



Research

Prevalence and Associated Factors of Dyspepsia in Primary Care: A Descriptive Evaluation of Prescribing Patterns

Birinci Basamakta Dispepsinin Prevalansı ve İlişkili Faktörler: Reçeteleme Örüntülerinin Tanımlayıcı Değerlendirmesi

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ABSTRACT

Objective: This study aimed to determine the prevalence of dyspepsia, to identify associated factors, and to descriptively evaluate prescribing patterns for dyspepsia in a primary care setting.

Methods: This single-center, cross-sectional study included individuals aged 15-70 years registered at a family health center (n=4,453). The sample size was calculated assuming a dyspepsia prevalence of 20%, a 95% confidence level, and a 5% margin of error, yielding a minimum of 233 participants. Participants were selected using a population-based, age-stratified sampling approach. Dyspepsia was defined according to the Rome IV criteria. Data were collected through face-to-face interviews using a structured questionnaire assessing sociodemographic characteristics, lifestyle factors, anthropometric measurements, and anxiety levels using the Beck Anxiety Inventory. Prescription data were retrospectively obtained from electronic prescription records. Statistical analyses included chi-square tests, the Mantel-Haenszel test, and multivariate logistic regression analysis. A p-value <0.05 was considered statistically significant.

Results: The prevalence of dyspepsia was 19.3% [n=45; 95% confidence interval (CI): 14.2-24.4]. Prevalence increased significantly with age (p=0.003) and was higher in females than in males (25.2% vs. 8.5%, p=0.002). In multivariate analysis, increasing age [adjusted odds ratio (OR): 1.06 per year; 95% CI: 1.02-1.10; p=0.001] and a high anxiety level (adjusted OR: 14.30; 95% CI: 5.93-34.45; p<0.001) remained independently associated with dyspepsia. Prescription analysis showed that 20.5% of primary care prescriptions included a dyspepsia diagnosis, with proton pump inhibitors accounting for 82% of dyspepsia-related prescriptions.

Conclusion: Dyspepsia is common in primary care, with age and anxiety emerging as key independent factors. Identification of modifiable risk factors and rational prescribing practices may improve dyspepsia management.

Keywords: Primary care, dyspepsia, prevalence, anxiety, prescribing patterns

ÖZ

Amaç: Bu çalışmada, birinci basamak sağlık hizmeti ortamında dispepsi prevalansının belirlenmesi, dispepsi ile ilişkili faktörlerin saptanması ve dispepsiye yönelik reçeteleme örüntülerinin tanımlayıcı olarak değerlendirilmesi amaçlanmıştır.

Gereç ve Yöntem: Bu tek merkezli, kesitsel çalışma, bir aile sağlığı merkezine kayıtlı 15-70 yaş arası bireyler arasında yürütülmüştür (n=4.453). Örneklem büyüklüğü, dispepsi prevalansı %20, %95 güven düzeyi ve %5 hata payı varsayılarak hesaplanmış ve en az 233 katılımcı olarak belirlenmiştir. Katılımcılar, toplum temelli yaşa göre tabakalandırılmış örnekleme yöntemiyle seçilmiştir. Dispepsi Roma IV kriterlerine göre tanımlanmıştır. Veriler, sosyodemografik özellikler, yaşam tarzı faktörleri, antropometrik ölçümler ve Beck Anksiyete Envanteri ile değerlendirilen anksiyete düzeylerini içeren yapılandırılmış bir anket aracılığıyla yüz yüze görüşmelerle toplanmıştır. Reçete verileri, gerçek yaşam reçeteleme örüntülerini tanımlamak amacıyla elektronik reçete kayıtlarından geriye dönük olarak elde edilmiştir. İstatistiksel analizlerde ki-kare testi, doğrusal ilişki için Mantel-Haenszel testi ve çok değişkenli lojistik regresyon analizi kullanılmış, p<0,05 değeri istatistiksel olarak anlamlı kabul edilmiştir.

