign that not all physicians working at the public sector have access to new job opportunities.[20]

Respondents with some medical career grades more than others have described having been more affected by the crisis. General practitioners working in B-model USF, with superior career grades and on exclusive contract described as having been less affected, probably due to the financial incentives introduced by the primary healthcare reform,[20] when compared to hospital specialists who seemed to have been more affected. Physicians have described an increase in the effective working hours in the public sector due to wage losses and this has been more significant in physicians working in primary care.

Despite the austerity measures, no significant signs of change were found in physicians that remained in the public sector, in terms of an exodus to the private sector and abroad. This may be explained by the lack of opportunities offered by the private sector or by the profile of our group of respondents – physicians who have decided to stay in the public sector. In addition, the hypothesis that the Portuguese physicians preferred adapting to the new conditions, due to the high costs related to the change of job can be considered, due to their love for the profession and due to the possibility of also working in the private sector. The impact of this resistance to change should be considered by the traditional economic models that hypothesize that physicians would automatically move to jobs that would give them higher rate of return.[25] As no evidence has been found regarding emigration to better-paid jobs, the definition of a threshold analysis for the design of human resource policies would be crucial for better understanding to what extent would physicians remain in their job despite adverse financial conditions as also when would they begin to leave the sector.

Threshold conditions should be considered by policies aimed at keeping medical staff in the public sector (using a marginal analysis) from which professionals start to abandon the system. Despite physician's dissatisfaction regarding new conditions brought by the crisis, a critical situation has probably not yet been met, due to the fact that the initial financial conditions of medical profession were still better when compared to other professions. In addition, status of medical profession in Portugal, the love for the profession and the high social and economic status when compared to other classes of the Portuguese society are factors that also went against a trend towards emigration. In fact, emigration of healthcare professionals in Portugal does not seem to have the same expression as what has been described in other European countries where physicians move to regions with better-paid jobs.[26,27]

Some limitations to this study should be mentioned. The first one relates to the difficult design of valid and reliable questionnaires and with the inability to generalise the results nationwide, as these only reflect the situation from three institutions. The second limitation relates to the fact that this sample only included physicians working in the public sector and, for that reason, only physicians who did not leave the public sector were inquired, which may have biased the results regarding the intention to leave to the private sector or to migrate. The third limitation relates to the fact that data on income and allocation of weekly working time have been described by respondents and were not directly assessed, with a possible memory bias. In addition, this study only showed the descriptive analysis of data collected for the study and the comprehensive analysis has been presented in other publications.[20,28] However, despite these limitations, a picture of one of the largest Portuguese hospitals and of two ACES responding to the needs of a large population in Greater Lisbon has been obtained.

CONCLUSION

Different European countries have faced a financial crisis over the past few years with potential impact on social sectors such as healthcare. However, there is scarce scientific evidence on the impact of the change of conditions on Portuguese physicians working at the public sector. A survey has been carried out in three healthcare institutions including primary and hospital healthcare in Greater Lisbon, aimed at obtaining a perspective on the impact of the crisis on physicians and the market of medical services in this region. The results have shown that this crisis produced significant changes in the market of medical services and in physician's behaviour. According with respondents, an increased number of users and a reduction in medical services supply at the public sector has been found *vs.* an increase in the private sector. Some public policies adopted throughout the crisis were considered as harmful to the public sector. Respondents have underlined that health

insurance and some private economic agents have changed the profile of healthcare services in Portugal. However, the determinants described as more relevant over this period of crisis mainly related to supply (of the organization of healthcare services) rather than to demand.

Public-sector respondents described their low satisfaction, unlike what happened with private-sector respondents. Changes induced by the crisis were mainly reflected in wage losses, which have not been associated with a reduction in the number of working hours in the public sector, nor to an increase in the private sector.

We have reached the conclusion that the natural resistance to change, the conditions of the medical profession still considered as favourable and the love for the country and for medical practice in Portugal have contributed to the fact that physicians have adapted to new conditions, preventing from the rupture with the Portuguese *Serviço Nacional de Saúde*. A better understanding of the terms of this adaptation is still necessary, regarding the distribution of working hours between public and private sector, as well as the different strategies adopted by hospital and primary-care physicians, as a contribution to policies aimed at a compensation of the effects of the crisis on the system and these valuable healthcare human resources.

ACKNOWLEDGMENTS

The authors wish to acknowledge the administrations of the ACES and CHLC, to the interviewers and particularly to all the physicians that have participated in this study.

HUMAN AND ANIMAL PROTECTION

The study was approved by the Ethics Committee of the *Administração Regional de Saúde de Lisboa e Vale do Tejo* and of the *IHMT*, as well as by the administrations of the three institutions where the survey was carried out. An informed consent has been obtained from all respondents to the survey. The authors declare that the followed procedures were according to regulations established by the Ethics and Clinical Research Committee and according to the Helsinki Declaration of the World Medical Association.

DATA CONFIDENTIALITY

The authors declare that they have followed the protocols of their work centre on the publication of patient data.

CONFLICTS OF INTEREST

The authors declare that there were no conflicts of interest in writing this manuscript.

FINANCIAL SUPPORT

The authors declare that the study has been carried out with the contribution of a Collaborative Research Award (*Prémio de Investigação Colaborativa*) of Santander Totta/ Universidade NOVA de Lisboa.

