ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΡΗΤΗΣ

ΤΜΗΜΑ ΙΑΤΡΙΚΗΣ

ΔΙΔΑΚΤΟΡΙΚΗ ΔΙΑΤΡΙΒΗ

Α.Π.:259

ΜΕΛΕΤΗ ΤΩΝ ΛΕΙΤΟΥΡΓΙΚΩΝ ΔΙΑΤΑΡΑΧΩΝ ΤΟΥ ΠΕΠΤΙΚΟΥ ΣΥΣΤΗΜΑΤΟΣ ΣΤΗΝ ΠΡΩΤΟΒΑΘΜΙΑ ΦΡΟΝΤΙΔΑ ΥΓΕΙΑΣ

Φωτεινή Αναστασίου

Κλινική Κοινωνικής και Οικογενειακής Ιατρικής
Τομέας Κοινωνικής Ιατρικής
Ιατρική Σχολή
Πανεπιστήμιο Κρήτης

Ηράκλειο 2008

ΤΟΜΕΑΣ ΚΟΙΝΩΝΙΚΗΣ ΙΑΤΡΙΚΗΣ

ΚΛΙΝΙΚΗ ΚΟΙΝΩΝΙΚΗΣ ΚΑΙ ΟΙΚΟΓΕΝΕΙΑΚΗΣ ΙΑΤΡΙΚΗΣ

ΔΙΔΑΚΤΟΡΙΚΗ ΔΙΑΤΡΙΒΗ

ΜΕΛΕΤΗ ΤΩΝ ΛΕΙΤΟΥΡΓΙΚΩΝ ΔΙΑΤΑΡΑΧΩΝ ΤΟΥ ΠΕΠΤΙΚΟΥ ΣΥΣΤΗΜΑΤΟΣ ΣΤΗΝ ΠΡΩΤΟΒΑΘΜΙΑ ΦΡΟΝΤΙΔΑ ΥΓΕΙΑΣ

Φωτεινή Αναστασίου
Ιατρός Γενικής Ιατρικής

Ηράκλειο 2008

Επιβλέπων: **1. Χρήστος Λιονής,**
Αναπληρωτής Καθηγητής, Τμήμα Ιατρικής, Πανεπιστήμιο Κρήτης

Συνεπιβλέποντες: **2. Ηλίας Κουρούμαλης,** Καθηγητής, Τμήμα Ιατρικής, Πανεπιστήμιο Κρήτης

3. Ιωάννης Μουζάς,
Επίκουρος Καθηγητής,
Τμήμα Ιατρικής, Πανεπιστήμιο Κρήτης

ΕΠΤΑΜΕΛΗΣ ΕΠΙΤΡΟΠΗ

1. Χρήστος Λιονής, Αναπληρωτής Καθηγητής (επιβλέπων)

2. Ηλίας Κουρούμαλης, Καθηγητής (συνεπιβλέπων)

3. Ιωάννης Μουζάς, Επίκουρος Καθηγητής (συνεπιβλέπων)

4. Εμμανουήλ Κογεβίνας, Καθηγητής

5. Δημήτριος Μπούμπας , Καθηγητής

6. Δημήτριος Τσιφτσής, Καθηγητής

7. Ιωάννα Μοσχανδρέα, Επίκουρη Καθηγήτρια

στους γονείς μου Σπύρο και Ελένη,
στον αδερφό μου Γιάννη και την οικογένεια του,
στο σύζυγο μου Γιώργο,

στο μέντορα μου Donald W. Knight*

*Passed away in April 12th 2008, Australia

Περιεχόμενα

Rural and Remote Health
FRAME
ARHEN
ISSN 1445-6354
The International Electronic Journal of Rural and Remote Health Research, Education, Practice and Policy

ORIGINAL RESEARCH

Measuring the frequency of functional gastrointestinal disorders in rural Crete: a need for improving primary care physicians' diagnostic skills

C Lionis[1], A Olsen-Faresjo[2], F Anastasiou[1], M Wallander[3], S Johansson[4], T Faresjo[2]

[1]*Clinic of Social and Family Medicine, Heraklion, Crete, Greece*
[2]*Department of Health and Society, Faculty of Health Sciences, University of Linkoping, Sweden*
[3]*Department of Public Health and Caring Science, Uppsala University, Uppsala, Sweden*
[4]*Cardiovascular Institute, University of Gothenburg, Sweden*

Submitted: *15 February 2005;* ***Revised:*** *3 May 2005;* ***Published:*** *17 August 2005*

Lionis C, Olsen-Faresjo A, Anastasiou F, Wallander M, Johansson S, Faresjo T
Measuring the frequency of functional gastrointestinal disorders in rural Crete: a need for improving primary care physicians' diagnostic skills
Rural and Remote Health **5: 409. (Online), 2005**

Available from: http://rrh.deakin.edu.au

ABSTRACT

Introduction: Studies of the frequency and aetiology of functional gastrointestinal disorders in the general population have received increasing interest over the past few years; the field seems to be neglected in Southern Europe. The aim of this study was to report on the frequency of functional dyspepsia (FD), irritable bowel syndrome (IBS) and gastroenteritis within the primary care setting, to provide some information on the extent to which the recorded diagnoses in the physicians' notes fulfil existing diagnostic criteria.

Method: A retrospective study was used, where all new cases of these diseases at five primary health care centres in three rural and two semi-rural areas of Crete were identified by scrutinising medical records from 280 000 consecutive visits during a 4 year period. The occurrence rate per 1000 person-years were calculated for the three conditions. We also checked the extent to which the Talley's criteria for FD and Rome II diagnostic criteria for IBS were followed.

Results: Gastroenteritis was revealed to be a quite frequent health problem among the rural population on Crete, while the occurrence rates for other problems, such as dyspepsia and IBS, were found to be lower than expected. IBS was over-represented among women compared with men, OR 2.04 (CI 1.39-3.00). In many cases a diagnosis of FD, IBS or gastroenteritis was evident to

the research team on the basis of findings recorded in the notes, but the diagnosis was not recorded by the clinician at the time of consultation.

Conclusions: This study yielded two key messages: the first that gastroenteritis is still a frequent health problem, and the second that primary care physicians in rural Crete seem to fail in adequately diagnosing FD and IBS and need further training.

Key words: Crete, gastrointestinal disorders, medical records, primary care.

Introduction

Little is known about the frequency and aetiology of functional gastrointestinal (GI) disorders in the general population. The two most common functional gastrointestinal disorders in the population are functional dyspepsia and irritable colon. Non-ulcer dyspepsia, or the more recent term functional dyspepsia (FD), is used for persistent upper GI symptoms in the absence of a known organic disease. Irritable bowel syndrome (IBS) is characterised by persistent or recurrent abdominal pain related to defecation or to chronic disturbance of bowel habits in the absence of demonstrable organic disease. IBS tends to be a chronic recurring disorder with variable illness episodes that may continue for many years[1]. Despite the fact that this gastrointestinal condition is quite commonly diagnosed in primary care and by gastrointestinal specialists, there is limited data on the rates of healthcare utilization by patients with IBS[2].

Although this subject has received much attention during the past few years in European literature[3,4], it is still neglected in Southern Europe, where research in this area is scarce[5]. For this reason, the current study of the burden of functional gastrointestinal disorders (FD and IBS) and gastroenteritis in the primary care setting on rural Crete was undertaken. In addition, an aim was to explore whether the disorders' diagnoses are consistent with those reported in other European and international studies. The aim of this article was to report on frequencies of FD, IBS and gastroenteritis within the primary-care setting, and to provide some information on the extent to which the recorded diagnoses in physicians' notes fulfil the existing diagnostic criteria.

Method

Setting and study design

A retrospective study was designed by identifying new cases of functional gastrointestinal disorders. Our study was carried out in rural Crete (which is served by 15 primary health care [PHC] centres and two small community hospitals) based on a patient-records system (Fig 1). Five of these PHC were selected, three located in remote rural areas: Spili (8962 population), Anogia (8204 population) and Perama (11 453 population); and two in semi-rural areas: Neapoli (7183 population) and Archanes (4279 population). These PHC centres covered a total population of 40 081, of which 32 117 persons were aged 15 years and over (Table 1).