Bulgular: Dispepsi prevalansı %19,3 olarak saptanmıştır [n=45; %95 güven aralığı (GA): 14,2-24,4]. Prevalans yaşla birlikte anlamlı olarak artmış (p=0,003) ve kadınlarda erkeklere göre daha yüksek bulunmuştur (%25,2'ye karşı %8,5; p=0,002). Çok değişkenli analizde, artan yaş [düzeltilmiş olasılık oranı (OR): 1,06/yıl; %95 GA: 1,02-1,10; p=0,001] ve yüksek anksiyete düzeyi (düzeltilmiş OR: 14,30; %95 GA: 5,93-34,45; p<0,001) dispepsi ile

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ÖZ

bağımsız olarak ilişkili bulunmuştur. Reçete analizinde, birinci basamakta yazılan reçetelerin %20,5'inde dispepsi tanısının yer aldığı ve dispepsiye yönelik reçetelerin %82'sinin proton pompa inhibitörlerinden oluştuğu saptanmıştır.

Sonuç: Dispepsi, birinci basamakta sık görülen bir durumdur ve yaş ile anksiyete düzeyi başlıca bağımsız belirleyiciler olarak öne çıkmaktadır. Değiştirilebilir risk faktörlerinin belirlenmesi ve rasyonel reçeteleme uygulamaları, dispepsi yönetiminin iyileştirilmesine katkı sağlayabilir.

Anahtar Kelimeler: Birinci basamak, dispepsi, prevalans, anksiyete, reçeteleme örüntüleri

INTRODUCTION

Dyspepsia is a common gastrointestinal disorder characterized by upper abdominal symptoms, including postprandial fullness, early satiety, epigastric pain, and epigastric burning (1,2). Due to its frequent occurrence and chronic nature, dyspepsia represents a common clinical problem in primary care, where most patients initially seek medical care (1,3). Although dyspepsia is not a life-threatening condition, it is associated with impaired quality of life and increased healthcare utilization (3-5).

Dyspepsia is broadly classified into organic and functional subtypes. Organic dyspepsia refers to cases in which a structural, metabolic, or systemic cause explaining the symptoms is identified through diagnostic evaluation (6). In contrast, functional dyspepsia (FD) is defined by the absence of an identifiable organic pathology (1). The Rome IV criteria provide a symptom-based diagnostic framework that is commonly used in clinical practice and epidemiological studies (4,7). According to these criteria, FD is diagnosed when one or more dyspeptic symptoms persist for at least three months, with symptom onset at least six months before diagnosis, in the absence of an underlying organic disease (4,8).

Epidemiological studies suggest that approximately 80-85% of individuals presenting with dyspeptic symptoms are classified as having FD (1,6). Reported prevalence rates of dyspepsia vary across studies depending on diagnostic criteria, geographic region, and study design (3,4,7). Systematic reviews and meta-analyses based on the Rome criteria have reported a global prevalence of FD of approximately 20% (3,4). Female sex, advancing age, and lower socioeconomic status have consistently been identified as factors associated with dyspepsia (1,4,9).

Recent global data based on Rome criteria indicate marked regional variation in dyspepsia prevalence, while contemporary primary care-based epidemiological data from Türkiye remain limited (4,10). In Türkiye, available studies are relatively scarce, and many rely on earlier diagnostic criteria or focus on secondary or tertiary care populations, limiting their generalizability to current primary care practice (10,11). Primary care physicians play a central

role in the evaluation and management of dyspepsia, as a substantial proportion of individuals with dyspeptic symptoms first present to primary care facilities (12,13).

In addition to identifying demographic and lifestyle-related risk factors, evaluating prescribing patterns in primary care is important for understanding real-world management approaches and potential areas for improvement (14-16). However, real-world data that comprehensively address dyspepsia prevalence, associated factors, and prescribing patterns within primary care settings remain limited (14).

Therefore, the present study aimed to determine the prevalence of dyspepsia among individuals aged 15-70 years registered at a family health center, to identify factors independently associated with dyspepsia, and to evaluate the distribution of pharmacological drug groups prescribed for dyspepsia in a primary care setting.

