

Female Gastroenterologists Report Mastering Endoscopic Skills Later and Are Less Likely to Have Children. A Regional Survey

Ivana Pantic¹, Ioannis S. Papanikolaou², Sofija Lugonja³, Milica Stojkovic Lalosevic^{1,4}, Aleksandra Pavlovic Markovic^{1,4}, Emilija Nikolovska Trpchevska⁵, Meri Trajkovska⁵, Brigita Smolovic⁶, Lidia Ciobanu⁷, Tamara Milovanovic^{1,4}

1) University Clinical Center of Serbia, Clinic for Gastroenterology and Hepatology, Belgrade, Serbia; 2) Hepatogastroenterology Unit, Second Department of Internal Medicine - Propaedeutic, Medical School, National and Kapodistrian University of Athens, Attikon University General Hospital, Athens, Greece; 3) Djordje Joanovic General Hospital Zrenjanin, Serbia; 4) University of Belgrade, Faculty of Medicine, Belgrade, Serbia; 5) University Clinic of Gastroenterohepatology, Faculty of Medicine, Ss. Cyril and Methodius University, Skopje, Republic of North Macedonia; 6) Departement of Gastroenterohepatology, Clinical Center of Montenegro, Faculty of Medicine, University of Montenegro, Podgorica, Montenegro; 7) Iuliu Hatieganu University of Medicine and Pharmacy, Cluj-Napoca; Regional Institute of Gastroenterology and Hepatology, Cluj-Napoca, Romania

Address for correspondence:

Tamara Milovanovic, MD, PhD
University Clinical Center of Serbia, Clinic of Gastroenterology and Hepatology, University of Belgrade, Faculty of Medicine, Belgrade, Serbia
tamara.alempijevic@med.bg.ac.rs;

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ABSTRACT

Background & Aims: Despite the reduction of the gender gap in medicine, uneven gender distribution has remained in several medical fields, including gastroenterology. We aimed to evaluate differences in clinical and academic training between male and female gastroenterologists.

Methods: We distributed a web-based survey to physicians who have completed their training and are currently working in the field of gastroenterology in five Balkan countries: Serbia, Republic of North Macedonia, Montenegro, Greece and Romania.

Results: The questionnaire was sent to 1220 physicians. A total of 229 questionnaires were filled out and 214 were included in the analysis. The overall response rate was 18.8%. Almost half of respondents were women (n=97, 45.3%). The proportion of male physicians having children was higher compared to females, which was of statistical significance (88.0% vs. 64.9%, p<0.05). Women have in general reported beginning endoscopic training as well as mastering endoscopic procedures later in clinical training, when compared to males. On average, males reported higher median time in performing endoscopies per week, as well as higher grades in self-assessment scales in colonoscopy performance.

Conclusions: Gender inequity exists during the gastroenterology clinical training. Women are especially vulnerable during the training period because training years coincide with the expected childbearing age and are therefore less likely to have children compared to their male colleagues.

Key words: female – gender – endoscopy – gastroenterology – training.

Abbreviations: ERCP: endoscopic retrograde cholangiopancreatography; EU: European Union; EUS: endoscopic ultrasound.

INTRODUCTION

The number of women enrolling in medical studies gradually increased at the end of the 20th century. At that time, women made up only one-third of all medical students [1]. Nowadays, according to data from the American Association of Medical Colleges published for 2022-2023, the number of women who choose careers in medicine is continuing to increase, as 56% of medical students are women [2]. Despite the reduction of the gender gap in medicine in general, uneven gender distribution has remained in several medical

fields, especially in areas of interventional medicine, which were traditionally considered to be dominated by men, including gastroenterology. Women are even more underrepresented in areas such as advanced endoscopy, which includes procedures such as endoscopic retrograde cholangiopancreatography (ERCP), endoscopic ultrasound (EUS), and, more recently, endoluminal surgery, and advanced tissue resection techniques [3]. However, a sharp increase in the proportion of female gastroenterologists has been recently reported [2].

