

# The stress and happiness levels of gastroenterologists in Turkiye and factors influencing them

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## ABSTRACT

**Aims:** This study aimed to investigate the stress and happiness levels of gastroenterologists in Turkiye and the factors affecting them.

**Methods:** The authors designed a 25-question questionnaire to investigate gastroenterologists' stress and happiness levels and the reasons that may affect them. Documents containing the questions were sent to 405 gastroenterologists working in Turkiye between October and December 2023 by phone or email via Google Forms.

**Results:** A total of 126 participants, 65.1% of whom were male and 52.4% of whom were under 40 years of age, took part in our study. A median score of 4 on a 5-point Likert scale was obtained when participants were asked about their general level of stress. When the general happiness status was analysed, it was concluded that this median value was below the stress values with 3. The general happiness had the strongest positive correlation with workload satisfaction and career planning happiness ( $r=0.56$ ,  $p<0.001$  and  $r=0.46$ ,  $p<0.001$ , respectively). The general stress level was most negatively correlated with happiness from work intensity satisfaction and support from hospital management ( $r=-0.43$ ,  $p<0.001$  and  $r=-0.30$ ,  $p<0.001$ , respectively).

**Conclusion:** Our study showed that gastroenterologists in Turkiye have a significant level of stress and a neutral level of happiness. It was observed that the most important stress factor is workload, which has a direct effect on the level of happiness and stress. Some participants in our study considered leaving the country due to stress, posing a risk to the future provision of gastroenterology services in Turkiye.

**Keywords:** Gastroenterologist, stress, happiness, workload, emotional health

## INTRODUCTION

The mental health of medical doctors has become a subject of increasing research in recent years, and it is increasingly recognised that stress and burnout, especially in doctors, are among the main determinants of patient care.<sup>1,2</sup> Although stress can be beneficial to a certain extent, heavy working conditions can lead to undesirable physical and psychological consequences. This can result in lost working days, reduced work performance and personal problems.<sup>3</sup> In addition, previous studies have reported problems such as increased risk of medical and decision-making errors, reduced doctor-patient interaction and early retirement.<sup>4,5</sup>

Gastroenterology is a demanding speciality with an increasing demand for endoscopy, which can require unplanned out-of-hours working and involves many invasive procedures.<sup>6</sup> Therefore, studies investigating the stress and burnout levels of gastroenterologists have started to be published in recent years. In a recent national study conducted in Portugal, it was found that burnout was higher in gastroenterologists who were younger, worked on weekends and performed a high volume of endoscopic procedures. In another nationally based

study, it was similarly reported that young gastroenterologists were at risk of burnout.<sup>7</sup> Studies investigating the stress levels and causes of gastroenterologists are more limited in number.<sup>6</sup>

It is thought that burnout among doctors in Turkiye has increased in recent years due to various reasons, including workload, economic problems and fear of violence.<sup>8</sup> It has been reported in the literature that there has been an increase in the number of doctors leaving Turkiye for other countries in recent years due to these and similar reasons.<sup>9</sup>

To the best of our knowledge, there is no study on the stress levels and causes affecting gastroenterologists in Turkiye. In this study, we aimed to investigate the stress and happiness levels of gastroenterologists in Turkiye and the reasons affecting them.

## METHODS

### Study Design and Participants

The authors designed a 25-question questionnaire to investigate gastroenterologists' stress and happiness levels

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and the reasons that may affect them. The survey was sent via Google Forms by phone or email to 405 gastroenterologists working in Türkiye between 15 October and 15 December 2023. Participants were initially informed that the survey was voluntary, and that no identifying information would be included in the survey. Lokman Hekim University Faculty of Medicine Akay Hospital Ethics Committee (Date: 06.09.2023, Decision No: EK1-2023-290) and the study was conducted in accordance with the tenets of the Declaration of Helsinki.

### Data Collection and Questions

Participants were presented with a total of 25 questions designed by the authors. Some questions were modified from questions found in a similar study in literature.<sup>6</sup> The first ten questions collected demographic and occupational data about the participants. The following four questions were based on the respondents' level of emotional health, such as stress level (graded 0-5; 0=none, 5=very stressfull), happiness level (graded 1-5; 1=very unhappy, 5=very happy), daily sleep duration and frequency of sleep interrupted by work. Questions 15-22 were possible morale-related factors (graded 1-5; 1=very unhappy, 5=very happy) that could potentially affect stress and happiness levels. The remaining three questions consisted of the main causes of stress, the thought of leaving due to stress and solutions.