METHODS**Study Design and Population**

This single-center, cross-sectional study was conducted at a family health center among individuals aged 15-70 years. At the time of the study, a total of 4,453 individuals within this age range were registered at the family health center. The primary outcome of the study was the presence of dyspepsia. Independent variables included age, sex, body mass index (BMI), educational level, socioeconomic status, presence of chronic diseases, anxiety level, smoking status, coffee and alcohol consumption, and eating speed.

The sample size was calculated using a single-proportion formula to estimate the prevalence of dyspepsia, assuming a prevalence of 20%, a 95% confidence interval (CI), and a 5% margin of error, resulting in a minimum required sample size of 233 participants. Participants were selected using a population-based, age-stratified sampling method among individuals attending the family health center during the study period.

Data Collection Tools and Procedure

Data collection was carried out between July 1, 2020, and December 31, 2020. Individuals aged 15-70 years who visited the family health center for any reason and agreed to

participate were included in the study. All participants were informed about the purpose and procedures of the study. Written informed consent was obtained from participants aged 18 years and older, and from the parents or legal guardians of participants aged 15-17 years.

Data were collected through face-to-face interviews using a structured questionnaire based on the Rome IV diagnostic criteria for dyspepsia. The questionnaire included sections on sociodemographic characteristics, lifestyle habits, and anthropometric measurements. Anxiety levels were assessed using the 21-item Beck Anxiety Inventory (BAI), a widely used and internationally validated instrument. A score of ≥ 16 was used to define high anxiety level, in accordance with established severity classifications (17).

Individuals younger than 15 years or older than 70 years, those who were unable to respond to the questionnaire due to illness, and individuals reporting symptoms consistent with irritable bowel syndrome were excluded from the study. Participant recruitment was terminated once the target sample size of 233 individuals was reached.

Prescription Data

Prescription data related to the pharmacological treatment of dyspepsia in primary care were obtained retrospectively from the electronic prescription records of the same family health center. Prescriptions issued between December 1, 2020, and January 1, 2021, were reviewed using the electronic family medicine information system of the study center. This one-month period was selected to provide a pragmatic snapshot of real-world prescribing practices in a primary care setting. Prescription analysis was conducted in a separate patient population within the same primary care setting.

Ethical Considerations

This study was conducted in accordance with the ethical principles of the World Medical Association Declaration of Helsinki. Ethical approval was obtained from the University of Health Sciences Türkiye, İstanbul Haseki Training and Research Hospital Clinical Research Ethics Committee (approval no: 2020-124, date: 24.06.2020).

Statistical Analysis

Statistical analyses were performed using SPSS version 15.0. Categorical variables were presented as frequencies and percentages. Comparisons between groups were performed using the chi-square test. Linear associations and trends across ordered categorical variables were assessed using the Mantel-Haenszel test.

Multivariate logistic regression analysis was performed to identify factors independently associated with dyspepsia.

Variables included in the model were selected based on clinical relevance and previous literature, and included age, sex, obesity (BMI ≥ 30), socioeconomic status, and anxiety level (BAI score ≥ 16). Results were reported as odds ratios (ORs) with 95% CIs. A p-value < 0.05 was considered statistically significant.

RESULTS

Participant Characteristics and Dyspepsia Prevalence

A total of 233 individuals were included in the study; 64.8% were female (n=151) and 35.2% were male (n=82). The mean age of the participants was 36.7 ± 14.2 years.

According to the Rome IV criteria, dyspepsia prevalence in the study population was 19.3% (n=45; 95% CI: 14.2-24.4) (Table 1).

Univariate Analysis

The prevalence of dyspepsia increased significantly across age groups, rising from 8.6% in the 15-20-year age group to 43.8% among individuals aged 61-70 years ($p=0.003$). Dyspepsia was more common in females than in males (25.2% vs. 8.5%, $p=0.002$) (Table 1).

In univariate analyses, dyspepsia prevalence increased as educational level decreased ($p<0.001$). Low socioeconomic status was also associated with a higher prevalence of dyspepsia ($p=0.001$). Dyspepsia prevalence was significantly higher among individuals not engaged in income-generating employment ($p<0.001$) (Table 1).