Data collection

All available electronic or paper medical records in the studied locations from the period March 1996 to February 2000 (in total 280 000 visits) were reviewed retrospectively for all diagnoses, medical complaints and symptoms related to the GI tract, as noted by the local physician. All records were reviewed by one medical doctor from the research team and validated against pre-defined criteria for gastroenteritis, FD and IBS. The review was completed within 10 months. Information on demographics, co-morbidity and medication was retrieved from the medical records by means of a standardised registration form, and subsequently stored in a research database.

Figure 1: Map of the study area, Crete.

Table 1: Descriptive epidemiology of the reference population

Age-groups (years)	Total *n* (%)
15–24	5592 (17.4)
25–39	6495 (20.2)
40–54	6304 (19.6)
55–64	5137 (16.0)
65–79	6297 (19.6)
≥80	2292 (7.1)
Total	32 117 (100)
Sex	
Female	15 927 (50.4)
Male	16 190 (49.6)
Total	32 117 (100)

Gastroenteritis was defined as acute diarrhoea, mild to severe with or without vomiting and with or without fever. Information relevant to the findings of recent history (overseas travel, hiking or camping, shellfish consumption, childcare etc) and faecal and blood examination findings consistent with viral or infectious gastroenteritis (blood and/or leukocytes in stools or isolation of bacteria in stools culture was supportive of this diagnosis). We also included all cases with the diagnoses 'diarrhoea and fever,' 'diarrhoeic syndrome,' and 'acute diarrhoea.' all cases that met the criteria defined by Talley (any persistent or recurrent pain or discomfort centred in the upper abdomen, where evidence of organic disease likely to explain the symptoms is absent, including an upper endoscopy)[6] for FD, together with those diagnosed as 'epigastralgia,' 'pain in the upper abdomen' or 'dyspeptic disorders' were included in the dyspepsia group. Similarly, cases that met the Rome II criteria for IBS (abdominal pain or discomfort relieved by defecation or associated with change in frequency of stool or in the form of stool)[7], or were diagnosed by the local physician as 'spastic colon' or 'spastic colitis', were included in the IBS group. Where the physician recorded a diagnosis of gastroenteritis, dyspepsia and IBS, it was included in the study, irrespective of whether all defined diagnostic criteria were met or not.

In total, 280 000 consecutive visit notes were reviewed. During the 4 year study period, patients with a prior diagnosis of cancer, alcoholism, pancreatitis, peptic ulcer, gastro-oesophageal disease, inflammatory bowel disease and colecystitis, in addition to patients with a previously known use of antacids, antispasmolytics and acid suppressing drugs were excluded, together with pregnant women. Patients who were not inhabitants of the areas of responsibility of the

5 PHC centres were also excluded from the study. In total, 1400 cases fulfilled one or more of the exclusion criteria and were excluded. Information regarding age was lacking for 7.5% (n = 123) of the patients identified (88 patients with gastroenteritis, 29 patients with dyspepsia and 6 patients with IBS).

The study was approved by the Ethical Committee at the University Hospital of Heraklion, Crete.

Statistical analysis

The total number of person-years (aged 15 years and over) in the 4 year study period was 128 468. Relative risks were calculated on the crude data. In the calculation of occurrence rates, cases with missing information regarding age were distributed proportionally into the age-groups (15-24, 25-39, 40-54, 55-64, 65-79, 80 years and over) according to the age-distribution for each disease.

Rates for the cases in the study were calculated as occurrence rates per 1000 person-years. Odds ratios (OR) and 95% confidence intervals (CI) between men and women were also calculated.

Results

The total number of the identified GI cases was 1670 with 25 out of these having more than one of the three diagnoses registered during the study period. The number aged more than 14 years old was 1389. The most common diagnosis in all GI cases was gastroenteritis, accounting for 1130 cases (68.7%), followed by dyspepsia with 394 cases (23.9%), and IBS with 146 cases (8.9%). Among the total number of IBS cases, there were 12 cases that also had a diagnosis of gastroenteritis, which constitute 8.2% of the total IBS diagnosis group. However, four of these 12 IBS cases had a documented history of IBS before they received the gastroenteritis diagnosis.

No case of celiac disease was observed in this population. There was a slight upward trend over time for gastroenteritis cases, while the annual occurrence rates of dyspepsia and IBS cases was relatively stable during the 4 year study period (Figure 2).

The vast majority of all the GI cases found were seen and confirmed by the GP of the PHC centre. Two percent of the gastroenteritis and dyspepsia cases, and none of the IBS cases were confirmed by a GP and also referred to a specialist. Four percent of the IBS cases and none of the dyspepsia or gastroenteritis cases were confirmed solely by a gastroenterologist.

Four hundred and eighty two (42.6%) of all the gastroenteritis cases were diagnosed by a local physician. The remaining 649 cases (57.4%) were diagnosed by the research team physician on the basis of symptoms noted in the medical record (eg acute, mild or severe diarrhoea, with or without vomiting, and with or without fever). In 1008 (89.2%) of the defined cases, one or several symptoms of gastroenteritis were recorded in the medical records. Results from stool culture were only available for less than 3% of the cases. Dyspepsia was diagnosed by the local physician in 70 (17.8%) of the total study cases and 324 (82.2%) were diagnosed by the research physician on the basis of relevant symptoms recorded in the medical record. The most common symptoms of dyspepsia (persistent or recurrent pain or discomfort centred in the upper abdomen) were present in 352 (89.3%) of the cases. Of all the IBS cases, 119 (81.5%) were labelled by the local physician and 27 (18.5%) were diagnosed by the research team. The discrepancy between 'note recorded diagnosis' and 'retrospective researcher diagnosis' is illustrated (Table 2).

The distribution of the three selected diagnoses was quite similar among all the centres. However, for one of the centres (Anogia) the proportion of patients with an IBS diagnosis was lower (p = 0.05) than among the others.

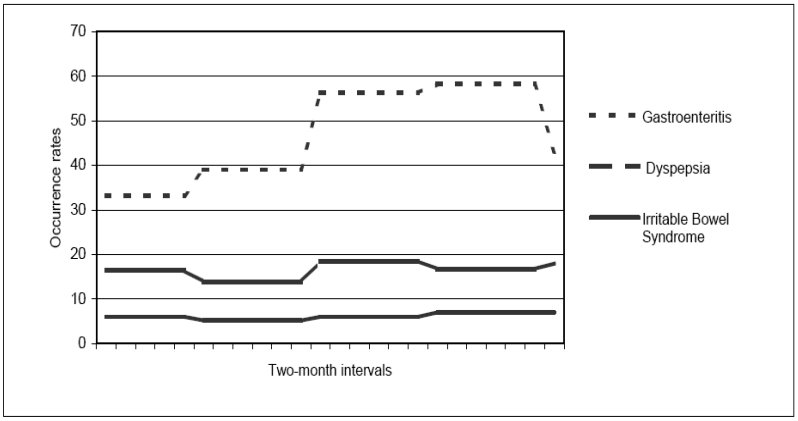


Figure 2: Number of new cases over the study period divided into 2 month periods.

Table 2: Note-recorded diagnosis versus retrospective researcher diagnosis on functional gastrointestinal disorders in rural Crete

Diagnosis	Note recorded diagnosis *n* (%)	Retrospective researcher diagnosis *n* (%)
Gastroenteritis	482 (42.6)	649 (57.6)
Dyspepsia	70 (18)	323 (82)
IBS	119 (81.5)	27 (18.5)

The occurrence rates of gastrointestinal disorders for those over the age of 15 years and odds ratio between men and women are presented (Tables 3-5). The observed total occurrence rate for gastroenteritis was 7.1 per 1000 person-years in the studied population. Gastroenteritis tended to be somewhat higher among the younger age groups and among those over the age of 65 years. There was no sex difference seen for gastroenteritis ($p = 0.39$).