The survey forms with the questions can be found in the attached file.

### Statistical Analysis

SPSS 25 and R Studio 2023.03.0 (with packages "corrplot 0.92" and "ggplot 2 3.4.3") were used in our study. Descriptive statistics were expressed as frequencies, percentages, means and medians (Q1-Q3). The relationship between scale items was analysed using Spearman rank correlation analysis. Univariate logistic regression (LR) was used to analyse whether the identified categories were risk factors for stress and happiness. The chi-squared ratio test was used for pairwise ratio comparisons of scale items. For all analyses, the significance level was set at 0.05.

## RESULTS

A total of 126 participants took part in our study, of whom 65.1% were male and 52.4% were under 40 years of age. The majority of the participants were married (80.2%) and actively working (96%). The study concluded that the institution of employment was generally a training-research hospital (34.9%), followed by city hospitals (27.8%). Additionally, it was found that 61.9% of the participants, who reported that their interest in gastroenterology was primarily in advanced endoscopy (53.2%), had been professionals in the field of gastroenterology for less than 5 years. Other detailed information is presented in [Table 1](#).

When the participants were asked about the general stress level, the median value was 4 on a 5-point Likert scale. In contrast, the median value for general happiness was 3, indicating that happiness levels were lower than stress levels. Although 61.1% of the participants had a sleep level of around

**Table 1. Demographic and occupational characteristics of the study group**

<b>Gender</b>	
Female	44 (34.9)
Male	82 (65.1)
<b>Age</b>	
<40	66 (52.4)
40-50	45 (35.7)
50>	15 (11.9)
<b>Marital status</b>	
Single	17 (13.5)
Married	101 (80.2)
Divorced	8 (6.3)
<b>Current work status</b>	
Working	121 (96)
Retired then returned	5 (4)
<b>Type of hospital</b>	
University hospital	22 (17.5)
Training and research hospital	44 (34.9)
City hospital	35 (27.8)
Public hospital	12 (9.5)
Private hospital	13 (10.3)
<b>Subspecialty</b>	
Advanced endoscopy	67 (53.2)
Inflammatory bowel diseases	24 (19)
Hepatology	20 (15.9)
Functional diseases	8 (6.3)
Other	7 (5.6)
<b>Stage/status</b>	
Education person	29 (23)
Specialist physician (Compulsory national duty)	30 (23.8)
Specialist physician	30 (23.8)
Trainee/Fellow	37 (29.4)
<b>Duration of work as a gastroenterologist (years)</b>	
<5	78 (61.9)
5-10	22 (17.5)
10-20	13 (10.3)
20<	13 (10.3)
<b>Number of gastroenterologists working in the same hospital</b>	
0	25 (19.8)
1	12 (9.5)
2-5	33 (26.2)
>5	56 (44.4)
<b>Total number of out of hours in 1 month (days)</b>	
0	25 (19.8)
1-5	34 (27)
6-10	33 (26.2)
10>	34 (27)
<b>Variables are expressed as n (%)</b>	

6-8 hours, the number of gastroenterologists who experienced 1 to 5 sleep interruptions due to out-of-hours work in a month constitutes a significant amount (48.4%) (Table 2).

Stress levels	4 (3-4)
Happiness levels	3 (2-4)
Sleep duration (hours)	
<4 h	3 (2.4)
4-6 h	40 (31.7)
6-8 h	77 (61.1)
>8 h	6 (4.8)
Number of sleep interruptions per month (days)	
0 day	13 (10.3)
1-5 day	61 (48.4)
6-10 day	36 (28.6)
10> day	16 (12.7)

The general level of stress and happiness is expressed as mean and median (Q1-Q3), others n (%)

When the relationship between general happiness and stress levels and morale-related factors was analysed, it was concluded that general happiness had the strongest positive correlation with workload satisfaction and career planning happiness ( $r=0.56, p<0.001$  and  $r=0.46, p<0.001$ , respectively) and the weakest correlation with happiness from medical supplies/equipment ( $r=0.21, p=0.026$ ). It was concluded that general stress level was most negatively correlated with happiness from work intensity satisfaction and support from hospital management ( $r=-0.43, p<0.001$  and  $r=-0.30, p<0.001$ , respectively) and least correlated with happiness from career planning ( $r=-0.14, p=0.137$ ) (Figure 1).