Dyspepsia prevalence increased with higher BMI and reached 67.6% among individuals with obesity (BMI ≥ 30) ($p<0.001$). Participants with chronic diseases had a significantly higher prevalence of dyspepsia compared with those without chronic conditions ($p<0.001$) (Table 1).

Regarding lifestyle factors, dyspepsia prevalence increased with higher coffee and tea consumption (both $p<0.001$). Although overall smoking status was not significantly associated with dyspepsia ($p=0.126$), a significant positive association was observed between the number of cigarettes smoked per day and dyspepsia prevalence ($p=0.002$). Eating speed was strongly associated with dyspepsia, with the highest prevalence observed among individuals who reported eating quickly (44.1%, $p<0.001$). Alcohol consumption was not significantly associated with dyspepsia ($p=1.000$) (Table 1).

Participants with high anxiety levels (BAI score ≥ 16) had a markedly higher prevalence of dyspepsia compared with those with lower anxiety scores (54.5% vs. 8.4%, $p<0.001$) (Table 1).

Table 1. Distribution of sociodemographic, clinical, and lifestyle variables according to dyspepsia status

		Dyspepsia				p [#]
		Present		Absent		
		n	%	n	%	
Age group	15-20	3	8.6	32	91.4	0.003
	21-30	5	9.6	47	90.4	
	31-40	8	14.5	47	85.5	
	41-50	12	26.7	33	73.3	
	51-60	10	33.3	20	66.7	
	61-70	7	43.8	9	56.3	
Gender	Male	7	8.5	75	91.5	0.002
	Female	38	25.2	113	74.8	
Participants by BMI	Underweight	3	18.8	13	81.3	<0.001
	Normal	6	7.3	76	92.7	
	Overweight	11	11.2	87	88.8	
	Obese	25	67.6	12	32.4	
BMI (≥30 vs. <30)*	Less than 30	20	12.3	142	87.7	<0.001
	30 and older	25	35.2	46	64.8	
Marital status	Never married	8	12.9	54	87.1	0.275
	Married/partner	36	21.7	130	78.3	
	Widowed or divorced	1	20.0	4	80.0	
Education level	No formal education	11	50.0	11	50.0	<0.001
	Primary education graduate	28	27.7	73	72.3	
	High school graduate	4	4.9	77	95.1	
	University, college, doctorate	2	6.9	27	93.1	
Employment status in an income generating job	Employee	11	9.2	108	90.8	<0.001
	Not working	31	38.3	50	61.7	
	Student	3	9.1	30	90.9	
Chronic disease	There is	40	45.5	48	54.5	<0.001
	No	5	3.4	140	96.6	
Socio economic status	Low	33	28.9	81	71.1	0.001
	Middle	11	10.3	96	89.7	
	High	1	8.3	11	91.7	
Smoking	Smokes cigarettes	13	27.1	35	72.9	0.126
	Does not smoke or quit smoking	32	17.3	153	82.7	
Coffee and dyspepsia	Occasional coffee consumption	18	10.7	150	89.3	<0.001
	Drinks coffee daily	21	80.8	5	19.2	
	Doesn't drink coffee	6	15.4	33	84.6	
Tea and dyspepsia	Does not consume tea	0	0.0	11	100	0.001
	Sometimes consumes tea	2	3.8	51	96.2	
	Consumes tea regularly	43	25.4	126	74.6	
Alcohol and dyspepsia	Drinking alcohol	1	14.3	6	85.7	1.000
	Does not drink alcohol	44	19.5	182	80.5	
Eating speed and dyspepsia	Eating quickly	15	48.4	16	51.6	<0.001
	Eating at normal speed	26	19.0	111	81.0	
	Slow eater	4	6.3	59	93.7	
Anxiety level and dyspepsia	Anxiety level normal and below	15	8.4	163	91.6	<0.001
	Anxiety level above normal	30	54.5	25	45.5	

*Body mass index was analyzed both as a categorical variable and as a dichotomous variable (BMI ≥30 vs. <30) for univariate analysis, #: Chi-square test, BMI: Body mass index

Multivariate Analysis

In multivariate logistic regression analysis, increasing age (OR: 1.06 per year; 95% CI: 1.02-1.10; $p=0.001$) and high anxiety level (OR: 14.30; 95% CI: 5.93-34.45; $p<0.001$) remained independently associated with dyspepsia after adjustment for potential confounders. Female sex, obesity, and low socioeconomic status were not independently associated with dyspepsia in the adjusted model (Table 2).

