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A nationwide survey of training satisfaction and employment prospects among Greek gastroenterology fellows during the economic recession

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Abstract

Background This study assessed Greek gastroenterology fellows' satisfaction regarding training, working conditions, quality of life and future employment perspectives.

Methods Greek gastroenterology fellows completed an anonymous multiple-choice electronic questionnaire designed to rate their satisfaction using a five-step Likert scale in two major domains: 1) fellowship program (training, working conditions, research activity, acquisition of endoscopic competencies, quality of life); and 2) professional expectations. Pareto analysis was used to determine the factors that had the most negative effect on fellows' satisfaction.

Results In 2016, over a two-month period, 121 invitations were distributed and 70 (58%) fellows responded. Overall, responders reported a low level of satisfaction with their training programs: the mean total satisfaction score was 42.94±11.55 (range 15-75). Pareto analysis revealed that the main factors negatively affecting satisfaction were financial remuneration, routine or menial work, and uncertainty about professional future (98.6%, 94.3% and 92.9% unfavorable answers, respectively). Of the total participants, 53% felt tired or very tired and 44.3% of them reported high levels of stress following a normal working day. Although the majority of the fellows did not regret choosing gastroenterology fellowship training, 34.4% of them would choose a different training environment, if possible.

Conclusion Our study revealed that Greek gastroenterology fellows are dissatisfied with their training programs and with their professional perspectives. It also detected the issues that contribute most to this unfavorable outcome.

Keywords Fellows, satisfaction, gastroenterology

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Introduction

During the last decades, healthcare systems worldwide have focused on providing qualitative and efficient educational programs to physicians. Fellows' satisfaction has been recognized as a significant determinant of medical education quality. In addition, healthcare professionals' perceptions regarding the acquisition of training and skills throughout the fellowship serve as potential indicators of the quality of training institutions [1].

In Greece, gastroenterology training consists of two initial years of internal medicine residency, outside the scope of this survey, followed by four years of gastroenterology fellowship. Training is provided only by accredited clinics, in hospitals of the Greek National Health System (NHS). Nowadays, more than 100 young physicians wait for up to 5 years to start their training in gastroenterology, highlighting the fellowship's popularity.

In this era of financial crisis [2], strict cost-saving measures have been imposed in order to achieve functional cost reduction [3]. These have led to a significant decline in Greek fellows' financial allowances as well as hospitals' resources, i.e., medical equipment and consumables, further degrading the quality of training [4]. So far, only a single study has been published on future gastroenterologists' satisfaction with their training [5]. In view of this, we conducted a nationwide survey study to measure Greek gastroenterology fellows' satisfaction regarding fellowship aspects and their perspectives as specialists.

Materials and methods

Study population

Using the electronic records of the Hellenic Society of Gastroenterology (HSG), we contacted gastroenterology fellows nationwide during 2016.

Survey instrument development and administration

Our survey instrument was designed by a team of researchers, physicians and fellows, based on the existing literature [5-9]. The instrument was then developed using the commercially available version of the web-based survey program "Google Forms". The survey questionnaire was reviewed by a number of experienced educators in gastroenterology and the Governing Board of the HSG approved its final version. In order to evaluate comprehension, content, and feasibility, pilot testing of the survey was carried out among the authors and their collaborators at the Hepatogastroenterology Unit, 2nd Department of Internal Medicine-Propaedeutic, Research Institute and Diabetes Center, Medical School, National and Kapodistrian University.

Gastroenterology fellows throughout Greece were invited to participate in the study via individualized e-mail invitations, accompanied by an explanatory letter from the HSG. Each fellow received a specific survey link, allowing them to consent to participate or to decline. The online questionnaire included 42 items and required approximately 15 min to complete. Duplicate participation was prevented by the electronic survey program, as only a single answer per user was allowed. The survey period was February to March 2016 and two reminder e-mails, the first 15 and the second 30 days after the initial invitation, were sent to encourage participation.