To achieve optimal training, professional development should ideally start early, allowing residents to acquire essential medical knowledge and master the manual skills that will be invaluable for their future practice [4]. Afterward, during the fellowship programs, fellows are expected to take an active role in developing their professional careers, by encouraging and nurturing opportunities in academic education and clinical skills [5]. However, despite the same learning objective, teaching strategies and programs may significantly differ between countries, or even within the same region. Moreover, in this

setting, women may be particularly vulnerable due to family planning, which could lead to further difficulties in them following the academic path, combined with a vigorous clinical training. In this setting, disparities of women in academic and leading positions are often explained by childbearing and uneven distribution of childcare and household responsibilities [6, 7]. Therefore, the working environment should be tailored in a way that would allow women to catch up on the missed opportunities, as these challenges have been shown to affect job satisfaction and perceptions of work-life balance [8, 9]. On the other hand, it is not uncommon for women to delay childbearing and family planning because of various career-related pressures, especially in medicine. Bakkensen et al. [10] have reported that 47.2% of women who had children had passed up career opportunities for advancement, while 47.1% tailored their working hours after starting the family. Nevertheless, early career development in the medical field presents a great challenge for both sexes, particularly since many medical workers often have spouses or partners who are also involved in a similar field, some undergoing medical training at the same time, which can seriously affect various major life choices.

During the previous years, several studies have assessed gender gaps in various aspects of gastroenterology, mostly referring to Western countries, that share similar educational systems [3, 11-13], while no such research has been employed for the South-Eastern part of Europe. Hence, our primary objectives were to evaluate the proportion of women practicing gastroenterology in the Balkan region, and to identify if there are any differences in training, education, and obtaining leadership positions when compared to their male counterparts. Secondary objectives were to analyze the differences in clinical practice and training between countries who are members of the European Union (EU) and those that are not, all within the same region.

METHODS

We distributed a web-based survey to physicians who completed their medical training and are currently working in the field of gastroenterology and hepatology. The study was multinational and included medical workers from five countries from the Balkan region – Serbia, Republic of North Macedonia, Montenegro, Greece and Romania, which all share similar cultural backgrounds. However, Serbia, Republic of North Macedonia, and Montenegro are not EU members and are considered developing countries, whereas Greece and Romania are a part of the European Union for almost five and two decades, respectively, and could be considered to be integrated into a less “traditional” mentality during that time. To gain broad geographic representation, questionnaires were distributed under the auspices of national societies of gastroenterologists. Invitation to participate, together with the questionnaire, was sent out to all society members via e-mail. This includes physicians currently employed in the field of gastroenterology and hepatology, including those in training. However, the questionnaire was intended only for those who have completed their training. Inadequately completed questionnaires have been excluded from the analyses. After two weeks, the same e-mail was sent out as a reminder to increase the response rate.

We used Google Forms to create the electronic survey. No personal information was collected. Five separate surveys and five separate web links were generated since the original version required language adaptation (performed by the authors). After completion of the questionnaire, all data were automatically entered into the confidential database, to which only one of the authors had access.

Together with the form, participants were provided with a detailed explanation of the study aims and study protocol which comprised the e-mail body. After filling out the questionnaire and forwarding the answers, it was considered that the respondents gave their consent for the included data to be used for scientific research purposes. Given that filling out the questionnaire was anonymous, after completing the electronic survey, respondents could not withdraw from participating in the research. The questionnaire is presented in the Supplementary file.

The study protocol was reviewed and approved by the Ethics Committee of the University Clinical Center of Serbia on 27th of April 2023 (approval number: 187/4).

Categorical data are presented as absolute and relative frequencies. Numerical variables are presented as median and range. Categorical variables were appropriately analyzed by the Chi-square or Fisher’s exact test. Numerical variables were analyzed by the Student t-test or Mann-Whitney-Wilcoxon test, where appropriate. The statistical significance level was set at 0.05. The statistical analyses were performed using EZR statistical software [R version 3.6.3 (2020)].

RESULTS

The questionnaire was sent out to a total of 1,220 recipients, with 229 respondents completing the questionnaire (response rate 18.8%). Fifteen questionnaires were excluded from the analyses since they were filled out by trainees. The questionnaire distribution process is presented in Fig. 1.