Symptom Distribution

Among individuals diagnosed with dyspepsia, postprandial fullness was the most frequently reported symptom (51.1%), followed by postprandial fullness combined with early satiety (31.1%). Other symptom combinations were observed less frequently (Table 3).

Prescription Analysis

During the one-month prescription review period, 487 prescriptions and 2,578 medication boxes were issued. Dyspepsia-related medications accounted for 13.0% of all prescribed medication boxes, and 20.5% of prescriptions included a diagnosis of dyspepsia. Among these prescriptions, 82% contained proton pump inhibitors.

DISCUSSION

Dyspepsia is a common gastrointestinal disorder worldwide, with reported prevalence rates ranging from 10% to 40% in Western European countries and from 5% to 30% in Asian populations. The global pooled prevalence has been estimated at approximately 21.8%, while substantial

regional variation has been emphasized in recent Rome-based systematic reviews and meta-analyses (3,4). These differences are mainly related to variations in diagnostic criteria, study populations, and healthcare settings (1,4,8).

In a comprehensive review by Ford et al. (1), the prevalence of uninvestigated dyspepsia varied substantially across regions, with the lowest prevalence reported in Central America (7%) and the highest in South America (37.7%). The authors highlighted that heterogeneity in diagnostic definitions, particularly the use of different Rome criteria, contributed significantly to these differences. In Türkiye, epidemiological data on dyspepsia remain limited. Özmen's (11) study conducted in Bolu using Rome III criteria reported a dyspepsia prevalence of 18.6% among individuals aged 20-70 years. Using Rome IV criteria and a population-based, age-stratified sampling approach, our study identified a dyspepsia prevalence of 19.3%, which is comparable to both national and international findings (4,7,11).

Increasing age has been frequently reported as a factor associated with dyspepsia. Previous studies have demonstrated peak prevalence rates in individuals aged 45-54 years in Canada, 41-50 years in China, and 50-59 years in Japan (18). Similarly, studies from Saudi Arabia and multinational cohorts from low- and middle-income countries have reported higher dyspepsia prevalence with advancing age (9,19). In the present study, dyspepsia prevalence increased with advancing age, and age remained independently associated with dyspepsia in multivariate analysis.

Table 2. Factors independently associated with dyspepsia according to multivariate logistic regression analysis

Variable	OR	95% CI	p-value
Age (per year)	1.06	1.02-1.10	0.001
Female sex	2.01	0.74-5.47	0.170
Obesity (BMI $\geq$ 30)	1.49	0.60-3.66	0.388
High anxiety level	14.30	5.93-34.45	<0.001
Low socioeconomic status	2.38	0.99-5.74	0.053

BMI: Body mass index, OR: Odds ratio, CI: Confidence interval

Table 3. Distribution of dyspeptic symptoms according to Rome IV criteria*

Symptom pattern	n	%
Postprandial fullness	23	51.1
Postprandial fullness+early satiety	14	31.1
Postprandial fullness+epigastric pain	3	6.7
All three symptoms	3	6.7
Epigastric pain only	1	2.2
Epigastric pain+early satiety	1	2.2

*Symptoms were assessed using a Rome IV-based structured questionnaire. Percentages may not total 100% due to rounding

Sex-related differences in dyspepsia prevalence have also been described in the literature. A large meta-analysis reported higher dyspepsia prevalence in females compared to males (1). Additionally, a large multinational study involving more than 250,000 participants found that women were more likely to experience FD than men (9). In this study, dyspepsia prevalence was higher among women. However, sex did not remain independently associated with dyspepsia after adjustment in multivariate analysis.