Table 3: Occurrence rates of gastroenteritis per 1000 person-years by gender and for those over the age of 14 years

Gastroenteritis Occurrence rate per 1000 person-years						
Age groups (years)	**Female (*n* = 467)**		**Male (*n* = 448)**		**Total (*n* = 915)**	
	n	**Rate**	***n***	**Rate**	***n***	**Rate**
15 – 24	87	8.1	90	7.6	177	7.9
25 – 39	91	7.6	96	6.8	187	7.2
40 – 54	67	5.4	62	4.9	129	5.1
55 – 64	50	4.7	52	5.3	102	5.0
65 – 79	104	7.5	106	9.3	210	8.3
≥80	68	13.3	42	10.4	110	12.0
Observed		7.2		7.0		7.1
Odds Ratio (OR) Women/men						1.08
95 % CI						0.90 - 1.29

Table 4: Occurrence rates of dyspepsia per 1000 person-years by gender and for those over the age of 14 years

Dyspepsia Occurrence rate per 1000 person-years						
Age groups (years)	**Female (*n* = 186)**		**Male (*n* = 164)**		**Total (*n* = 350)**	
	n	**Rate**	***n***	**Rate**	***n***	**Rate**
15 – 24	25	2.3	20	1.7	45	2.0
25 – 39	23	1.9	39	2.8	62	2.4
40 – 54	26	2.1	27	2.1	53	2.1
55 – 64	25	2.3	14	1.4	39	1.9
65 – 79	62	4.5	46	4.0	108	4.3
≥ 80	25	4.9	18	4.5	43	4.7
Observed		2.9		2.6		2.7
Odds Ratio (OR) Women/men						1.16
95 % CI						0.92 - 1.47

Table 5: Occurrence rates of irritable bowel syndrome per 1000 person-years by gender and for those over the age of 14 years

Irritable Bowel Syndrome Occurrence rate per 1000 person-years						
Age groups (years)	Female (n = 82)		Male (n = 42)		Total (n = 124)	
	n	Rate	n	Rate	n	Rate
15 – 24	8	0.7	4	0.3	12	0.5
25 – 39	5	0.4	9	0.6	14	0.5
40 – 54	17	1.4	8	0.6	25	1.0
55 – 64	18	1.7	5	0.5	23	1.1
65 – 79	27	2.0	10	0.9	37	1.5
≥ 80	7	1.4	6	1.5	13	1.4
Observed		1.3		0.7		1.0
Odds Ratio (OR) Women/men						2.04
95 % CI						1.39 - 3.00

The observed total occurrence rate for dyspepsia was 2.7 per 1000 person-years in the studied population. An increased rate of dyspepsia was seen among those over the age of 65 years. Men in the age group of 25-39 years had a higher rate of dyspepsia compared with women in the same age-group. A similar but opposite trend was seen among women in the age-group of 55-64 years. In this population, women tended to have a slightly higher, but not statistically significant higher, rate of dyspepsia than men (p = 0.20).

In this population, the observed total occurrence rate of IBS was 1.0 per 1000 person-years. IBS increased with advancing age. Approximately 40% of all the IBS cases occurred among those over the age of 65 years. Women had a higher occurrence rate of IBS with OR = 2.04 (CI 1.39–3.00; p = 0.0002).

Discussion

This study resulted in a database for the rural Cretan setting where a computerized medical system is still in progress. All consultations during the 4 year period, hard copy or computerized, were registered in the database. Available sources of information were searched, including health cards and handwritten records that were still in use in most health centres.

Several methodological flaws obstructed a correct estimate of occurrence rates of FD, IBS and gastroenteritis. The diagnoses of these GI diseases were made retrospectively on the basis of clinical records obtained by physicians. There was a great variation in diagnoses used by the local physicians and scant information on the patients' symptoms and type of treatment. Although this variety of diagnoses and scant information available in medical records could be explained by the high number of non-specialized young physicians, they have grossly limited the outcome of the study and raised some doubts about the validity of the data source. We can also speculate that the lack of use of specific diagnostic criteria by the local physicians could explain the variety of labels used for functional gastrointestinal disorders, although such a statement is not validated by the findings of this study. However, this is not unique for Cretan physicians. In a questionnaire study from the UK it was found that only 12% of GPs had heard of the Rome Criteria II for diagnosis of functional gastrointestinal disorders and only 3% used them[8]. Despite the GPs unfamiliarity with diagnostic criteria for IBS,

their diagnoses of the condition was in close agreement with that of a specialist[9,10]. A Norwegian study among GPs also revealed poor use of the Rome Criteria II in the diagnosis of IBS[11].

Our study was also based on available medical records; a population-based survey may have provided different figures. The term FD might have been misleading because no endoscopy investigations were performed. For that reason, the patients identified with upper abdominal problems were classified as dyspepsia cases, taking into account that ulcer and gastroesophageal reflux cases could be included. It was uncertain to what extent endoscopy was used in diagnosing of FD and IBS but the impression was that it played a minor role.

Although we made a 4 year retrospective review of all the medical records of the PHC centres in the defined areas, it was difficult to classify the cases as prevalent or incidental. This problem has also been found in other studies throughout the primary care setting[12]. Therefore, we chose to classify the cases in this report as occurrence rates. The cases documented are regarded as new cases, but some might have had a previous history of the disease.

One of the main findings of this study is the high occurrence of gastroenteritis cases and the relatively low occurrence of dyspepsia and IBS in comparison with other studies. Prevalence studies of functional gastrointestinal disorders in Western societies have shown that between 8%-23% of adults have IBS or other functional gastrointestinal symptoms, and that approximately 60%-70% of these are women[4,13]. The number of IBS patients in our study was small (5.5%). Some studies have reported that only 25%-60% of individuals suffering from IBS symptoms see a physician for their illness[2]. Studies of prevalence rates of these diseases in the general population based on postal questionnaires and surveys are available in several countries[4,13], while studies of incidence rates are quite rare[3,14].

Several factors other than the limitations mentioned may explain the low rates of IBS and dyspepsia found on Crete. It is important to note that in the Greek healthcare system, patients may contact a specialist without a referral from the primary care physician, and severe cases could be lost. In rural areas of Greece, patients who are experiencing only minor symptoms are more likely to consult the local non-specialized physician, who visits their village weekly, instead of travelling to healthcare centres or to distant urban specialized doctors. Therefore, the primary-care physicians working at the healthcare centres can only diagnose IBS when a patient, with unexplained symptoms, becomes poly-symptomatic, has experienced symptoms for a long time or has been referred by the local doctor for further investigation. This could mean that FD and IBS in the Cretan rural environment have a minor symptomatology and are, therefore, not as troublesome for the wellbeing of patients as elsewhere. Other possible explanations for the relatively low rates of dyspepsia and IBS may be found in the socio-cultural environment and the Mediterranean diet. The traditional lifestyle and the concept of stress on rural Crete differ from what is common in Northern and Western Europe today. Also, nutritional factors could be of importance, with the Mediterranean diet favourable. These aspects and their positive impact on GI problems need further investigation in future studies.

In this study, IBS was found to be more common among people aged 65 years and older. This differs from epidemiological studies reporting that the prevalence of IBS declines with age[15,16]. However, one study suggests that IBS may remain a common GI illness even in the aged[17]. Our findings require further discussion of and analysis of the prevalence and diagnosis pattern of IBS among the elderly. In the present study the occurrence of IBS was significantly higher among women than men, which is in accord with previous studies[3,18].

There is also some evidence in the literature that there is an increased risk of IBS after an episode of infective gastroenteritis[19,20]. In a study of 386 patients with a bacterial-confirmed gastroenteritis who were surveyed by a questionnaire 6 months after the infective episode, it was found that 7% had developed IBS[20]. In another study from the

5 PHC centres were also excluded from the study. In total, 1400 cases fulfilled one or more of the exclusion criteria and were excluded. Information regarding age was lacking for 7.5% (n = 123) of the patients identified (88 patients with gastroenteritis, 29 patients with dyspepsia and 6 patients with IBS).

The study was approved by the Ethical Committee at the University Hospital of Heraklion, Crete.

Statistical analysis

The total number of person-years (aged 15 years and over) in the 4 year study period was 128 468. Relative risks were calculated on the crude data. In the calculation of occurrence rates, cases with missing information regarding age were distributed proportionally into the age-groups (15-24, 25-39, 40-54, 55-64, 65-79, 80 years and over) according to the age-distribution for each disease.

Rates for the cases in the study were calculated as occurrence rates per 1000 person-years. Odds ratios (OR) and 95% confidence intervals (CI) between men and women were also calculated.

Results

The total number of the identified GI cases was 1670 with 25 out of these having more than one of the three diagnoses registered during the study period. The number aged more than 14 years old was 1389. The most common diagnosis in all GI cases was gastroenteritis, accounting for 1130 cases (68.7%), followed by dyspepsia with 394 cases (23.9%), and IBS with 146 cases (8.9%). Among the total number of IBS cases, there were 12 cases that also had a diagnosis of gastroenteritis, which constitute 8.2% of the total IBS diagnosis group. However, four of these 12 IBS cases had a documented history of IBS before they received the gastroenteritis diagnosis.