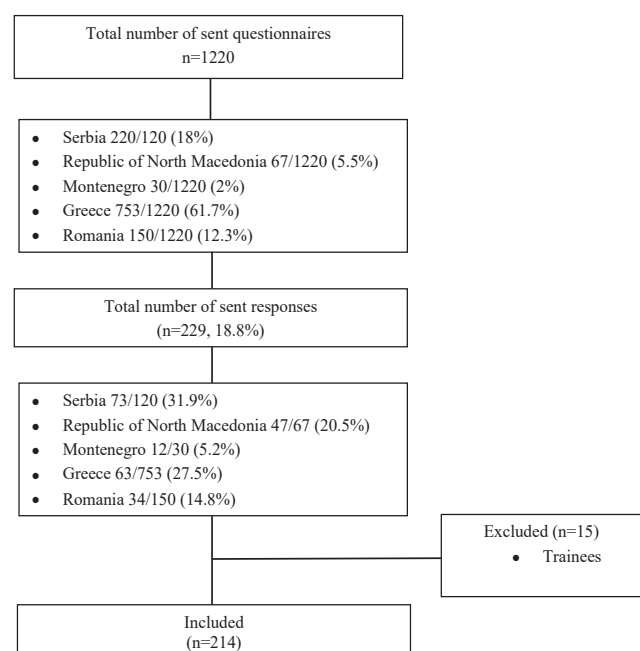


Fig. 1. Questionnaire distribution process flow-chart.

Demographic Data

Out of 214 respondents, almost half were women (n=97, 45.3%). When it comes to socio-demographic characteristics, the proportion of male physicians who were married or in a relationship was higher compared to females (84.6% vs. 74.2%, p=0.020). The proportion of male physicians having children was also higher compared to females, which was of statistical significance (88.0% vs. 64.9%, p<0.001). In addition, male physicians had more children compared to their female colleagues (median (range) 2 (0-6) vs. 1 (0-3), p<0.001). In terms of current employment, female physicians were more commonly employed in tertiary health-care centers, while male physicians more commonly reported working in private healthcare (58.8% vs. 35.9%, and 36.8% vs. 10.3%, p<0.001, respectively). Demographic data are summarized in Table I.

Clinical Training and Academic Positions

When it comes to training experience, women more commonly reported not performing both upper and lower endoscopies independently in everyday clinical practice

compared to men (not performing upper endoscopies: males 4.3% vs. females 13.4%, p=0.024; not performing lower endoscopies: males 8.5% vs. females 27.8%, p<0.001). In addition, in countries where this is possible, males tend to begin endoscopic training earlier than women (endoscopy training before the beginning of residency program: males 19.7% vs. females 7.2%; p=0.008). In general, women reported mastering endoscopic procedures later in clinical training when compared to men (p<0.001). Almost half of the female respondents reported that they mastered upper endoscopy after completing the residency program (n=41, 42.3%), while most of their male colleagues reported that they had mastered the same skill earlier, during the residency program (n=82, 70.1%, p<0.001). The same trend is reported when it comes to colonoscopy. The highest proportion of women felt competent to perform colonoscopy after completing the official training (n=55, 56.7%), while the highest proportion of men reported competency in performing colonoscopy during residency (n=73, 62.4%, p<0.001). However, after performing the same analyses in the EU countries subgroup