Similar findings have been reported in previous studies, and no significant association was observed between dyspepsia and marital status in our study (9,19,20). In contrast, BMI showed a clear association with dyspepsia prevalence. Several studies have reported higher rates of dyspepsia and other functional gastrointestinal disorders among individuals with obesity (10,21-24). Similarly, in our study, dyspepsia prevalence increased with higher BMI and was highest among obese participants. The relatively small number of obese participants should be considered when interpreting these findings.

Lower educational attainment has been reported to be associated with higher dyspepsia prevalence in population-based studies. In univariate analyses, our findings demonstrated an increase in dyspepsia prevalence as educational level decreased. Likewise, lower socioeconomic status has been associated with increased dyspepsia prevalence in international studies (4,9,25), and a similar pattern was observed in our study.

Lifestyle-related factors have also been examined in relation to dyspepsia. Smoking has been identified as a potential risk factor, particularly in relation to postprandial distress syndrome (26). While smoking status itself was not significantly associated with dyspepsia in our study, dyspepsia prevalence increased with the number of cigarettes smoked per day. In addition, faster eating speed and higher coffee and tea consumption were associated with increased dyspepsia prevalence, consistent with previous reports (27,28).

Psychological factors have been consistently associated with FD in previous studies. A recent meta-analysis reported a strong association between gastrointestinal symptoms and anxiety (29,30). In our study, dyspepsia prevalence was markedly higher among individuals with elevated anxiety scores, and high anxiety level remained independently associated with dyspepsia in multivariate analysis.

The frequent use of proton pump inhibitors is consistent with evidence supporting their efficacy in FD (15,16).

Similar concerns regarding proton pump inhibitor prescribing in primary care have been reported in studies from the United Kingdom, particularly England (14).

While proton pump inhibitors are widely recommended for dyspepsia management in international guidelines (12,16), these findings underscore the need for evaluating prescribing practices in primary care settings (13). In this context, the coexistence of prevalence findings and prescription data may provide a more comprehensive perspective on the burden and management of dyspepsia in primary care.

The findings of this study are generally consistent with previously reported national and international data and demonstrate that dyspepsia is associated with multiple demographic, clinical, and lifestyle-related factors in a primary care population. These findings should be interpreted in light of the cross-sectional design of the study and the reliance on self-reported data.

Study Limitations

This study has several limitations. First, it was conducted in a single primary care center, which may limit the generalizability of the findings to other regions. Second, the cross-sectional design precludes causal inferences between dyspepsia and associated factors. Third, dyspeptic symptoms and lifestyle characteristics were assessed using self-reported data, which may be subject to recall bias. In addition, prescription data were obtained from a different patient population within the same primary care setting, which may limit the direct interpretation of prescription patterns in relation to prevalence findings. Furthermore, the relatively short prescription review period reflects a pragmatic snapshot of routine primary care practice rather than longitudinal prescribing trends. Despite these limitations, the use of Rome IV diagnostic criteria and the integration of epidemiological, psychosocial, and prescribing data provide valuable real-world insights into dyspepsia in a primary care context.

CONCLUSION

In this primary care-based study, the prevalence of dyspepsia among individuals aged 15-70 years was 19.3%. Advancing age and high anxiety level were identified as independent factors associated with dyspepsia, while several sociodemographic and lifestyle-related variables showed associations in univariate analyses. These findings support the multifactorial nature of dyspepsia and indicate the need to consider both clinical and psychosocial factors in patient evaluation in primary care settings.

Dyspepsia is a common and clinically relevant condition that negatively affects quality of life and is frequently encountered in primary care practice. As first-contact and continuing care providers, primary care physicians are well positioned to identify individuals at risk for dyspepsia and to support individualized, evidence-based management strategies.

ETHICS

Ethics Committee Approval: Ethical approval was obtained from the University of Health Sciences Türkiye, İstanbul Haseki Training and Research Hospital Clinical Research Ethics Committee (approval no: 2020-124, date: 24.06.2020).

Informed Consent: Written informed consent was obtained from participants aged 18 years and older and from the parents or legal guardians of participants aged 15-17 years.