No case of celiac disease was observed in this population. There was a slight upward trend over time for gastroenteritis cases, while the annual occurrence rates of dyspepsia and IBS cases was relatively stable during the 4 year study period (Figure 2).

The vast majority of all the GI cases found were seen and confirmed by the GP of the PHC centre. Two percent of the gastroenteritis and dyspepsia cases, and none of the IBS cases were confirmed by a GP and also referred to a specialist. Four percent of the IBS cases and none of the dyspepsia or gastroenteritis cases were confirmed solely by a gastroenterologist.

Four hundred and eighty two (42.6%) of all the gastroenteritis cases were diagnosed by a local physician. The remaining 649 cases (57.4%) were diagnosed by the research team physician on the basis of symptoms noted in the medical record (eg acute, mild or severe diarrhoea, with or without vomiting, and with or without fever). In 1008 (89.2%) of the defined cases, one or several symptoms of gastroenteritis were recorded in the medical records. Results from stool culture were only available for less than 3% of the cases. Dyspepsia was diagnosed by the local physician in 70 (17.8%) of the total study cases and 324 (82.2%) were diagnosed by the research physician on the basis of relevant symptoms recorded in the medical record. The most common symptoms of dyspepsia (persistent or recurrent pain or discomfort centred in the upper abdomen) were present in 352 (89.3%) of the cases. Of all the IBS cases, 119 (81.5%) were labelled by the local physician and 27 (18.5%) were diagnosed by the research team. The discrepancy between 'note recorded diagnosis' and 'retrospective researcher diagnosis' is illustrated (Table 2).

The distribution of the three selected diagnoses was quite similar among all the centres. However, for one of the centres (Anogia) the proportion of patients with an IBS diagnosis was lower (p = 0.05) than among the others.

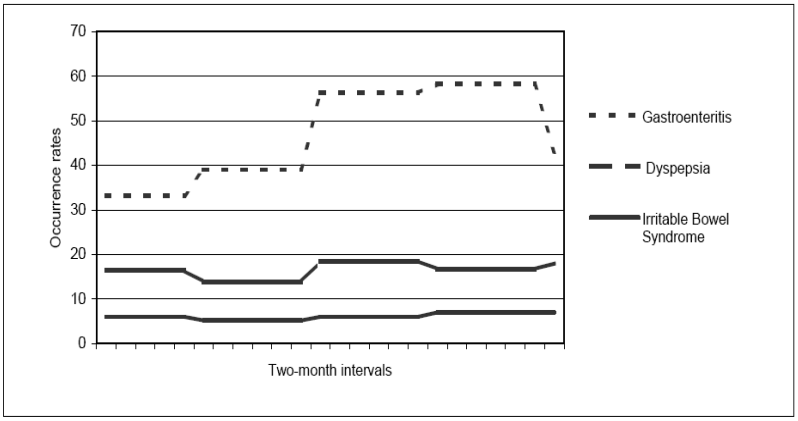


Figure 2: Number of new cases over the study period divided into 2 month periods.

Table 2: Note-recorded diagnosis versus retrospective researcher diagnosis on functional gastrointestinal disorders in rural Crete

Diagnosis	Note recorded diagnosis *n* (%)	Retrospective researcher diagnosis *n* (%)
Gastroenteritis	482 (42.6)	649 (57.6)
Dyspepsia	70 (18)	323 (82)
IBS	119 (81.5)	27 (18.5)

The occurrence rates of gastrointestinal disorders for those over the age of 15 years and odds ratio between men and women are presented (Tables 3-5). The observed total occurrence rate for gastroenteritis was 7.1 per 1000 person-years in the studied population. Gastroenteritis tended to be somewhat higher among the younger age groups and among those over the age of 65 years. There was no sex difference seen for gastroenteritis ($p = 0.39$).

Table 3: Occurrence rates of gastroenteritis per 1000 person-years by gender and for those over the age of 14 years

Gastroenteritis Occurrence rate per 1000 person-years						
Age groups (years)	**Female (*n* = 467)**		**Male (*n* = 448)**		**Total (*n* = 915)**	
	n	**Rate**	***n***	**Rate**	***n***	**Rate**
15 – 24	87	8.1	90	7.6	177	7.9
25 – 39	91	7.6	96	6.8	187	7.2
40 – 54	67	5.4	62	4.9	129	5.1
55 – 64	50	4.7	52	5.3	102	5.0
65 – 79	104	7.5	106	9.3	210	8.3
≥80	68	13.3	42	10.4	110	12.0
Observed		7.2		7.0		7.1
Odds Ratio (OR) Women/men						1.08
95 % CI						0.90 - 1.29

Table 4: Occurrence rates of dyspepsia per 1000 person-years by gender and for those over the age of 14 years

Dyspepsia Occurrence rate per 1000 person-years						
Age groups (years)	**Female (*n* = 186)**		**Male (*n* = 164)**		**Total (*n* = 350)**	
	n	**Rate**	***n***	**Rate**	***n***	**Rate**
15 – 24	25	2.3	20	1.7	45	2.0
25 – 39	23	1.9	39	2.8	62	2.4
40 – 54	26	2.1	27	2.1	53	2.1
55 – 64	25	2.3	14	1.4	39	1.9
65 – 79	62	4.5	46	4.0	108	4.3
≥ 80	25	4.9	18	4.5	43	4.7
Observed		2.9		2.6		2.7
Odds Ratio (OR) Women/men						1.16
95 % CI						0.92 - 1.47

Table 5: Occurrence rates of irritable bowel syndrome per 1000 person-years by gender and for those over the age of 14 years

Irritable Bowel Syndrome Occurrence rate per 1000 person-years						
Age groups (years)	Female (n = 82)		Male (n = 42)		Total (n = 124)	
	n	Rate	n	Rate	n	Rate
15 – 24	8	0.7	4	0.3	12	0.5
25 – 39	5	0.4	9	0.6	14	0.5
40 – 54	17	1.4	8	0.6	25	1.0
55 – 64	18	1.7	5	0.5	23	1.1
65 – 79	27	2.0	10	0.9	37	1.5
≥ 80	7	1.4	6	1.5	13	1.4
Observed		1.3		0.7		1.0
Odds Ratio (OR) Women/men						2.04
95 % CI						1.39 - 3.00

The observed total occurrence rate for dyspepsia was 2.7 per 1000 person-years in the studied population. An increased rate of dyspepsia was seen among those over the age of 65 years. Men in the age group of 25-39 years had a higher rate of dyspepsia compared with women in the same age-group. A similar but opposite trend was seen among women in the age-group of 55-64 years. In this population, women tended to have a slightly higher, but not statistically significant higher, rate of dyspepsia than men (p = 0.20).

In this population, the observed total occurrence rate of IBS was 1.0 per 1000 person-years. IBS increased with advancing age. Approximately 40% of all the IBS cases occurred among those over the age of 65 years. Women had a higher occurrence rate of IBS with OR = 2.04 (CI 1.39–3.00; p = 0.0002).

Discussion

This study resulted in a database for the rural Cretan setting where a computerized medical system is still in progress. All consultations during the 4 year period, hard copy or computerized, were registered in the database. Available sources of information were searched, including health cards and handwritten records that were still in use in most health centres.

Several methodological flaws obstructed a correct estimate of occurrence rates of FD, IBS and gastroenteritis. The diagnoses of these GI diseases were made retrospectively on the basis of clinical records obtained by physicians. There was a great variation in diagnoses used by the local physicians and scant information on the patients' symptoms and type of treatment. Although this variety of diagnoses and scant information available in medical records could be explained by the high number of non-specialized young physicians, they have grossly limited the outcome of the study and raised some doubts about the validity of the data source. We can also speculate that the lack of use of specific diagnostic criteria by the local physicians could explain the variety of labels used for functional gastrointestinal disorders, although such a statement is not validated by the findings of this study. However, this is not unique for Cretan physicians. In a questionnaire study from the UK it was found that only 12% of GPs had heard of the Rome Criteria II for diagnosis of functional gastrointestinal disorders and only 3% used them[8]. Despite the GPs unfamiliarity with diagnostic criteria for IBS,

their diagnoses of the condition was in close agreement with that of a specialist[9,10]. A Norwegian study among GPs also revealed poor use of the Rome Criteria II in the diagnosis of IBS[11].