Questionnaire

Our questionnaire comprised 42 questions divided into four separate sections. The first section (questions Q1-Q10), included questions regarding fellows' demographics (i.e., age, sex, marital status, parental status, year of fellowship, number of gastroenterology trainees in each department, working hours, shifts per month). The second section of the questionnaire consisted of 15 questions (Q11-Q25) designed to evaluate fellows' level of satisfaction with their training programs and their existing professional perspectives. Items were structured as statements, to which participants' satisfaction was rated using a five-step Likert response scale, with 1 indicating poor, 2 fair, 3 neutral, 4 good, and 5 the highest level of satisfaction. Scores 1, 2 and 3 were arbitrarily considered unfavorable, while 4 and 5 were considered as favorable. These 15 scores were then summed to provide a total satisfaction score for each fellow, on a scale ranging from 15 to 75. The third and the fourth sections (Q26-Q32 and Q33-Q42, respectively) were used to assess the psychological distress of the junior doctors, the ways they handled it and other issues (i.e. change in professional perspectives, views about fellowship choice, etc.). The complete study questionnaire is available in the Supplemental Table.

Study endpoints

Primary endpoint

- To assess gastroenterology fellows' satisfaction regarding their training, working conditions and future professional perspectives.

Secondary endpoints

- To identify the factors contributing most strongly, either favorably or unfavorably, to fellows' satisfaction.
- To assess gastroenterology fellows' psychological distress and the ways they manage it.

Statistical analysis

Data analysis was performed using the statistical software Statistical Packages for the Social Sciences (SPSS) version 22.0 (Chicago, Illinois, USA). Quantitative data are expressed as mean±SD and categorical data as number (%). We used Student's *t*-test to analyze continuous quantitative variables and non-parametrical tests to analyze categorical and non-continuous quantitative variables. For the 15-item satisfaction questionnaire, an overall score was calculated by summing the scores for individual items. Significance for all statistical methods was defined as $P<0.05$.

We used Pareto analysis, a statistical method used mainly for business statistics, to identify the issues that contributed the most to fellows' dissatisfaction. Also known as the 80/20 rule (20% of the causes are responsible for 80% of the burden), Pareto analysis assists in the recognition of the main issues accounting for severe deficiencies. This particular type of analysis has been used extensively to assess issues requiring improvement in endoscopy services [10]. The cumulative cutoff for Pareto analysis was set at 80%.

Ethical considerations

The Governing Board of the HSG approved the study. Participation in the survey was voluntary. Completed questionnaires were returned anonymously to the investigators and all responses were automatically recorded in an electronic database. To ensure the confidentiality of all participants, survey completion did not require the registration of information about training programs, specific local demographic characteristics, or other potential unique identifiers. All participants were informed about the confidentiality of the data collected as well as the voluntary nature of the survey.

Results

Participants' characteristics

One hundred twenty-one electronic invitations were sent and 70 questionnaires were filled and returned, giving a response rate of 58% (Fig. 1).

Among the participants, 71.4% were men, 52.8% were ≥36 years old, and almost half of them (34 or 48.6%) were in the two first years of their fellowship. The majority (48 or 70.6%) worked in a department with more than five fellows in gastroenterology. Sixty-three (90%) participants had more than five night shifts per month and 68 (97%) worked more than 55 h per week. The demographic and working status characteristics of the participants are shown in Table 1.

Study endpoints

Primary endpoint

The satisfaction scores from the 15-item (Q11-Q25) questionnaire are presented in Table 2. Participants' mean total satisfaction score was 42.94±11.55 (median: 45); 75% of the participants had a score less than 51 (75th percentile).