FOOTNOTES

Authorship Contributions

Surgical and Medical Practices: N.A., M.R.D., Ö.P., S.G., Concept: N.A., M.R.D., Ö.P., S.G., Design: N.A., M.R.D., Ö.P., Data Collection or Processing: N.A., M.R.D., Ö.P., S.G., Analysis or Interpretation: N.A., M.R.D., Ö.P., Literature Search: N.A., M.R.D., Ö.P., S.G., Writing: N.A., M.R.D., Ö.P., S.G.

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REFERENCES

- Ford AC, Mahadeva S, Carbone MF, Lacy BE, Talley NJ. Functional dyspepsia. *Lancet*. 2020;396:1689-702.
- Black CJ, Houghton LA, Ford AC. Insights into the evaluation and management of dyspepsia: recent developments and new guidelines. *Ther Adv Gastroenterol*. 2018;11:1756284818805597.
- Sperber AD, Bangdiwala SI, Drossman DA, Ghoshal UC, Simren M, Tack J, et al. Worldwide prevalence and burden of functional gastrointestinal disorders, results of Rome Foundation Global Study. *Gastroenterology*. 2021;160:99-114.e3.
- Lee K, Kwon CI, Yeniova AO, Koyanagi A, Jacob L, Smith L, et al. Global prevalence of functional dyspepsia according to Rome criteria, 1990-2020: a systematic review and meta-analysis. *Sci Rep*. 2024;14:4172.
- Kovács DB, Szekely A, Hubai AG, Palsson O. Prevalence, epidemiology and associated healthcare burden of Rome IV irritable bowel syndrome and functional dyspepsia in the adult population of Gibraltar. *BMJ Open Gastroenterol*. 2022;9:e000979.
- Nasseri-Moghaddam S, Mousavian AH, Kasaeian A, Kanno T, Yuan Y, Ford AC, et al. What is the prevalence of clinically significant endoscopic findings in subjects with dyspepsia? Updated systematic review and meta-analysis. *Clin Gastroenterol Hepatol*. 2023;21:1739-49.e2.
- Aziz I, Palsson OS, Törnblom H, Sperber AD, Whitehead WE, Simrén M. Epidemiology, clinical characteristics, and associations for symptom-based Rome IV functional dyspepsia in adults in the USA, Canada, and the UK: a cross-sectional population-based study. *Lancet Gastroenterol Hepatol*. 2018;3:252-62.
- Oshima T. Functional dyspepsia: current understanding and future perspective. *Digestion*. 2024;105:26-33.
- Arnaout AY, Alhejazi TJ, Nerabani Y, Hamdan O, Arnaout K, Arnaout I, et al.; PRIBS Study Team. The prevalence and risk factors of functional dyspepsia among adults in low- and middle-income countries: an international cross-sectional study. *Medicine (Baltimore)*. 2023;102:e35437.
- Sezgin O, Akpınar H, Özer B, Törüner M, Bal K, Bor S. Population-based assessment of gastrointestinal symptoms and diseases: Cappadocia cohort, Turkey. *Turk J Gastroenterol*. 2019;30:1009-20.
- Özmen E. Bolu il merkezinde araştırılmamış dispepsi prevalansı [medical specialty thesis]. Bolu: Abant İzzet Baysal Üniversitesi; 2014. Available from: <https://acikerisim.ibu.edu.tr/items/0f92e20b-6027-4578-b6d5-8474a41ddcb3>
- Black CJ, Paine PA, Agrawal A, Aziz I, Eugenicos MP, Houghton LA, et al. British Society of Gastroenterology guidelines on the management of functional dyspepsia. *Gut*. 2022;71:1697-723.
- Moayyedi P, Lacy BE, Andrews CN, Enns RA, Howden CW, Vakil N. ACG and CAG Clinical guideline: management of dyspepsia. *Am J Gastroenterol*. 2017;112:988-1013. Erratum in: *Am J Gastroenterol*. 2017;112:1484.
- Plehhova K, Wray J, Aluko P, Sutton S, McArdle J, Dawson A, et al. Prescribing practices for proton pump inhibitors among primary care physicians in England: an evaluation. *BJGP Open*. 2025;9:BJGPO.2024.0059.
- Pinto-Sanchez MI, Yuan Y, Hassan A, Bercik P, Moayyedi P. Proton pump inhibitors for functional dyspepsia. *Cochrane Database Syst Rev*. 2017;11:CD011194.
- Eusebi LH, Black CJ, Howden CW, Ford AC. Effectiveness of management strategies for uninvestigated dyspepsia: systematic review and network meta-analysis. *BMJ*. 2019;367:l6483.
- Beck AT, Epstein N, Brown G, Steer RA. An inventory for measuring clinical anxiety: psychometric properties. *J Consult Clin Psychol*. 1988;56:893-7.
- Walker MM, Talley NJ. Functional dyspepsia in the elderly. *Curr Gastroenterol Rep*. 2019;21:54.
- Alwhaibi A, Alghadeer S, Bablghaith S, Wajid S, Alrabiah Z, Alhossan A, et al. Prevalence and severity of dyspepsia in Saudi Arabia: a survey-based study. *Saudi Pharm J*. 2020;28:1062-7.
- Nakov R, Dimitrova-Yurukova D, Snegarova V, Uzunova M, Lyutakov I, Ivanova M, et al. Prevalence of irritable bowel syndrome, functional dyspepsia and their overlap in Bulgaria: a population-based study. *J Gastrointest Liver Dis*. 2020;29:329-38.
- Göktaş Z, Köklü S, Dikmen D, Öztürk Ö, Yılmaz B, Asil M, et al. Nutritional habits in functional dyspepsia and its subgroups: a comparative study. *Scand J Gastroenterol*. 2016;51:903-7.
- Ghusn W, Cifuentes L, Campos A, Sacoto D, De La Rosa A, Feris F, et al. Association between food intake and gastrointestinal symptoms in patients with obesity. *Gastro Hep Adv*. 2023;2:121-8.
- Alkhowaiter S, Alotaibi RM, Alwehaibi KK, Aljohany A, Alruhaimi B, Almasaad M, et al. The effect of body mass index on the prevalence of gastrointestinal symptoms among a Saudi population. *Cureus*. 2021;13:e17751.
- Ahmed S Sr, Shaikh H, Jamil S, Ali H, Abbasi M Jr. Impact of body mass index on gastrointestinal disorders: a cross-sectional study in a Pakistani population. *Cureus*. 2020;12:e7722.
- Hu N, Wang K, Zhang L, Liu ZJ, Jin Z, Cui RL, et al. Epidemiological and clinical features of functional dyspepsia in a region with a high incidence of esophageal cancer in China. *Chin Med J (Engl)*. 2021;134:1422-30.