REFERENCES

1. Augusto GF. Cuts in Portugal's NHS could compromise care. Lancet. 2012;379:400.
2. Karanikolos M, Mladovsky P, Cylus J, Thomson S, Basu S, Stuckler D, et al. Financial crisis, austerity, and health in Europe. Lancet. 2013;381:1323–31.
3. Pita-Barros P, Lourenço A, Moura A, Correia F, Silvério F, Gomes JP, et al. Políticas públicas em saúde: 2011-2014: avaliação do impacto. Lisboa: Secretaria-Geral do Ministério da Saúde; 2015.
4. Correia T, Carapinheiro G, Silva J, Vieira J. O sistema de saúde português no tempo da troika: a experiência dos médicos. Lisboa: ISCTE-IUL/Ordem dos Médicos; 2015.
5. Stuckler D, Basu S, Suhrcke M, Coutts A, McKee M. The public health effect of economic crises and alternative policy responses in Europe: an empirical analysis. Lancet. 2009;374:315–23.
6. Pita-Barros P, Lourenço A, Moura A, Correia F, Silvério F, Gomes JP, et al. Avaliação do impacto de políticas adoptadas no âmbito do Programa do XIX Governo Constitucional em relação ao sector da Saúde [Internet]. Nova Healthcare Inititative; 2015. [consultado 2016 ago 07]. Disponível em: hhttp://www.unl.pt/data/noticias/2015/estudo_impacto_saude/sum%C3%A1rio_estudo_politicaspublicassaude.pdf.
7. Correia T, Dussault G, Pontes C. The impact of the financial crisis on human resources for health policies in three southern-Europe countries. Health Policy. 2015;119:1600–5.
8. Porter ME, Teisberg EO. How physicians can change the future of health care. JAMA. 2007;297:1103.
9. Augusto GF. Cuts in Portugal's NHS could compromise care. Lancet. 2012;379:400.
10. Sakelarides C, Catelo-Branco L, Barbosa P, Azevedo H. The impact of the financial crisis on the health system and health in Portugal [Internet]. Copenhagen: WHO Regional office for Europe; 2014. (European Observatory on Health Systems and Policies). [consultado 2015 jan 10]. Disponível em: http://www.euro.who.int/__data/assets/pdf_file/0006/266388/The-impact-of-the-financial-crisis-on-the-health-system-and-health-in-Portugal.pdf?ua=1.
11. Vujicic M, Zurn P, Diallo K, Adams O, Dal Poz MR. The role of wages in the migration of health care professionals from developing countries. Hum Resour Health. 2004;2:3.
12. Correia I, Veiga P. Geographic distribution of physicians in Portugal. Eur J Health Econ HEPAC Health Econ Prev Care. 2010;11:383–93.
13. Russo G, Ferrinho P, de Sousa B, Conceição C. What influences national and foreign physicians' geographic distribution? An analysis of medical doctors' residence location in Portugal. Hum Resour Health. 2012;10:12.
14. McRae IS, Paolucci F. The global financial crisis and Australian general practice. Aust Health Rev Publ Aust Hosp Assoc. 2011;35:32–5.
15. Paxson CH, Sicherman N. The dynamics of dual-job holding and job mobility [Internet]. National Bureau of Economic Research; 1994 Dec. Report No.: 4968. [consultado 2016 mar 17]. Disponível em: http://www.nber.org/papers/w4968.pdf.
16. Health Systems in Transition: Portugal [Internet]. [consultado a 2016 mar 26]. Disponível em: http://www.euro.who.int/__data/assets/pdf_file/0019/150463/e95712.pdf
17. The-impact-of-the-financial-crisis-on-the-health-system-and-health-in-Portugal.pdf [Internet]. [consultado 2016 mar 17]. Disponível em: http://www.apah.pt/media/publicacoes_tecnicas_sector_saude_2/The-impact-of-the-financial-crisis-on-the-health-system-and-health-in-Portugal.pdf
18. Pita-Barros P. Health policy reform in tough times: the case of Portugal. Health Policy Amst Neth. 2012;106:17–22.
19. McGuire TG, Pauly MV. Physician response to fee changes with multiple payers. J Health Econ. 1991;10:385–410.
20. Russo G, Rego I, Perelman J, Pita-Barros P. A tale of loss of privilege, resilience and change: the impact of the economic crisis on physicians and medical services in Portugal. Health Policy. 2016;120:1079-86.

21. Karanikolos M, Mladovsky P, Cylus J, Thomson S, Basu S, Stuckler D, et al. Financial crisis, austerity, and health in Europe. Lancet. 2013;381:1323–31.
22. Perelman J, Felix S, Santana R. The great recession in Portugal: impact on hospital care use. Health Policy Amst Neth. 2015;119:307–15.
23. Correia T, Carapinheiro G, Silva J, Vieira J. O sistema de saúde português no tempo da troika: a experiência dos médicos [Internet]. Lisboa (Portugal): ISCTE-IUl e Ordem dos Medicos; 2015. [consultado 2016 mar 26]. Disponível em: http://www.ordemdosmedicos.pt/?lop=conteudo&op=ed3d2c21991e3bef5e069713af9fa6ca&id=d01eeca8b24321cd2fe89dd85b9beb51.
24. Antunes JA. Crise económica, saúde e doença. Psicol Saúde Amp Doenças. 2015;16:267–77.
25. McGuire TG, Pauly MV. Physician response to fee changes with multiple payers. J Health Econ. 1991;10:385–410.
26. Ifanti AA, Argyriou AA, Kalofonou FH, Kalofonos HP. Physicians' brain drain in Greece: A perspective on the reasons why and how to address it. Health Policy. 2014;117:210–5.
27. Leone C, Bruyneel L, Anderson JE, Murrells T, Dussault G, Henriques de Jesus E, et al. Work environment issues and intention-to-leave in Portuguese nurses: A cross-sectional study. Health Policy Amst Neth. 2015;119:1584–92.
28. Russo G, Pires CA, Pita-Barros P, Perelman J, Gonçalves L. Exploring public sector physicians' resilience, reactions and coping strategies in times of economic crisis; findings from a survey in Portugal's capital city area. BMC Health Serv Res. 2017;17:207.