Our study was also based on available medical records; a population-based survey may have provided different figures. The term FD might have been misleading because no endoscopy investigations were performed. For that reason, the patients identified with upper abdominal problems were classified as dyspepsia cases, taking into account that ulcer and gastroesophageal reflux cases could be included. It was uncertain to what extent endoscopy was used in diagnosing of FD and IBS but the impression was that it played a minor role.

Although we made a 4 year retrospective review of all the medical records of the PHC centres in the defined areas, it was difficult to classify the cases as prevalent or incidental. This problem has also been found in other studies throughout the primary care setting[12]. Therefore, we chose to classify the cases in this report as occurrence rates. The cases documented are regarded as new cases, but some might have had a previous history of the disease.

One of the main findings of this study is the high occurrence of gastroenteritis cases and the relatively low occurrence of dyspepsia and IBS in comparison with other studies. Prevalence studies of functional gastrointestinal disorders in Western societies have shown that between 8%-23% of adults have IBS or other functional gastrointestinal symptoms, and that approximately 60%-70% of these are women[4,13]. The number of IBS patients in our study was small (5.5%). Some studies have reported that only 25%-60% of individuals suffering from IBS symptoms see a physician for their illness[2]. Studies of prevalence rates of these diseases in the general population based on postal questionnaires and surveys are available in several countries[4,13], while studies of incidence rates are quite rare[3,14].

Several factors other than the limitations mentioned may explain the low rates of IBS and dyspepsia found on Crete. It is important to note that in the Greek healthcare system, patients may contact a specialist without a referral from the primary care physician, and severe cases could be lost. In rural areas of Greece, patients who are experiencing only minor symptoms are more likely to consult the local non-specialized physician, who visits their village weekly, instead of travelling to healthcare centres or to distant urban specialized doctors. Therefore, the primary-care physicians working at the healthcare centres can only diagnose IBS when a patient, with unexplained symptoms, becomes poly-symptomatic, has experienced symptoms for a long time or has been referred by the local doctor for further investigation. This could mean that FD and IBS in the Cretan rural environment have a minor symptomatology and are, therefore, not as troublesome for the wellbeing of patients as elsewhere. Other possible explanations for the relatively low rates of dyspepsia and IBS may be found in the socio-cultural environment and the Mediterranean diet. The traditional lifestyle and the concept of stress on rural Crete differ from what is common in Northern and Western Europe today. Also, nutritional factors could be of importance, with the Mediterranean diet favourable. These aspects and their positive impact on GI problems need further investigation in future studies.

In this study, IBS was found to be more common among people aged 65 years and older. This differs from epidemiological studies reporting that the prevalence of IBS declines with age[15,16]. However, one study suggests that IBS may remain a common GI illness even in the aged[17]. Our findings require further discussion of and analysis of the prevalence and diagnosis pattern of IBS among the elderly. In the present study the occurrence of IBS was significantly higher among women than men, which is in accord with previous studies[3,18].

There is also some evidence in the literature that there is an increased risk of IBS after an episode of infective gastroenteritis[19,20]. In a study of 386 patients with a bacterial-confirmed gastroenteritis who were surveyed by a questionnaire 6 months after the infective episode, it was found that 7% had developed IBS[20]. In another study from the

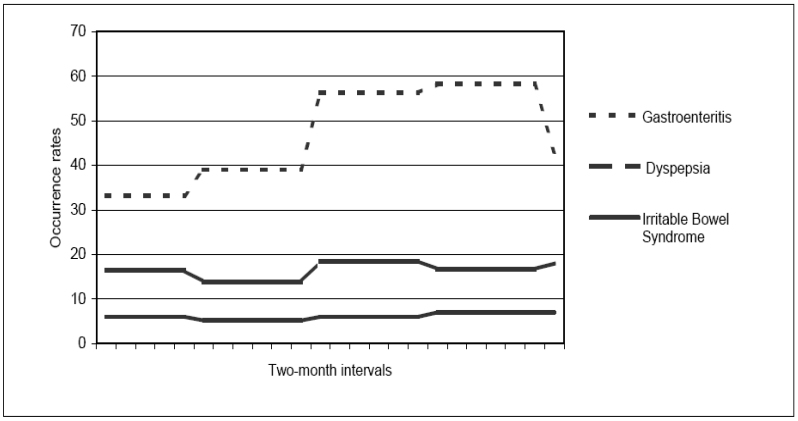


Figure 2: Number of new cases over the study period divided into 2 month periods.

Table 2: Note-recorded diagnosis versus retrospective researcher diagnosis on functional gastrointestinal disorders in rural Crete

Diagnosis	Note recorded diagnosis *n* (%)	Retrospective researcher diagnosis *n* (%)
Gastroenteritis	482 (42.6)	649 (57.6)
Dyspepsia	70 (18)	323 (82)
IBS	119 (81.5)	27 (18.5)

The occurrence rates of gastrointestinal disorders for those over the age of 15 years and odds ratio between men and women are presented (Tables 3-5). The observed total occurrence rate for gastroenteritis was 7.1 per 1000 person-years in the studied population. Gastroenteritis tended to be somewhat higher among the younger age groups and among those over the age of 65 years. There was no sex difference seen for gastroenteritis ($p = 0.39$).

Table 3: Occurrence rates of gastroenteritis per 1000 person-years by gender and for those over the age of 14 years

Gastroenteritis Occurrence rate per 1000 person-years						
Age groups (years)	**Female (*n* = 467)**		**Male (*n* = 448)**		**Total (*n* = 915)**	
	n	**Rate**	***n***	**Rate**	***n***	**Rate**
15 – 24	87	8.1	90	7.6	177	7.9
25 – 39	91	7.6	96	6.8	187	7.2
40 – 54	67	5.4	62	4.9	129	5.1
55 – 64	50	4.7	52	5.3	102	5.0
65 – 79	104	7.5	106	9.3	210	8.3
≥80	68	13.3	42	10.4	110	12.0
Observed		7.2		7.0		7.1
Odds Ratio (OR) Women/men						1.08
95 % CI						0.90 - 1.29

Table 4: Occurrence rates of dyspepsia per 1000 person-years by gender and for those over the age of 14 years

Dyspepsia Occurrence rate per 1000 person-years						
Age groups (years)	**Female (*n* = 186)**		**Male (*n* = 164)**		**Total (*n* = 350)**	
	n	**Rate**	***n***	**Rate**	***n***	**Rate**
15 – 24	25	2.3	20	1.7	45	2.0
25 – 39	23	1.9	39	2.8	62	2.4
40 – 54	26	2.1	27	2.1	53	2.1
55 – 64	25	2.3	14	1.4	39	1.9
65 – 79	62	4.5	46	4.0	108	4.3
≥ 80	25	4.9	18	4.5	43	4.7
Observed		2.9		2.6		2.7
Odds Ratio (OR) Women/men						1.16
95 % CI						0.92 - 1.47

Table 5: Occurrence rates of irritable bowel syndrome per 1000 person-years by gender and for those over the age of 14 years

Irritable Bowel Syndrome Occurrence rate per 1000 person-years						
Age groups (years)	Female (n = 82)		Male (n = 42)		Total (n = 124)	
	n	Rate	n	Rate	n	Rate
15 – 24	8	0.7	4	0.3	12	0.5
25 – 39	5	0.4	9	0.6	14	0.5
40 – 54	17	1.4	8	0.6	25	1.0
55 – 64	18	1.7	5	0.5	23	1.1
65 – 79	27	2.0	10	0.9	37	1.5
≥ 80	7	1.4	6	1.5	13	1.4
Observed		1.3		0.7		1.0
Odds Ratio (OR) Women/men						2.04
95 % CI						1.39 - 3.00

The observed total occurrence rate for dyspepsia was 2.7 per 1000 person-years in the studied population. An increased rate of dyspepsia was seen among those over the age of 65 years. Men in the age group of 25-39 years had a higher rate of dyspepsia compared with women in the same age-group. A similar but opposite trend was seen among women in the age-group of 55-64 years. In this population, women tended to have a slightly higher, but not statistically significant higher, rate of dyspepsia than men (p = 0.20).

In this population, the observed total occurrence rate of IBS was 1.0 per 1000 person-years. IBS increased with advancing age. Approximately 40% of all the IBS cases occurred among those over the age of 65 years. Women had a higher occurrence rate of IBS with OR = 2.04 (CI 1.39–3.00; p = 0.0002).