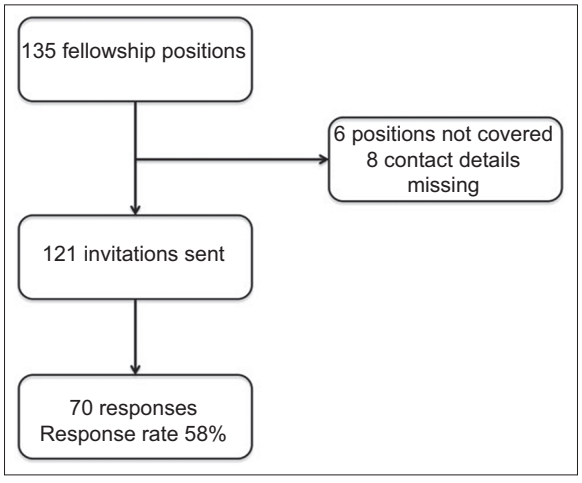

Figure 1 Study flowchart

Secondary endpoints

Table 2 also summarizes the percentages of favorable answers and the mean score (SD) for each of the 15-item questionnaire items. Questions examining fellows' relationships with their colleagues (Q13) and the autonomy provided to them by their seniors (Q21) received the highest percentage of favorable responses (67.1% and 62.9%, respectively). Furthermore, participants were satisfied with the relationships with their supervisors (Q14; 54.3% favorable answers), but more participants were satisfied with their training in the gastroenterology inpatients (44.3%) compared to the outpatients (28.6%) department.

The mean fellow satisfaction score was not influenced by the baseline participants' characteristics (Table 3). The fellowship year was the only exception. Fellows in the fourth year of their training reported a lower total satisfaction score (34.06±11.3) in comparison with the rest of their colleagues (P=0.003).

Table 1 Participants' demographics, n (%)

Sex		No. of fellows	
Male	50 (71.4)	≤4	20 (29.4)
Female	20 (28.6)	5-6	38 (55.9)
		≥7	10 (14.7)
Age (years)		Night shifts per month	
≤30	2 (2.9)	≤4	7 (10.0)
31-35	31 (44.3)	5-6	34 (48.6)
36-40	32 (45.7)	≥7	29 (41.4)
≥41	5 (7.1)		
Training year		Working hours per week	
1st	13 (18.6)	≤55	2 (3.0)
2nd	21 (30.0)	56-70	30 (44.8)
3rd	12 (17.1)	≥71	35 (52.2)
4th	24 (34.3)		
Marital status		Level of education	
Married	36 (51.4)	MD	41 (59.4)
Single	34 (48.6)	MSc	7 (10.2)
		PhD candidate	17 (24.6)
		PhD completed	4 (5.8)
Parent status		Working experience abroad	
With children	23 (32.9)	Yes	20 (28.6)
Without children	47 (67.1)	No	50 (71.4)

Table 2 Rate of favorable answers and mean score (±SD) of the 15-item satisfaction section questions

No	Question	% Favorable answers	Score
Q11	Are you satisfied with your fellowship training overall?	34.3	2.9±1.1
Q12	Are you satisfied with your working environment?	40.0	3.0±1.2
Q13	Are you satisfied with your relationship with your colleagues?	67.1	3.7±0.9
Q14	Are you satisfied with your relationship with your seniors/director?	54.3	3.4±1.1
Q15	Are you satisfied with the feedback received from your seniors/director?	34.2	3.0±1.1
Q16	Are you satisfied with your training in endoscopy?	51.4	3.3±1.3
Q17	Are you satisfied with your training in gastroenterology inpatients?	44.3	3.2±1.2
Q18	Are you satisfied with your training in gastroenterology outpatients?	28.6	2.8±1.1
Q19	Are you satisfied with your training in hepatology outpatients?	31.4	2.8±12
Q20	Are you satisfied with your participation in research projects?	24.3	2.5±1.3
Q21	Are you satisfied with the autonomy provided by your seniors/director?	62.9	3.6±1.4
Q22	Are you satisfied with your attendances at scientific conferences?	40.0	3.0±1.4
Q23	Are you satisfied with the amount of routine or menial work needed to be done?	5.7	1.8±0.8
Q24	Are you satisfied with your professional future?	7.1	2.2±0.9
Q25	Are you satisfied with your income?	1.4	1.8±0.8

Table 3 Total satisfaction score (Mean±SD) according to fellows' baseline characteristics