Table I. Socio-demographic characteristics

	Total, n (%) n=214 (100)	Men, n (%) n=117 (54.7)	Women, n (%) n=97 (45.3)	p
Age (mean ± SD)	48.18±9.97	49.94±10.30	46.09±9.19	0.004
Marital status, n (%)				
Married/In a relationship	171 (79.9)	99 (84.6)	72 (74.2)	0.020
Divorced	16 (7.5)	10 (8.5)	6 (6.2)	
Single	27 (12.6)	8 (6.8)	19 (19.6)	
Children, n (%)				
Yes	166 (77.6)	103 (88.0)	63 (64.9)	<0.001
No	48 (22.4)	14 (12.0)	34 (35.1)	
Number of children (median, range)	2 (0-6)	2 (0-6)	1 (0-3)	<0.001
Clinical training, n (%)				
Internal medicine specialist	33 (15.4)	15 (12.8)	18 (18.6)	0.260
Gastroenterohepatology subspecialist	181 (84.6)	102 (87.2)	79 (81.4)	
Current employment, n (%)				
Tertiary health care center	99 (46.3)	42 (35.9)	57 (58.8)	<0.001
Secondary health care center	60 (28.0)	30 (25.6)	30 (30.9)	
Private practice	53 (24.8)	43 (36.8)	10 (10.3)	
Other	2 (0.9)	2 (1.7)	0 (0)	
Narrow field of interest, n (%)				
Gastroenterology	93 (43.5)	53 (45.3)	40 (41.2)	0.107
Advanced endoscopy	49 (22.9)	31 (26.5)	18 (18.6)	
Inflammatory bowel disease	23 (10.8)	13 (11.1)	10 (10.3)	
Hepatology	20 (9.3)	5 (4.3)	15 (15.5)	
Oncology	3 (1.4)	1 (0.9)	2 (2.1)	
Gastrointestinal motility	2 (0.9)	2 (1.7)	0 (0)	
More than one field	20 (9.3)	10 (8.5)	10 (10.3)	
Other	4 (1.9)	2 (1.7)	2 (2.1)	
Chief position, n (%)				
Yes	70 (32.7)	44 (37.6)	26 (26.8)	0.108
No	144 (67.3)	73 (62.4)	71 (73.2)	

SD – standard deviation.

only, we did not detect significant differences between sexes in the reporting of the timing of feeling competent to independently perform endoscopic procedures ($p>0.05$). The distribution of performing interventional and advanced endoscopic procedures did not differ between the sexes. Four females reported performing ERCP. No difference was noted in the self-assessment scales regarding performing upper endoscopies and teaching endoscopies, while male physicians self-rated their colonoscopy skills with higher average marks compared to women (8.81 ± 1.91 vs. 8.16 ± 2.41 , $p=0.034$). Males have also reported higher median time of performing

endoscopies (counted as hours per week) compared to their female colleagues [15 (0-60) vs. 12 (0-40), $p=0.003$]. Males and females were equally engaged in teaching endoscopies and no difference was noted in median years in endoscopy mentoring. No difference was observed in respondents' opinions regarding interest in acquiring endoscopic skills and their impression of the trainee's ability to acquire endoscopic skills with respect to gender. Data regarding clinical training and endoscopic skills are summarized in Table II. The proportion of females and males holding academic positions and doctoral and post-doctoral degrees did not differ between the sexes (Table III).

Table II. Clinical training and endoscopic skills

	Total, n (%) n=214 (100)	Men, n (%) n=117 (54.7)	Women, n (%) n=97 (45.3)	p
Performs upper endoscopy independently				
Yes	196 (91.6)	112 (95.7)	84 (86.6)	0.024
No	18 (8.4)	5 (4.3)	13 (13.4)	
Performs colonoscopy independently				
Yes	177 (82.7)	107 (91.5)	70 (72.2)	<0.001
No	37 (17.3)	10 (8.5)	27 (27.8)	
Performs interventional endoscopic procedures independently				
Yes	161 (75.2)	92 (78.6)	69 (71.1)	0.265
No	53 (24.8)	25 (21.4)	28 (28.9)	
Performs advanced endoscopic procedures independently				
Yes	38 (17.8)	24 (20.5)	14 (14.4)	0.284
No	176 (82.2)	93 (79.5)	83 (85.6)	
Beginning of the endoscopic training				
Before the beginning of the residency program	30 (14.0)	23 (19.7)	7 (7.2)	0.008
During the residency program	144 (67.3)	78 (66.7)	66 (68.0)	
After completing the residency program	40 (18.7)	16 (13.7)	24 (24.7)	
Mastering upper endoscopy (point in clinical practice)				
Before the beginning of the residency program	12 (5.6)	11 (9.4)	1 (1.0)	<0.001
During the residency program	137 (64.0)	82 (70.1)	55 (56.7)	
After completing the residency program	65 (30.4)	24 (20.5)	41 (42.3)	
Mastering colonoscopy (point in clinical practice)				
Before the beginning of the residency program	8 (3.7)	7 (6.0)	1 (1.0)	<0.001
During the residency program	114 (53.3)	73 (62.4)	41 (42.3)	
After completing the residency program	92 (43.0)	37 (31.6)	55 (56.7)	
Self-assessment scale 1-10 (upper endoscopy), mean \pm SD	9.12 \pm 1.45	9.21 \pm 1.42	9.01 \pm 1.50	0.31
Self-assessment scale 1-10 (colonoscopy), mean \pm SD	8.54 \pm 2.15	8.81 \pm 1.91	8.16 \pm 2.41	0.034
Self-assessment scale 1-10 (teaching endoscopy), mean \pm SD	8.48 \pm 1.48	8.58 \pm 1.43	8.33 \pm 1.57	0.419
Teaching endoscopy				
Yes	101 (47.2)	62 (53.0)	39 (40.2)	0.074
No	113 (52.8)	55 (47.0)	58 (59.8)	
Number of years teaching endoscopy, median (range)	7.5 (1-35)	10 (1-35)	6 (1-21)	0.152
Average time performing endoscopy (h/week), median (range)	15 (0-60)	15 (0-60)	12 (0-40)	0.003
Interest in acquiring endoscopic skills*				
Men	39 (18.2)	26 (24.1)	13 (16.2)	0.075
Women	11 (5.1)	3 (2.8)	8 (10.0)	
No difference	138 (64.5)	79 (73.1)	59 (73.8)	
ND	26 (12.2)	/	/	