Discussion

This study resulted in a database for the rural Cretan setting where a computerized medical system is still in progress. All consultations during the 4 year period, hard copy or computerized, were registered in the database. Available sources of information were searched, including health cards and handwritten records that were still in use in most health centres.

Several methodological flaws obstructed a correct estimate of occurrence rates of FD, IBS and gastroenteritis. The diagnoses of these GI diseases were made retrospectively on the basis of clinical records obtained by physicians. There was a great variation in diagnoses used by the local physicians and scant information on the patients' symptoms and type of treatment. Although this variety of diagnoses and scant information available in medical records could be explained by the high number of non-specialized young physicians, they have grossly limited the outcome of the study and raised some doubts about the validity of the data source. We can also speculate that the lack of use of specific diagnostic criteria by the local physicians could explain the variety of labels used for functional gastrointestinal disorders, although such a statement is not validated by the findings of this study. However, this is not unique for Cretan physicians. In a questionnaire study from the UK it was found that only 12% of GPs had heard of the Rome Criteria II for diagnosis of functional gastrointestinal disorders and only 3% used them[8]. Despite the GPs unfamiliarity with diagnostic criteria for IBS,

their diagnoses of the condition was in close agreement with that of a specialist[9,10]. A Norwegian study among GPs also revealed poor use of the Rome Criteria II in the diagnosis of IBS[11].

Our study was also based on available medical records; a population-based survey may have provided different figures. The term FD might have been misleading because no endoscopy investigations were performed. For that reason, the patients identified with upper abdominal problems were classified as dyspepsia cases, taking into account that ulcer and gastroesophageal reflux cases could be included. It was uncertain to what extent endoscopy was used in diagnosing of FD and IBS but the impression was that it played a minor role.

Although we made a 4 year retrospective review of all the medical records of the PHC centres in the defined areas, it was difficult to classify the cases as prevalent or incidental. This problem has also been found in other studies throughout the primary care setting[12]. Therefore, we chose to classify the cases in this report as occurrence rates. The cases documented are regarded as new cases, but some might have had a previous history of the disease.

One of the main findings of this study is the high occurrence of gastroenteritis cases and the relatively low occurrence of dyspepsia and IBS in comparison with other studies. Prevalence studies of functional gastrointestinal disorders in Western societies have shown that between 8%-23% of adults have IBS or other functional gastrointestinal symptoms, and that approximately 60%-70% of these are women[4,13]. The number of IBS patients in our study was small (5.5%). Some studies have reported that only 25%-60% of individuals suffering from IBS symptoms see a physician for their illness[2]. Studies of prevalence rates of these diseases in the general population based on postal questionnaires and surveys are available in several countries[4,13], while studies of incidence rates are quite rare[3,14].

Several factors other than the limitations mentioned may explain the low rates of IBS and dyspepsia found on Crete. It is important to note that in the Greek healthcare system, patients may contact a specialist without a referral from the primary care physician, and severe cases could be lost. In rural areas of Greece, patients who are experiencing only minor symptoms are more likely to consult the local non-specialized physician, who visits their village weekly, instead of travelling to healthcare centres or to distant urban specialized doctors. Therefore, the primary-care physicians working at the healthcare centres can only diagnose IBS when a patient, with unexplained symptoms, becomes poly-symptomatic, has experienced symptoms for a long time or has been referred by the local doctor for further investigation. This could mean that FD and IBS in the Cretan rural environment have a minor symptomatology and are, therefore, not as troublesome for the wellbeing of patients as elsewhere. Other possible explanations for the relatively low rates of dyspepsia and IBS may be found in the socio-cultural environment and the Mediterranean diet. The traditional lifestyle and the concept of stress on rural Crete differ from what is common in Northern and Western Europe today. Also, nutritional factors could be of importance, with the Mediterranean diet favourable. These aspects and their positive impact on GI problems need further investigation in future studies.

In this study, IBS was found to be more common among people aged 65 years and older. This differs from epidemiological studies reporting that the prevalence of IBS declines with age[15,16]. However, one study suggests that IBS may remain a common GI illness even in the aged[17]. Our findings require further discussion of and analysis of the prevalence and diagnosis pattern of IBS among the elderly. In the present study the occurrence of IBS was significantly higher among women than men, which is in accord with previous studies[3,18].

There is also some evidence in the literature that there is an increased risk of IBS after an episode of infective gastroenteritis[19,20]. In a study of 386 patients with a bacterial-confirmed gastroenteritis who were surveyed by a questionnaire 6 months after the infective episode, it was found that 7% had developed IBS[20]. In another study from the

Table 3: Occurrence rates of gastroenteritis per 1000 person-years by gender and for those over the age of 14 years

Gastroenteritis Occurrence rate per 1000 person-years						
Age groups (years)	**Female (*n* = 467)**		**Male (*n* = 448)**		**Total (*n* = 915)**	
	n	**Rate**	***n***	**Rate**	***n***	**Rate**
15 – 24	87	8.1	90	7.6	177	7.9
25 – 39	91	7.6	96	6.8	187	7.2
40 – 54	67	5.4	62	4.9	129	5.1
55 – 64	50	4.7	52	5.3	102	5.0
65 – 79	104	7.5	106	9.3	210	8.3
≥80	68	13.3	42	10.4	110	12.0
Observed		7.2		7.0		7.1
Odds Ratio (OR) Women/men						1.08
95 % CI						0.90 - 1.29

Table 4: Occurrence rates of dyspepsia per 1000 person-years by gender and for those over the age of 14 years

Dyspepsia Occurrence rate per 1000 person-years						
Age groups (years)	**Female (*n* = 186)**		**Male (*n* = 164)**		**Total (*n* = 350)**	
	n	**Rate**	***n***	**Rate**	***n***	**Rate**
15 – 24	25	2.3	20	1.7	45	2.0
25 – 39	23	1.9	39	2.8	62	2.4
40 – 54	26	2.1	27	2.1	53	2.1
55 – 64	25	2.3	14	1.4	39	1.9
65 – 79	62	4.5	46	4.0	108	4.3
≥ 80	25	4.9	18	4.5	43	4.7
Observed		2.9		2.6		2.7
Odds Ratio (OR) Women/men						1.16
95 % CI						0.92 - 1.47

Table 5: Occurrence rates of irritable bowel syndrome per 1000 person-years by gender and for those over the age of 14 years

Irritable Bowel Syndrome Occurrence rate per 1000 person-years						
Age groups (years)	Female (n = 82)		Male (n = 42)		Total (n = 124)	
	n	Rate	n	Rate	n	Rate
15 – 24	8	0.7	4	0.3	12	0.5
25 – 39	5	0.4	9	0.6	14	0.5
40 – 54	17	1.4	8	0.6	25	1.0
55 – 64	18	1.7	5	0.5	23	1.1
65 – 79	27	2.0	10	0.9	37	1.5
≥ 80	7	1.4	6	1.5	13	1.4
Observed		1.3		0.7		1.0
Odds Ratio (OR) Women/men						2.04
95 % CI						1.39 - 3.00

The observed total occurrence rate for dyspepsia was 2.7 per 1000 person-years in the studied population. An increased rate of dyspepsia was seen among those over the age of 65 years. Men in the age group of 25-39 years had a higher rate of dyspepsia compared with women in the same age-group. A similar but opposite trend was seen among women in the age-group of 55-64 years. In this population, women tended to have a slightly higher, but not statistically significant higher, rate of dyspepsia than men (p = 0.20).

In this population, the observed total occurrence rate of IBS was 1.0 per 1000 person-years. IBS increased with advancing age. Approximately 40% of all the IBS cases occurred among those over the age of 65 years. Women had a higher occurrence rate of IBS with OR = 2.04 (CI 1.39–3.00; p = 0.0002).

Discussion

This study resulted in a database for the rural Cretan setting where a computerized medical system is still in progress. All consultations during the 4 year period, hard copy or computerized, were registered in the database. Available sources of information were searched, including health cards and handwritten records that were still in use in most health centres.