Demographic data			Educational factors			Working conditions		
Characteristic	Satisfaction score	P	Characteristic	Satisfaction score	P	Characteristic	Satisfaction score	P
Sex			Level of education			No fellows intraining institution		
Male	42.88±12.7	0.969	MD	43.54±12.75	0.651	≤4	38.40±10.6	0.125
Female	43.0±8.3		MSc	48.57±8.5		5-6	44.16±12.3	
Age			PhD (c)	41.50±15.0		≥7	46.00±9.34	
≤30	52.50±6.4	0.413	PhD	40.41±14.4		Night shifts per month		
31-35	43.68±10.7		Training year			≤4	39.43±10.7	0.360
36-40	41.0±12.9		1st	44.54±8.3	0.003	5-6	41.74±12.9	
≥41	46.60±7.0		2nd	46.57±9.9		≥7	45.14±9.82	
Marital status			3rd	47.25±12.3		Working hours per week		
Married	45.33±11.2	0.071	4th	34.06±11.3		≤55	49.00±8.48	0.644
Single	40.35±11.5		Experience abroad		0.144	56-70	41.57±11.6	
Parents			Yes	39.70±11.6				
Yes	43.30±13.0	0.845	No	44.22±11.5				
No	42.72±10.9							

Fig. 2 illustrates the Pareto analysis used to detect factors that unfavorably affected fellows' satisfaction. Eleven items were responsible for 80% of the unfavorable responses. Satisfaction regarding income, routine or menial work, and professional future had the highest percentages of unfavorable responses, followed by satisfaction regarding participation in research projects, training in clinics, feedback received from supervisors, overall training program, working environment, participation in scientific conferences and treating inpatients. Despite the fact that 24/70 or 34.4% of the participants would choose a different training environment, only 5 (7.1%) of the participants regretted choosing a gastroenterology fellowship.

More than half of the participants (37/70 or 52.8%) stated that they felt tired or very tired after a normal day at work.

Similarly, 31 (44.3%) of them reported high levels of stress following a normal working day. Fig. 3 illustrates that smoking and drinking were used occasionally or more frequently by 26 (37.2%) and 14 (20%) of the participants, respectively, in order to handle their stress and tiredness. Six (8.6%) and one (1.4%) fellows reported occasional and frequent use of illegal drugs, respectively. On the other hand, less than one fourth of them engaged in physical exercise three or more times per week.

More than one third of the participants believed that their professional expectations changed during their training. Fig. 4 presents the statistically significant differences between fellows' ideal and actual perspectives. Ideally, more fellows

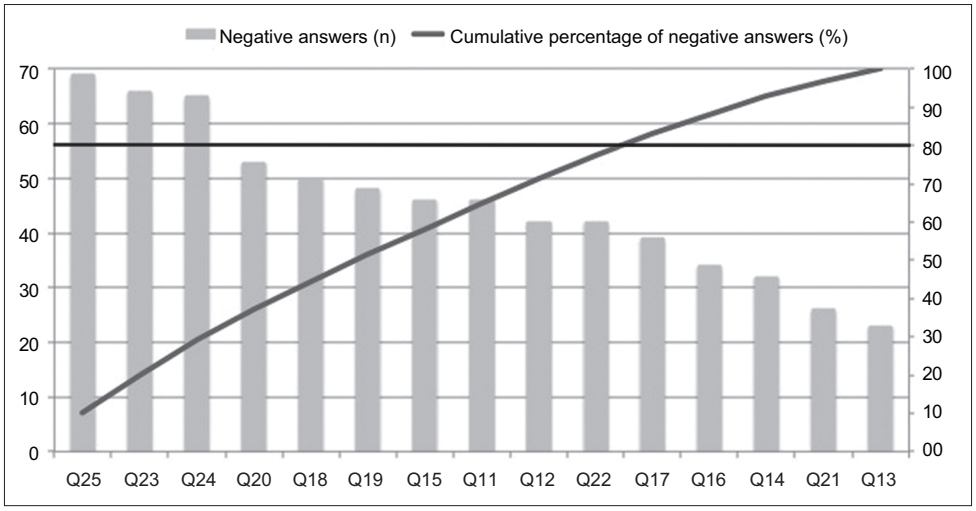

Figure 2 Pareto analysis showing the 11 factors contributing to 80% of fellows' unfavorable satisfaction answers. Salary, routine or menial work, and professional uncertainty rank first, second and third, respectively