Table II (continued)

Endoscopic skills acquisition*				
Men faster	36 (16.8)	22 (20.4)	14 (17.5)	0.489
Women faster	6 (2.8)	2 (1.9)	4 (5.0)	
No difference	146 (68.2)	84 (77.8)	62 (77.5)	
ND	26 (12.2)	/	/	

SD: standard deviation; ND: no data; * The analyses was conducted on a total of 188 questionnaires.

Difference in Training and Clinical Practice within the Balkan Region

When it comes to gastroenterology training and clinical practice, statistically significant differences were noted between countries that are not members of the EU (non-EU), compared to the EU member countries in almost every analyzed domain (except for the independent performance of upper endoscopies). In terms of clinical training, all EU respondents (100%) were gastroenterology/hepatology subspecialists, while 26.4% of non-EU respondents declared themselves as internal medicine specialists (n=33). In non-EU countries, most respondents were employed in tertiary health-care centers (n=66, 52.8%), while EU respondents mainly reported working in private practice (n=45, 50.6%), which was of statistical significance (p<0.001). Among non-EU respondents, 24.8% (n=31) reported not performing colonoscopy independently in everyday clinical practice, 33.6% (n=42) reported not performing interventional endoscopic procedures, while 87.2% (n=109) reported not performing advanced endoscopic procedures, which was significantly more compared to the EU respondents (not performing colonoscopy: non-EU 24.8% vs. EU 6.7%; not performing interventional procedures: non-EU 33.6% vs. EU 12.4%; not performing advanced procedures: non-EU 87.2% vs. EU 75.3%; p<0.001, p<0.001, and p=0.029, respectively). Significant differences were also observed in the beginning of endoscopic training and the time of mastering endoscopic skills (p<0.001), with both happening later in clinical training in non-EU respondents compared to EU. For instance, most EU respondents started their endoscopic training during residency (n=76, 85.4%), while only half of the non-EU respondents started endoscopic training during residency (n=68, 54.4%), and one-third started training afterwards (n=36, 28.8%). Around half of non-EU respondents

reported mastering upper endoscopy after the residency (n=55, 44%), while this proportion was even higher in colonoscopy (n=77, 61.6%). However, the majority of EU respondents reported mastering endoscopic skills during the residency program (upper: n=74, 83.1%; lower: n=71, 79.8%). Finally, EU respondents more commonly earned both doctoral and post-doctoral degrees compared to the non-EU respondents (53.9% vs. 28%, p<0.001, and 16.9% vs. 0%, p<0.001, respectively).