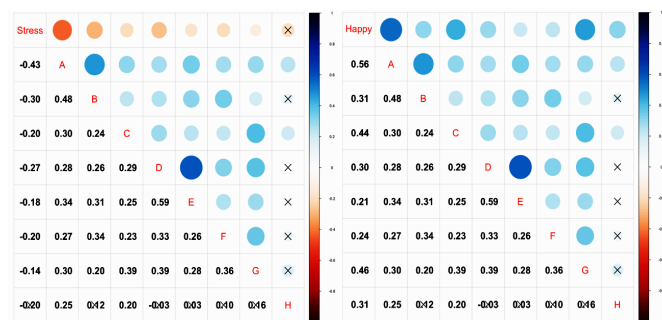


Figure 1. Correlations of general happiness and stress levels with factors associated with morale. A: Workload, B: Support from hospital management, C: Support from clinical colleagues, D: Hospital buildings/facilities, E: Medical supplies and devices, F: Salary adequacy, G: Career planning, H: Home Life. X: Non-significant

Taking into account the 4<sup>th</sup> and 5<sup>th</sup> categories of general stress level and the 1<sup>st</sup> and 2<sup>nd</sup> categories of general happiness on a Likert scale, the logistic model was used to analyse whether demographic and occupational variables were risk factors. Although the variable total number of working hours in 1 month seemed to be a candidate risk factor for stress level ( $p=0.06$ ), it did not reach a significant level of significance. No significant result was found for general level of happiness (Table 3).

Table 3. Logistic regression analysis for stress (likerts 4 and 5) and unhappiness (likerts 1 and 2)

Variables	Stress (LR for categories 4. and 5.)		Unhappiness (LR for categories 1. and 2.)	
	OR (95% CI)	p	OR (95% CI)	p
Gender	1.5 (0.4-6.5)	0.561	0.8 (0.08-9.3)	0.882
Age	1.4 (0.5-4.1)	0.494	1.3 (0.2-6.9)	0.760
Marital status	0.5 (0.1-2.4)	0.455	0.3 (0.1-5.5)	0.453
Type of hospital	1.1 (0.6-1.8)	0.888	1.4 (0.5-4)	0.573
Current work status	0.9 (0.5-1.6)	0.723	0.9 (0.4-2.6)	0.950
Subspecialty	0.9 (0.5-1.9)	0.903	2.8 (0.6-13.9)	0.209
Duration of work as a gastroenterologist (years)	1.1 (0.6-2.2)	0.757	1.9 (0.4-9.8)	0.431
Number of gastroenterologists working in the same hospital	0.8 (0.4-1.3)	0.351	0.8 (0.3-1.9)	0.628
Total number of out of hours in 1 month (days)	2.3 (0.9-5.6)	0.061	0.3 (0.1-1.6)	0.174

LR: Logistic regression, OR: Odds ratio, CI: Confidence interval

The results of the analyses in which all the responses of the participants to the morale-related factors are evaluated in general and the ratios of the 1<sup>st</sup>-2<sup>nd</sup> categories and the 4<sup>th</sup>-5<sup>th</sup> categories are compared are presented in Table 4. It is seen that there is a significant difference between the groups with high and low happiness levels in almost all factors. It was concluded that only satisfaction with hospital buildings/facilities did not make a difference ( $p=0.208$ ) in terms of the respondents' attitude.

When the participants were asked about the factors causing stress, excessive work ranked first with 17.24%. However, the least important factor causing this situation was confidence with 4.4%. When asked about the unit or location they would consider leaving due to stress, current hospital and country of residence shared the same percentage (30.1%). In response to the factors that may be effective in reducing the level of stress, the most common answer (27.6%) was to increase the national association-bureaucracy relations. In addition, training programmes (26.4%) and mentoring by experienced (25.7%) are also considered to be solutions for the participants with high rates (Figure 2).