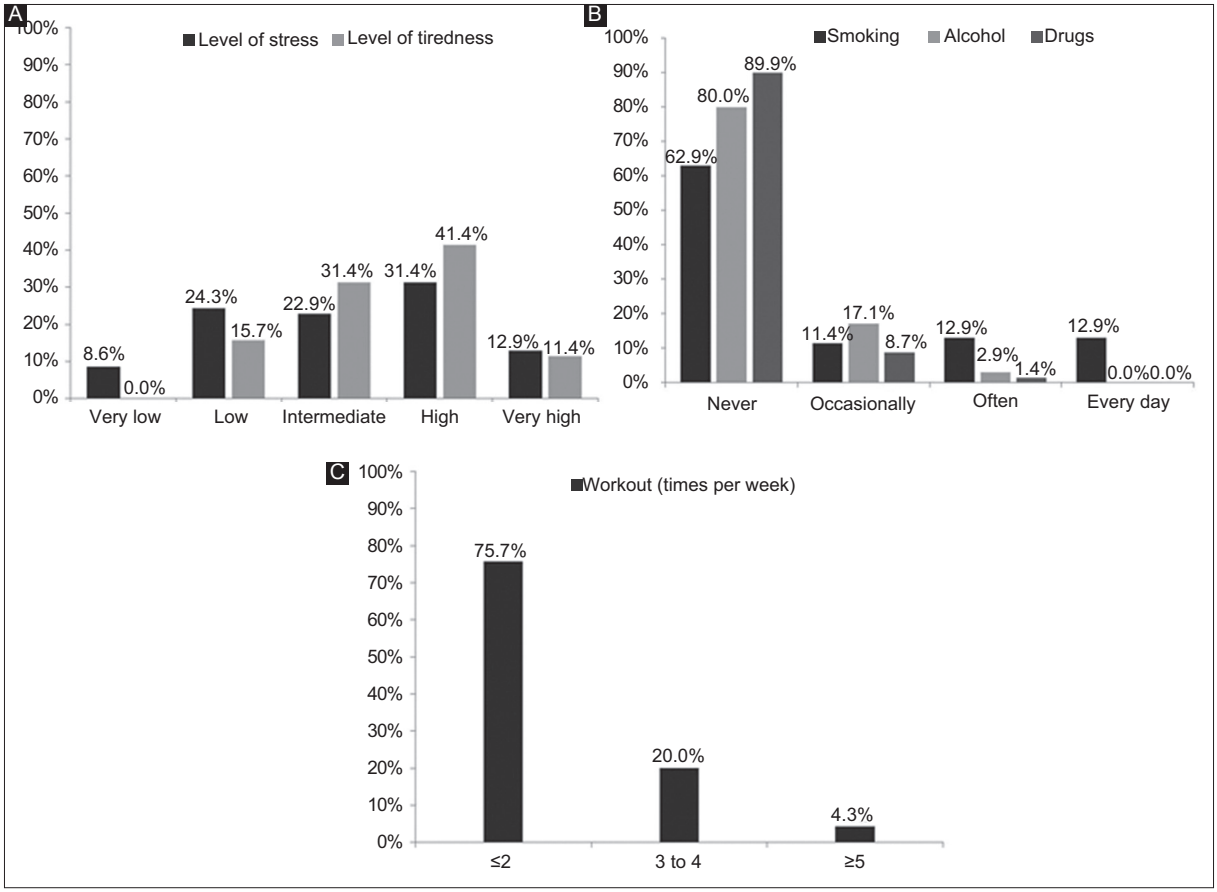

Figure 3 Level of fellows' stress and tiredness (A) and ways (B and C) they handle them

would like to become Greek NHS consultants (25% vs. 11.5%) and to pursue an academic career (5.9% vs. 1.4%). In "real life", and in contrast with their ideal expectations, future Greece gastroenterology specialists believe that they will work either in the private sector (51.4% vs. 44.1%) or abroad (12.9% vs. 5.9%).

Discussion

To date, only a single study worldwide has investigated gastroenterology fellows' satisfaction regarding training [5]. In Greece, only one study so far has addressed this issue in a limited proportion of medical fellows of various specialties, and merely as a secondary outcome [11]. The current survey represents a nationwide effort to comprehensively evaluate the satisfaction level among Greek gastroenterology fellows, regarding their training and professional perspectives.

