

Supplementary Material

Title: Burnout and Endoscopy-Specific Workload among Gastroenterologists and Gastroenterology Fellows in Turkey: A National Cross-Sectional Survey

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Supplementary Appendix 1. Study-specific questionnaire components and coding of the Endoscopy Workload Module

The questionnaire consisted of demographic and professional characteristics, career-related outcomes, the Copenhagen Burnout Inventory, and a 12-item Endoscopy Workload Module. The Copenhagen Burnout Inventory was scored according to the published scoring method and transformed to a 0–100 scale. The study-specific Endoscopy Workload Module items, response formats, and analytic coding are shown below. The Copenhagen Burnout Inventory items are not reproduced here; the validated Turkish version was used and scored according to the original scoring instructions.

Appendix Table A1. Endoscopy Workload Module items and analytic coding

Item	Survey item/ variable	Response format	Analytic coding
1	Weekly endoscopic procedure volume	Numeric entry	Dichotomised as more than 60 vs 60 or fewer procedures per week
2	Weekly half-day endoscopy sessions	Numeric entry	Dichotomised as six or more vs fewer than six half-day sessions per week

Item	Survey item/ variable	Response format	Analytic coding
3	Frequency of endoscopy list overruns	Ordinal: never, less than once a week, once a week, several times a week, every list	Coded as at least once weekly vs less frequent
4	Proportion of therapeutic or advanced procedures	Percentage of total procedures	Analysed individually as a workload-complexity indicator; not combined into a composite score
5	Proportion of emergency or unscheduled procedures	Percentage of total procedures	Coded as 10% or more vs less than 10% of total endoscopy workload
6	Out-of-hours endoscopy duty	Yes / No	Coded as present vs absent
7	Frequency of after-hours work-related communication	Five-point Likert-type response: never, rarely, sometimes, frequently, very frequently	Dichotomised as frequent/very frequent vs all other responses
8	Physical exhaustion after endoscopy days	Five-point Likert-type response: not at all, slightly, moderately, very, extremely	Dichotomised as very/extremely exhausting vs all other responses
9	Perceived documentation burden	Five-point Likert-type response: very low, low, moderate, high, very high	Dichotomised as high/very high vs all other responses

Item	Survey item / variable	Response format	Analytic coding
		Five-point Likert-type	
10	Perceived adequacy of endoscopy unit staff support	response: very adequate, adequate, neither, inadequate, very inadequate	Dichotomised as inadequate/very inadequate vs all other responses
		Five-point Likert-type	
11	Perceived workload fairness	response: very fair, fair, neither, unfair, very unfair	Dichotomised as unfair/very unfair vs all other responses
	Access to institutional psychological support	Yes / No	Coded as present vs absent

Note. The Endoscopy Workload Module was designed to measure distinct workload exposures rather than a latent psychometric construct; therefore, no total score was calculated. Items were analysed individually. Formal quantitative content validity indices, such as item-level or scale-level content validity index calculations, were not performed. The module was pilot-tested with 10 gastroenterologists for clarity and face validity. Pilot feedback led to minor wording refinements; no items were added or removed.

Supplementary Table 1. Sensitivity analyses

Sensitivity analyses comparing the main logistic regression model with modified Poisson regression and linear regression using continuous personal burnout score.

Variable	Main logistic model, adjusted OR (95% CI)	Modified Poisson model, adjusted PR (95% CI)	Linear regression with continuous personal burnout score, β (95% CI)	Direction of association
Six or more monthly on-call shifts	4.82 (2.91–7.98)	2.45 (1.85–3.24)	26.8 (20.4–33.2)	Consistent
Out-of-hours endoscopy duty	3.45 (2.10–5.67)	2.12 (1.63–2.75)	19.5 (13.6–25.4)	Consistent
More than 60 endoscopic procedures per week	2.91 (1.82–4.66)	1.98 (1.51–2.60)	17.2 (11.4–23.0)	Consistent
Inadequate endoscopy unit staff support	2.68 (1.65–4.35)	1.85 (1.42–2.41)	15.9 (10.1–21.7)	Consistent
Six or more outpatient sessions per week	2.40 (1.48–3.90)	1.72 (1.33–2.23)	14.1 (8.4–19.8)	Consistent
Female sex	1.68 (0.98–2.88)	1.32 (0.95–1.83)	6.8 (–0.5 to 14.1)	Non-significant / similar direction

Note. OR, odds ratio; PR, prevalence ratio; CI, confidence interval. The modified Poisson model with robust standard errors was used because the binary outcome was common. Linear regression used continuous personal burnout score as the dependent variable. These analyses were performed to evaluate whether the direction and relative pattern of associations were consistent with the main logistic

regression model. Prevalence ratios were attenuated compared with the corresponding odds ratios, as expected given the high frequency of the outcome.

Supplementary Table 2. Exploratory workload comparisons by professional status

Endoscopy workload and organisational indicators according to professional status.

Workload indicator	Fellows (n = 82)	Completing obligatory service (n = 42)	Completed obligatory service (n = 92)	Academic faculty (n = 62)	p value
Monthly on-call frequency, median (IQR)	8 (6–11)	6 (4–8)	5 (3–7)	7 (5–10)	0.008 ^a
Public sector practice, n (%)	79 (96.3)	42 (100)	76 (82.6)	49 (79.0)	0.002 ^b
Weekly endoscopy volume more than 60 procedures, n (%)	42 (51.2)	20 (47.6)	42 (45.7)	26 (41.9)	0.74 ^b
Out-of-hours endoscopy duty, n (%)	28 (34.1)	10 (23.8)	22 (23.9)	10 (16.1)	0.12 ^b
Inadequate endoscopy unit staff support, n (%)	44 (53.7)	28 (66.7)	48 (52.2)	30 (48.4)	0.305 ^b
Six or more outpatient sessions per week, n (%)	64 (78.0)	30 (71.4)	68 (73.9)	44 (71.0)	0.82 ^b

Note. Values are presented as median (IQR) or n (%), as appropriate. ^aKruskal–Wallis test; ^bchi-square test or Fisher’s exact test, as appropriate. Comparisons were exploratory and were used to contextualise burnout patterns across professional status groups. They should not be interpreted as evidence of causal differences between career stages.