DISCUSSION

Even though the total number of women choosing a career in medicine is increasing, gender inequity remains a common issue in medical practice, including both clinical and academic settings. Our study consisted of 214 physicians who have completed their training (either in internal medicine or in gastroenterology) and are currently working in the field of gastroenterology. Interestingly, women represented almost half of the respondents (45.3%), which is slightly higher compared to the results of the majority of recently published studies addressing gender disparity [11, 13, 14].

Our results showed that women working as active gastroenterologists are less likely to have children and tend to have fewer children compared to their male colleagues. Male respondents reported having children in 88%, compared to 64.9% of their female colleagues. This observations has previously been supported by the study by Bakkensen J et al. [10] which was conducted among women physicians to evaluate delayed childbearing and to seek the most common reasons behind it. Interestingly, the authors reported that women tend to delay childbearing in favor of their medical training, as well as to modulate career paths according to family planning, irrespective of medical specialty [10].

Table III. Academic positions and academic training

	Total, n (%) n=214 (100%)	Men, n (%) n=117 (54.7)	Women, n (%) n=97 (45.3)	p
Faculty member				
Yes	47 (22.0)	24 (20.5)	23 (23.7)	0.621
No	167 (78.0)	93 (79.5)	74 (76.3)	
PhD degree				
Yes	83 (38.8)	47 (40.2)	36 (37.1)	0.674
No	131 (61.2)	70 (59.8)	61 (62.9)	
Post-doc				
Yes	15 (7.0)	10 (8.5)	5 (5.2)	0.424
No	199 (93.0)	107 (91.5)	92 (94.8)	

Table IV. Differences in clinical practice within the same region with respect to European Union membership

	EU, n (%) 89 (41.6)	Non-EU, n (%) 125 (58.4)	p
Clinical training			
Internal medicine specialist	0 (0)	33 (26.4)	<0.001
Gastroenterohepatology subspecialist	89 (100)	92 (73.6)	
Current employment			
Tertiary health care center	33 (37.1)	66 (52.8)	<0.001
Secondary health care center	10 (11.2)	50 (40)	
Private practice	45 (50.6)	8 (6.4)	
Other	1 (1.1)	1 (0.8)	
Performs upper endoscopy independently			
Yes	85 (95.5)	111 (88.8)	0.132
No	4 (4.5)	14 (11.2)	
Performs colonoscopy independently			
Yes	83 (93.3)	94 (75.2)	<0.001
No	6 (6.7)	31 (24.8)	
Performs interventional endoscopic procedures independently			
Yes	78 (87.6)	83 (66.4)	<0.001
No	11 (12.4)	42 (33.6)	
Performs advanced endoscopic procedures independently			
Yes	22 (24.7)	16 (12.8)	0.029
No	67 (75.3)	109 (87.2)	
Beginning of the endoscopic training			
Before the beginning of the residency program	9 (10.1)	21 (16.8)	<0.001
During the residency program	76 (85.4)	68 (54.4)	
After completing the residency program	4 (4.5)	36 (28.8)	
Mastering upper endoscopy (point in clinical practice)			
Before the beginning of the residency program	5 (5.6)	7 (5.6)	<0.001
During the residency program	74 (83.1)	63 (50.4)	
After completing the residency program	10 (11.2)	55 (44.0)	
Mastering colonoscopy (point in clinical practice)			
Before the beginning of the residency program	3 (3.4)	5 (4)	<0.001
During the residency program	71 (79.8)	43 (34.4)	
After completing the residency program	15 (16.9)	77 (61.6)	
PhD degree			
Yes	48 (53.9)	35 (28.0)	<0.001
No	41 (46.1)	90 (72.0)	
Post-doc			
Yes	15 (16.9)	0 (0)	<0.001
No	74 (83.1)	125 (100)	

EU: European Union.

Additionally, our results, especially those deriving from non-EU countries show that women have reported both beginning and mastering endoscopic procedures later in training compared to men. It is important to stress that the field of gastroenterology significantly differs from other areas of internal medicine since it requires mastering a great number of practical skills that are essential for everyday clinical practice. This also requires adequate mentorship and opportunities to practice which in some countries (e.g. the United States)

occur during the fellowship programs. However, in our region, if a medical professional is currently employed at the gastroenterology service, it is not uncommon to be offered endoscopy training early on to gain as much experience as possible. Probably because of this peculiarity, no studies have addressed this issue, to the best of the author's knowledge. These results could be explained partially by childbearing and parental leave which are in the South-Eastern European region almost exclusively used by women, which both require

temporary cessation in training. It is interesting to note that the additional analyses showed that this does not apply to EU countries (in this case, Greece and Romania), where endoscopic training is more homogenized and in accordance with other EU standards, thus the effect of the aforementioned factor has a smaller impact.