Greek gastroenterology fellows conveyed a low level of overall satisfaction with their training programs. Data from other European countries are lacking, making a comparison of satisfaction rates between Greece and other European countries impossible, but considerable differences can be noted when our data are compared to the satisfaction rates reported in a similar survey undertaken in the US [5]. In that study, graduating gastroenterology fellows were satisfied with their training (mean satisfaction score on the study's instrument was 3.45±0.7, range 1.7-4.9). However, the educational characteristics of the participants i.e. US and non-US medical school graduates, fellows on a research or clinical track, were not uniform, while the data collected referred only to fellows' experiences in the US; therefore, the applicability of the results to other countries' training settings is questionable.

A number of reasons associated with the Greek healthcare system could account for our findings. The NHS is the only provider of fellowship training; thus, the quality of training depends highly on its overall economic robustness. As a consequence of the ongoing economic crisis, the NHS is confronting severe economic hardship [4]. Austerity policy has undermined the function of hospitals because of understaffing, deficits, medical equipment shortage and impaired employees' salaries. Furthermore, the use of public health sector structures has increased by 30% from 2012 to 2014, despite a severe decline in hospital budgets (by 40%) during the same period [4]. The increased workload contributes not only to physical and emotional exhaustion, but also to fellows' perception of inadequate training [12].

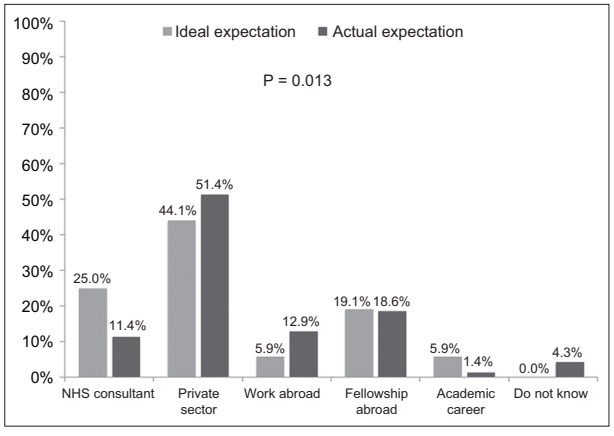

Figure 4 Fellows' ideal and actual professional expectations

In addition, no formal structured training program for any specialty fellowship has yet been introduced in Greece [13]. Official systematic documentation (through the implementation of log-books) of clinical and endoscopic competencies acquired during fellowship, in relation to international standards, is unavailable [14,15]. In contrast, the majority of European countries' fellowship training authorities have employed electronic training portfolios [16]. Moreover, significant heterogeneity among the quality of the training programs can be noted, since each hospital has unique characteristics (size, burden of care, hospital level, etc.) that influence its teaching aspects [12].

It is of great importance to identify the factors associated with a higher overall level of fellows' satisfaction. Supervisors' involvement plays a pivotal role in trainees' efficient education, future professional success, research activity and patient safety [17]. Accordingly, in our survey, the establishment of harmonious relationships with faculty supervisors has been acknowledged as an important factor when rating satisfaction with quality of education. More participants provided favorable answers regarding their training with gastroenterology inpatients compared to outpatients. Potential reasons for this observation could include the increased everyday workload as well as the lack of a structured outpatient clinic department in every hospital.

Interestingly, a higher fellowship year correlated with lower overall satisfaction. This finding could be attributed to the fact that the training eventually failed to meet a fellow's initial expectations. Moreover, situational, personal and professional stressors, such as the prospect of a final graduation examination and professional uncertainty, trouble senior fellows. In contrast, first-year fellows seem more motivated, since they are lacking experience and are full of expectations [18].

Pareto analysis identified salary, concerns about professional future, and routine or menial tasks as the most significant contributors to the total percentage of unfavorable answers. Cut salaries are an inevitable reality in the current economic climate [19]. Greek gastroenterology fellows rank last among their European colleagues, in terms of both salary and the ratio between average salary and average total workload (€2.02/h, while the average is €5.97/h) [20].

The common belief among our responders was that achieving a gastroenterology career in Greece, in either public or private practice, is difficult nowadays. Notably, Greece has the highest ratio of doctors per capita worldwide (6.1 per 1000 population: twice the international average of 3.1, according to the Organization for Economic Cooperation and Development) [21]. For gastroenterologists, the ratio between the total number of practitioners and the country's population is considerably greater than that of other European

Union countries [16]. The future of the gastroenterology workforce in Greece is related to the country's economy status (among other factors), since the financial policies of the NHS and the private sector will determine the need for specialist posts [4]. Therefore, it comes as no surprise that perceived training deficiencies, accompanied by uncertainty about future employment opportunities, converge to a decreased overall level of satisfaction.