26. Talley NJ, Powell N, Walker MM, Jones MP, Ronkainen J, Forsberg A, et al. Role of smoking in functional dyspepsia and irritable bowel syndrome: three random population-based studies. *Aliment Pharmacol Ther.* 2021;54:32-42.
27. Gao X, Liu N, Hao YJ, Zhang XH, Yang Q, Jiang XS, et al. [Prevalence survey of functional dyspepsia and irritable bowel syndrome in Chinese college students based on Rome IV diagnostic criteria]. *Sichuan Da Xue Xue Bao Yi Xue Ban.* 2023;54:574-8. Chinese.
28. Vakhshuury M, Khoshdel A. The relation between dietary patterns and functional gastrointestinal disorders among Iranian military men. *Adv Biomed Res.* 2019;8:2.
29. Overs J, Morgan S, Apputhurai P, Tuck C, Knowles SR. Comparing the prevalence and association between anxiety, depression and gastrointestinal symptoms in gastroparesis versus functional dyspepsia: a systematic review and meta-analysis. *J Psychosom Res.* 2024;183:111834.
30. Esterita T, Dewi S, Suryatenggara FG, Glenardi G. Association of functional dyspepsia with depression and anxiety: a systematic review. *J Gastrointestin Liver Dis.* 2021;30:259-66.