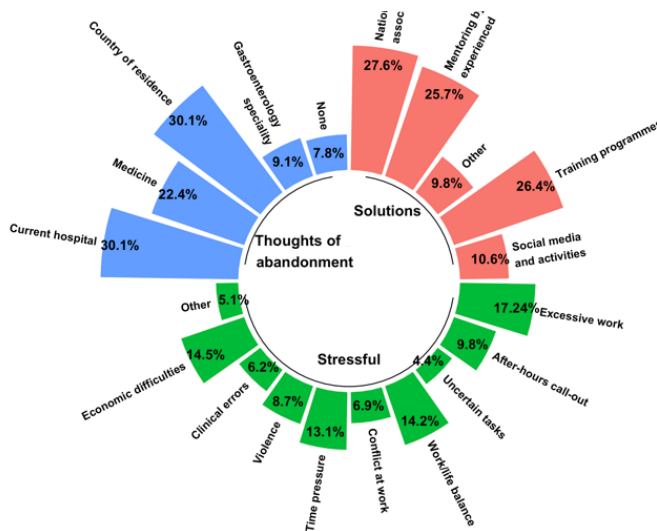
## DISCUSSION

Our study investigated the stress and happiness levels of gastroenterologists in Türkiye and the reasons for them. The study found that a significant proportion of gastroenterologists in Türkiye were in the stressful category and their happiness levels were not in the happy or unhappy classification, but in the neutral range. In our study, it was observed that the morale-related factor affecting both stress and happiness levels is satisfaction with workload, which is directly proportional to happiness and inversely proportional to stress. Among the stress factors, workload was most frequently mentioned by the participants, and the most common solution suggestion was to increase the relations of the national gastroenterological association with the bureaucracy and management units.

**Table 4. Participants' responses to morale-related factors**

	L1	L2	L3	L4	L5	L1-L2	L4-L5	p
Workload	14 (11.1)	36 (28.6)	45 (35.7)	28 (22.2)	3 (2.4)	39.7	24.6	0.015
Support from hospital management	33 (26.2)	39 (31)	34 (27)	16 (12.7)	4 (3.2)	57.2	15.9	<0.001
Support from clinical colleagues	6 (4.8)	19 (15.1)	46 (36.5)	49 (38.9)	6 (4.8)	19.9	43.7	<0.001
Hospital buildings/facilities	17 (13.5)	30 (23.8)	43 (34.1)	30 (23.8)	6 (4.8)	37.3	28.6	0.180
Medical Supplies and devices	24 (19)	49 (38.9)	31 (24.6)	20 (15.9)	2 (1.6)	57.9	17.5	<0.001
Salary adequacy	42 (33.3)	35 (27.8)	38 (30.2)	9 (7.1)	2 (1.6)	61.1	8.7	<0.001
Career planning	9 (7.1)	48 (38.1)	40 (31.7)	23 (18.3)	6 (4.8)	45.2	23.1	<0.001
Home life	4 (3.2)	9 (7.1)	27 (21.4)	66 (52.4)	20 (15.9)	10.3	68.3	<0.001

Variables are expressed as n (%), L1: It represents the first category of the Likert-Type Scale



**Figure 2.** Distribution of participants' responses to stress factors, thoughts of abandonment and solutions

Stress and burnout among physicians have been an important research topic in recent years. Although these studies have been conducted in different countries<sup>10,11</sup> and on different specialties<sup>12,13</sup> the common feature of most of them is that physicians have significant stress and burnout. In 2018, an online survey of 15,000 U.S. physicians showed that 50% had stress and burnout. It was stated that the significant level of these participants was between the ages of 45-54, the group with high work efficiency.<sup>14</sup> A year later, a similar rate of burnout was observed. It was suggested that 14 per cent of participants had suicidal thoughts.<sup>15</sup>