Several methodological flaws obstructed a correct estimate of occurrence rates of FD, IBS and gastroenteritis. The diagnoses of these GI diseases were made retrospectively on the basis of clinical records obtained by physicians. There was a great variation in diagnoses used by the local physicians and scant information on the patients' symptoms and type of treatment. Although this variety of diagnoses and scant information available in medical records could be explained by the high number of non-specialized young physicians, they have grossly limited the outcome of the study and raised some doubts about the validity of the data source. We can also speculate that the lack of use of specific diagnostic criteria by the local physicians could explain the variety of labels used for functional gastrointestinal disorders, although such a statement is not validated by the findings of this study. However, this is not unique for Cretan physicians. In a questionnaire study from the UK it was found that only 12% of GPs had heard of the Rome Criteria II for diagnosis of functional gastrointestinal disorders and only 3% used them[8]. Despite the GPs unfamiliarity with diagnostic criteria for IBS,

their diagnoses of the condition was in close agreement with that of a specialist[9,10]. A Norwegian study among GPs also revealed poor use of the Rome Criteria II in the diagnosis of IBS[11].

Our study was also based on available medical records; a population-based survey may have provided different figures. The term FD might have been misleading because no endoscopy investigations were performed. For that reason, the patients identified with upper abdominal problems were classified as dyspepsia cases, taking into account that ulcer and gastroesophageal reflux cases could be included. It was uncertain to what extent endoscopy was used in diagnosing of FD and IBS but the impression was that it played a minor role.

Although we made a 4 year retrospective review of all the medical records of the PHC centres in the defined areas, it was difficult to classify the cases as prevalent or incidental. This problem has also been found in other studies throughout the primary care setting[12]. Therefore, we chose to classify the cases in this report as occurrence rates. The cases documented are regarded as new cases, but some might have had a previous history of the disease.

One of the main findings of this study is the high occurrence of gastroenteritis cases and the relatively low occurrence of dyspepsia and IBS in comparison with other studies. Prevalence studies of functional gastrointestinal disorders in Western societies have shown that between 8%-23% of adults have IBS or other functional gastrointestinal symptoms, and that approximately 60%-70% of these are women[4,13]. The number of IBS patients in our study was small (5.5%). Some studies have reported that only 25%-60% of individuals suffering from IBS symptoms see a physician for their illness[2]. Studies of prevalence rates of these diseases in the general population based on postal questionnaires and surveys are available in several countries[4,13], while studies of incidence rates are quite rare[3,14].

Several factors other than the limitations mentioned may explain the low rates of IBS and dyspepsia found on Crete. It is important to note that in the Greek healthcare system, patients may contact a specialist without a referral from the primary care physician, and severe cases could be lost. In rural areas of Greece, patients who are experiencing only minor symptoms are more likely to consult the local non-specialized physician, who visits their village weekly, instead of travelling to healthcare centres or to distant urban specialized doctors. Therefore, the primary-care physicians working at the healthcare centres can only diagnose IBS when a patient, with unexplained symptoms, becomes poly-symptomatic, has experienced symptoms for a long time or has been referred by the local doctor for further investigation. This could mean that FD and IBS in the Cretan rural environment have a minor symptomatology and are, therefore, not as troublesome for the wellbeing of patients as elsewhere. Other possible explanations for the relatively low rates of dyspepsia and IBS may be found in the socio-cultural environment and the Mediterranean diet. The traditional lifestyle and the concept of stress on rural Crete differ from what is common in Northern and Western Europe today. Also, nutritional factors could be of importance, with the Mediterranean diet favourable. These aspects and their positive impact on GI problems need further investigation in future studies.

In this study, IBS was found to be more common among people aged 65 years and older. This differs from epidemiological studies reporting that the prevalence of IBS declines with age[15,16]. However, one study suggests that IBS may remain a common GI illness even in the aged[17]. Our findings require further discussion of and analysis of the prevalence and diagnosis pattern of IBS among the elderly. In the present study the occurrence of IBS was significantly higher among women than men, which is in accord with previous studies[3,18].

There is also some evidence in the literature that there is an increased risk of IBS after an episode of infective gastroenteritis[19,20]. In a study of 386 patients with a bacterial-confirmed gastroenteritis who were surveyed by a questionnaire 6 months after the infective episode, it was found that 7% had developed IBS[20]. In another study from the

Table 5: Occurrence rates of irritable bowel syndrome per 1000 person-years by gender and for those over the age of 14 years

Irritable Bowel Syndrome Occurrence rate per 1000 person-years						
Age groups (years)	Female (n = 82)		Male (n = 42)		Total (n = 124)	
	n	Rate	n	Rate	n	Rate
15 – 24	8	0.7	4	0.3	12	0.5
25 – 39	5	0.4	9	0.6	14	0.5
40 – 54	17	1.4	8	0.6	25	1.0
55 – 64	18	1.7	5	0.5	23	1.1
65 – 79	27	2.0	10	0.9	37	1.5
≥ 80	7	1.4	6	1.5	13	1.4
Observed		1.3		0.7		1.0
Odds Ratio (OR) Women/men						2.04
95 % CI						1.39 - 3.00

The observed total occurrence rate for dyspepsia was 2.7 per 1000 person-years in the studied population. An increased rate of dyspepsia was seen among those over the age of 65 years. Men in the age group of 25-39 years had a higher rate of dyspepsia compared with women in the same age-group. A similar but opposite trend was seen among women in the age-group of 55-64 years. In this population, women tended to have a slightly higher, but not statistically significant higher, rate of dyspepsia than men (p = 0.20).

In this population, the observed total occurrence rate of IBS was 1.0 per 1000 person-years. IBS increased with advancing age. Approximately 40% of all the IBS cases occurred among those over the age of 65 years. Women had a higher occurrence rate of IBS with OR = 2.04 (CI 1.39–3.00; p = 0.0002).

Discussion

This study resulted in a database for the rural Cretan setting where a computerized medical system is still in progress. All consultations during the 4 year period, hard copy or computerized, were registered in the database. Available sources of information were searched, including health cards and handwritten records that were still in use in most health centres.

Several methodological flaws obstructed a correct estimate of occurrence rates of FD, IBS and gastroenteritis. The diagnoses of these GI diseases were made retrospectively on the basis of clinical records obtained by physicians. There was a great variation in diagnoses used by the local physicians and scant information on the patients' symptoms and type of treatment. Although this variety of diagnoses and scant information available in medical records could be explained by the high number of non-specialized young physicians, they have grossly limited the outcome of the study and raised some doubts about the validity of the data source. We can also speculate that the lack of use of specific diagnostic criteria by the local physicians could explain the variety of labels used for functional gastrointestinal disorders, although such a statement is not validated by the findings of this study. However, this is not unique for Cretan physicians. In a questionnaire study from the UK it was found that only 12% of GPs had heard of the Rome Criteria II for diagnosis of functional gastrointestinal disorders and only 3% used them[8]. Despite the GPs unfamiliarity with diagnostic criteria for IBS,

their diagnoses of the condition was in close agreement with that of a specialist[9,10]. A Norwegian study among GPs also revealed poor use of the Rome Criteria II in the diagnosis of IBS[11].

Our study was also based on available medical records; a population-based survey may have provided different figures. The term FD might have been misleading because no endoscopy investigations were performed. For that reason, the patients identified with upper abdominal problems were classified as dyspepsia cases, taking into account that ulcer and gastroesophageal reflux cases could be included. It was uncertain to what extent endoscopy was used in diagnosing of FD and IBS but the impression was that it played a minor role.

Although we made a 4 year retrospective review of all the medical records of the PHC centres in the defined areas, it was difficult to classify the cases as prevalent or incidental. This problem has also been found in other studies throughout the primary care setting[12]. Therefore, we chose to classify the cases in this report as occurrence rates. The cases documented are regarded as new cases, but some might have had a previous history of the disease.

One of the main findings of this study is the high occurrence of gastroenteritis cases and the relatively low occurrence of dyspepsia and IBS in comparison with other studies. Prevalence studies of functional gastrointestinal disorders in Western societies have shown that between 8%-23% of adults have IBS or other functional gastrointestinal symptoms, and that approximately 60%-70% of these are women[4,13]. The number of IBS patients in our study was small (5.5%). Some studies have reported that only 25%-60% of individuals suffering from IBS symptoms see a physician for their illness[2]. Studies of prevalence rates of these diseases in the general population based on postal questionnaires and surveys are available in several countries[4,13], while studies of incidence rates are quite rare[3,14].