When it comes to performance of advanced endoscopy in general (including EUS), no difference was noted between sexes. However, four female respondents reported performing ERCP, and all of them originated from either Greece or Romania. Even though the underrepresentation of women in advanced endoscopy fellowship programs has been previously reported [3], this could be even more pronounced in procedures which involve radiation exposure, such as ERCP, especially during childbearing age. Furthermore, Yong et al. [15] reported less women pursuing interventional cardiology due to various reasons, one of which being radiation exposure, which shows a similar trend has been reported in other branches of medicine as well.

Several studies have addressed the issue of gender bias in academia, and have reported that women tend to advance to full professor positions later in their careers, or tend to constitute a minority in editorial boards [16, 17]. However, we did not see any similar differences in holding academic or chief positions and doctoral and post-doctoral degrees in our respondents.

When it comes to gastroenterology training and clinical practice, statistically significant differences were noted between non-EU respondents compared to the EU respondents in almost every analyzed domain (except for the performance of upper endoscopies). In general, EU respondents started endoscopic training earlier, performed more endoscopic procedures in their clinical practice, and were more commonly engaged in academic training when compared to non-EU respondents. This may be the result of a lack of global (or in this case regional) standardization in training, which mainly reflects two different tides – considering gastroenterology/hepatology as an integral part of internal medicine, or as a separate comprehensive field of medicine [18]. We are witnessing a rapid increase in knowledge and technology related to gastroenterology and hepatology, which should also be followed by an adequate curriculum change, since nowadays, being a gastroenterologist/hepatologist requires a wide range of skills including communication, complex decision making and performing various diagnostic and interventional procedures, which tend to be more and more specialized.

We acknowledge that this study has a limited sample, and therefore may be inadequate to correctly assess every possible gender gap. The response rate of 18.8% offers a possibility of sampling error and sampling bias. Finally, our study results rely partially on physicians' personal beliefs, and no additional tool was used to objectify their answers (e.g. self-assessment scale, opinion on mastering endoscopic skills, etc.). Additionally, due to regional differences in training curriculum, the term "teaching endoscopies" could not be strictly defined, which may have led to over- or underestimation. However, this is the first study originating from this part of Europe regarding these issues, our groups were almost equally distributed, and most respondents were employed in tertiary care institutions (mostly academic centers), which offered evaluation of experiences

and opinions of highly competent physicians, including those employed in academic surroundings, which certainly adds value and strength to presented results.

CONCLUSIONS

In accordance with the results of this survey, we believe raising gender bias awareness among all medical workers is crucial to increasing both patient and medical professionals' satisfaction. Our results point out that even though we have advanced significantly, some differences between men and women persist, and are more prominent during the training years, which are extremely crucial for the development of the future gastroenterologist/hepatologist. This issue could be resolved by various actions, including further promoting female role models and women in leadership positions, together with better tailoring of training programs during parental leave. Initiatives like the establishment of diversity and equity working groups within Gastroenterology associations (e.g. United European Gastroenterology, the American Association of Gastrointestinal Endoscopy and the European Society of Gastrointestinal Endoscopy) are also important steps and offer the opportunity to work towards alleviating gender disparities and inequities.

Conflicts of interest: None to declare.

Authors' contributions: I.P. conceived and designed the study; I.S.P., M.S.L., A.P.M., E.N.T., M.T., B.S., and L.C. collected the data. I.P. performed the statistical analysis. I.P., I.S.P. and S.L. interpreted the results. I.P. analyzed the data and drafted the manuscript. I.S.P. and T.M. critically revised the first draft. All authors critically revised the manuscript, approved the final version to be published, and agree to be accountable for all aspects of the work.

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