Greek gastroenterology fellows work on average five night shifts per month and in total more than 55 h per week. This exceeds the European average [20]; it also does not comply with the European Work Time Directive [22]. Aside from that, fellows must also deal with a great deal of menial work that encroaches on their training time. The total absence of computerized administrative procedures might explain these findings. Despite the shortcomings previously discussed, the majority of participating fellows do not have second thoughts about their selection of the gastroenterology specialty, but many of them would choose a different institution for their training. Since the time until starting a gastroenterology fellowship program has lengthened substantially, because of the burgeoning number of candidates [23], many medical graduates choose to lower their standards regarding the institution of training to avoid delay in starting their specialty training.

As asserted by a sizable proportion of responders, physical and emotional exhaustion is present in many cases, while an ideal work-life balance is difficult to achieve. Although we did not evaluate our participants for "burnout", it is likely that its prevalence is similar to that reported among Greek fellows of other specialties in a previous publication [11]. It is also remarkable that many fellows have difficulty coping with stress and adopt alarming practices; smoking, alcohol consumption and illegal drug use were reported.

Our study participants were willing to work for the public healthcare system. Perhaps their former experience in the hospital setting, along with a lack of knowledge about practicing in the private sector, explains this finding, even though these job positions in Greece have plateaued and are underpaid [19,24]. Nevertheless, this does not also apply in "real-life" conditions, where entering private practice seems to be the unique beneficial alternative, offering potentially greater financial rewards and independence. Job market saturation in both public and private practice, deterioration of work conditions, and poor domestic economic prospects are the main reasons behind the trend for fellows to emigrate when they complete their training. However, the emigration of the most efficient doctors, along with the limited public investment, forebodes a worrying future [19]. The "brain drain" phenomenon is not only a problem for Greece [25], since reports have emerged from other countries that are also affected by the economic recession [26].

Our study has two core strengths. First, it is the first nationwide Greek survey of gastroenterology fellows' satisfaction regarding training and future employment opportunities. Second, the homogeneity regarding the number of physicians in the different years of fellowship is regarded a study asset. We achieved a response rate of 58%, which is comparable with the 54% average rate reported among physician-specific surveys [27] and is considered adequate to allow firm conclusions to be drawn [28].

A number of limitations to our observations could be cited. The major study caveat is related to the use of a non-validated instrument. In the absence of an internationally validated satisfaction scale for medical specialties, we designed our questionnaire based on the existing literature. As with all cross-sectional studies, a causal relationship with the factors studied cannot be established. Although strict confidentiality measures were applied, the existence of response bias cannot be ruled out, since participants may have been fearful of reprisal for voicing discordant attitudes. Another limitation is that responses have a "subjective" aspect, prone to personal, experiential and recall bias. The lack of previous data regarding gastroenterology fellows' satisfaction allows neither firm conclusions nor the establishment of relations with possible causes of dissatisfaction; this also represents a study drawback. Detailed information concerning the fellows' workplace was not a prerequisite for survey participation, in an effort to preserve fellows' anonymity and encourage participation. However, this prevented any investigation of potential differences in satisfaction between academic and non-academic training environments and is also a study limitation. Finally, assessment of satisfaction may alter over time when the latter stages of training are completed.

To conclude, our national survey among Greek gastroenterology fellows provides evidence that the overall level of satisfaction with training and future employment prospects is low. The main factors negatively affecting satisfaction scores are low income, the burden of menial tasks, and the questionable professional future. Apart from intensively seeking measures to improve the highlighted deficits, future surveys should be conducted to assess gastroenterology fellows' satisfaction on a regular basis.

Summary Box

What is already known:

- Fellows' satisfaction with provided training is recognized as a significant determinant of medical education quality

What the new findings are:

- Greek gastroenterology fellows are dissatisfied with their training and future employment prospects
- Low income, menial tasks, and challenging professional future were identified as the issues that contributed the most to fellows' dissatisfaction

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