Studies on gastroenterologists have shown that doctors in the specialist group also have high stress levels.<sup>6</sup> In a study conducted among gastroenterologists in the UK, it was found that the most important cause of stress was excessive workload. Undoubtedly, many reasons such as the nature of gastroenterology requiring both working hours and after hours, requiring emergency patient examination and management, and having many invasive procedures may be effective in this. In another study, it was reported that gastroenterologists had moderate stress and burnout, and that this stress level was mostly related to invasive procedures, and that operators with less experience and operators performing invasive advanced endoscopic procedures experienced more stress.<sup>16</sup> In our study, 57.9% of participants rated themselves in the stressful and very stressful category. Workload was

found to be the most stressful factor. It is known that the total population of Turkiye will exceed 85 million by 2023. It has been published that more than 70% of this population is the adult population.<sup>17</sup> In a recent study investigating the awareness of gastroenterologists about obesity in Turkiye, it was reported that a total of 1117 gastroenterology specialists were reached via e-mail registered to the National Gastroenterology Association.<sup>18</sup> Considering these ratios, there is 1 gastroenterologist per 50,000 adult population in Turkiye. Considering that some of these registered gastroenterologists are retired, this can give us an idea of the work intensity of the remaining gastroenterologists who are still working. In addition, the fact that workload satisfaction correlated correctly with happiness level and inversely with stress level emphasizes the importance of this issue more clearly in our study. We think that the problems in work-life balance, which stand out among the stress factors, may also be related to this intense workload.

In some studies, it was reported that gastroenterologists in the younger age group were more at risk of stress and burnout. In the same study, it was reported that burnout was higher in those who worked on weekends and performed a higher number of endoscopic procedures.<sup>19</sup> Although the study included 52 gastroenterologists and used a burnout scoring system, it is comparable to our study in terms of key findings. In our study, multivariate analysis was performed on stress and no significant risk factor was found when the high stress groups were examined for both demographic and occupational risk factors. Although we found a statistical result close to the significant finding of gastroenterologists working overtime after working hours, we could not determine that there was a risk factor.

In our study, economic problems and salary levels were found to be one of the prominent stress factors and low levels of morale-related happiness. In a recent study conducted in the USA, it was stated that gastroenterology was the subspecialty of internal medicine with the highest number of applicants compared to the positions offered in the last 12 years. This demand rate was found to be correlated with salary adequacy.<sup>20</sup>

Another notable finding in the participants' responses was that the most common reasons for leaving the hospital and the country of residence were the current hospital and the country of residence. A recent study found that the main reasons for doctor migration in Turkiye were economic difficulties, intensive working conditions and increasing violence.<sup>9</sup> In our

study, it is noteworthy that similar factors came to the fore and the idea of travelling to other countries was considered at any time in approximately one third of the participants. Considering that more than half of the participants were under the age of 40, it can be said that these data may pose a risk in the capacity to provide gastroenterological health services.

Among the solutions identified by the participants, increasing the activities of the national association, particularly in relation to bureaucracy and management units, increasing training programs and mentoring by experienced gastroenterologists came to the fore. In this regard, the American Gastroenterological Association (AGA) recently highlighted the high stress levels of gastroenterologists, especially fellows and less experienced gastroenterologists, and the importance of mentoring and training programs.<sup>21</sup>

### Limitations

This study has some limitations. First, the relatively low number of participants may affect the generalizability of the findings. The number of participants could have been higher if the researcher's reached gastroenterologists through the national gastroenterological association. Another limitation was that the participants determined their stress and happiness levels according to their own subjective evaluations.

### CONCLUSION

Our study showed that gastroenterologists in Türkiye have a significant level of stress and a neutral level of happiness. It was observed that the most important stress factor is workload, which has a direct effect on the level of happiness and stress. In addition, the fact that some of the participants in our study had thoughts of leaving the country and the profession due to stress is a risk in terms of limiting the activities of providing health services in the field of gastroenterology in Türkiye in the future.

### ETHICAL DECLARATIONS

#### Ethics Committee Approval

Ethical approval was obtained from the Lokman Hekim University Faculty of Medicine Akay Hospital Ethics Committee (Date: 06.09.2023, Decision No: EK1-2023-290).

#### Informed Consent

Because the study was designed retrospectively, no written informed consent form was obtained from patients.

#### Referee Evaluation Process

Externally peer-reviewed.

#### Conflict of Interest Statement

The authors have no conflicts of interest to declare.

#### Financial Disclosure

The authors declared that this study has received no financial support.

### Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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