Several factors other than the limitations mentioned may explain the low rates of IBS and dyspepsia found on Crete. It is important to note that in the Greek healthcare system, patients may contact a specialist without a referral from the primary care physician, and severe cases could be lost. In rural areas of Greece, patients who are experiencing only minor symptoms are more likely to consult the local non-specialized physician, who visits their village weekly, instead of travelling to healthcare centres or to distant urban specialized doctors. Therefore, the primary-care physicians working at the healthcare centres can only diagnose IBS when a patient, with unexplained symptoms, becomes poly-symptomatic, has experienced symptoms for a long time or has been referred by the local doctor for further investigation. This could mean that FD and IBS in the Cretan rural environment have a minor symptomatology and are, therefore, not as troublesome for the wellbeing of patients as elsewhere. Other possible explanations for the relatively low rates of dyspepsia and IBS may be found in the socio-cultural environment and the Mediterranean diet. The traditional lifestyle and the concept of stress on rural Crete differ from what is common in Northern and Western Europe today. Also, nutritional factors could be of importance, with the Mediterranean diet favourable. These aspects and their positive impact on GI problems need further investigation in future studies.

In this study, IBS was found to be more common among people aged 65 years and older. This differs from epidemiological studies reporting that the prevalence of IBS declines with age[15,16]. However, one study suggests that IBS may remain a common GI illness even in the aged[17]. Our findings require further discussion of and analysis of the prevalence and diagnosis pattern of IBS among the elderly. In the present study the occurrence of IBS was significantly higher among women than men, which is in accord with previous studies[3,18].

There is also some evidence in the literature that there is an increased risk of IBS after an episode of infective gastroenteritis[19,20]. In a study of 386 patients with a bacterial-confirmed gastroenteritis who were surveyed by a questionnaire 6 months after the infective episode, it was found that 7% had developed IBS[20]. In another study from the

their diagnoses of the condition was in close agreement with that of a specialist[9,10]. A Norwegian study among GPs also revealed poor use of the Rome Criteria II in the diagnosis of IBS[11].

Our study was also based on available medical records; a population-based survey may have provided different figures. The term FD might have been misleading because no endoscopy investigations were performed. For that reason, the patients identified with upper abdominal problems were classified as dyspepsia cases, taking into account that ulcer and gastroesophageal reflux cases could be included. It was uncertain to what extent endoscopy was used in diagnosing of FD and IBS but the impression was that it played a minor role.

Although we made a 4 year retrospective review of all the medical records of the PHC centres in the defined areas, it was difficult to classify the cases as prevalent or incidental. This problem has also been found in other studies throughout the primary care setting[12]. Therefore, we chose to classify the cases in this report as occurrence rates. The cases documented are regarded as new cases, but some might have had a previous history of the disease.

One of the main findings of this study is the high occurrence of gastroenteritis cases and the relatively low occurrence of dyspepsia and IBS in comparison with other studies. Prevalence studies of functional gastrointestinal disorders in Western societies have shown that between 8%-23% of adults have IBS or other functional gastrointestinal symptoms, and that approximately 60%-70% of these are women[4,13]. The number of IBS patients in our study was small (5.5%). Some studies have reported that only 25%-60% of individuals suffering from IBS symptoms see a physician for their illness[2]. Studies of prevalence rates of these diseases in the general population based on postal questionnaires and surveys are available in several countries[4,13], while studies of incidence rates are quite rare[3,14].

Several factors other than the limitations mentioned may explain the low rates of IBS and dyspepsia found on Crete. It is important to note that in the Greek healthcare system, patients may contact a specialist without a referral from the primary care physician, and severe cases could be lost. In rural areas of Greece, patients who are experiencing only minor symptoms are more likely to consult the local non-specialized physician, who visits their village weekly, instead of travelling to healthcare centres or to distant urban specialized doctors. Therefore, the primary-care physicians working at the healthcare centres can only diagnose IBS when a patient, with unexplained symptoms, becomes poly-symptomatic, has experienced symptoms for a long time or has been referred by the local doctor for further investigation. This could mean that FD and IBS in the Cretan rural environment have a minor symptomatology and are, therefore, not as troublesome for the wellbeing of patients as elsewhere. Other possible explanations for the relatively low rates of dyspepsia and IBS may be found in the socio-cultural environment and the Mediterranean diet. The traditional lifestyle and the concept of stress on rural Crete differ from what is common in Northern and Western Europe today. Also, nutritional factors could be of importance, with the Mediterranean diet favourable. These aspects and their positive impact on GI problems need further investigation in future studies.

In this study, IBS was found to be more common among people aged 65 years and older. This differs from epidemiological studies reporting that the prevalence of IBS declines with age[15,16]. However, one study suggests that IBS may remain a common GI illness even in the aged[17]. Our findings require further discussion of and analysis of the prevalence and diagnosis pattern of IBS among the elderly. In the present study the occurrence of IBS was significantly higher among women than men, which is in accord with previous studies[3,18].

There is also some evidence in the literature that there is an increased risk of IBS after an episode of infective gastroenteritis[19,20]. In a study of 386 patients with a bacterial-confirmed gastroenteritis who were surveyed by a questionnaire 6 months after the infective episode, it was found that 7% had developed IBS[20]. In another study from the

Health and Quality of Life Outcomes

BioMed Central

Research

Open Access

Health-related quality of life of irritable bowel syndrome patients in different cultural settings

Åshild Faresjö*[1], Foteini Anastasiou[2], Christos Lionis[2], Saga Johansson[3,5], Mari-Ann Wallander[4,5] and Tomas Faresjö[6]

Address: [1]Social Medicine and Public Health Science, Dept of Health and Society, Linköping University, Linköping, Sweden, [2]Clinic of Social and Family Medicine, School of Medicine, University of Crete, Greece, [3]Cardiovascular Institute, University of Gothenburg, Gothenburg, Sweden, [4]Dept of Public Health and Caring Science, Uppsala University, Uppsala, Sweden, [5]Dept of Epidemiology, AstraZeneca R&D, Mölndal, Sweden and [6]General Practice and Primary care, Dept of Health and Society, Linköping University, Linköping, Sweden

Email: Åshild Faresjö* - ashfa@ihs.liu.se; Foteini Anastasiou - fanast@hotmail.com; Christos Lionis - lionis@galinos.med.uoc.gr; Saga Johansson - saga.johansson@astrazeneca.com; Mari-Ann Wallander - mari-ann.wallander@astrazeneca.com; Tomas Faresjö - tomfa@ihs.liu.se

* Corresponding author

Published: 27 March 2006

Health and Quality of Life Outcomes 2006, **4**:21 doi:10.1186/1477-7525-4-21

Received: 01 January 2006
Accepted: 27 March 2006

This article is available from: http://www.hqlo.com/content/4/1/21

Abstract

Background: Persons with Irritable bowel syndrome (IBS) are seriously affected in their everyday life. The effect across different cultural settings of IBS on their quality of life has been little studied. The aim was to compare health-related quality of life (HRQOL) of individuals suffering from IBS in two different cultural settings; Crete, Greece and Linköping, Sweden.

Methods: This study is a sex and age-matched case-control study, with n = 30 Cretan IBS cases and n = 90 Swedish IBS cases and a Swedish control group (n = 300) randomly selected from the general population. Health-related quality of life, measured by SF-36 and demographics, life style indicators and co-morbidity, was measured.

Results: Cretan IBS cases reported lower HRQOL on most dimensions of SF-36 in comparison to the Swedish IBS cases. Significant differences were found for the dimensions mental health ($p < 0.0001$) and general health ($p = 0.05$) even after adjustments for educational level and co-morbidity. Women from Crete with IBS scored especially low on the dimensions general health ($p = 0.009$) and mental health ($p < 0.0001$) in comparison with Swedish women with IBS. The IBS cases, from both sites, reported significantly lower scores on all HRQOL dimensions in comparison with the Swedish control group.

Conclusion: The results from this study tentatively support that the claim that similar individuals having the same disease, e.g. IBS, but living in different cultural environments could perceive their disease differently and that the disease might affect their everyday life and quality of life in a different way. The Cretan population, and especially women, are more seriously affected mentally by their disease than Swedish IBS cases. Coping with IBS in everyday life might be more problematic in the Cretan environment than in the Swedish setting.

Background

Irritable bowel syndrome (IBS) is a functional disorder of the gastrointestinal tract and a quite common digestive disease in the general population frequently diagnosed in general practice [1]. IBS is widespread in all societies and socio-economic groups. For most patients, it is a chronic condition often with severe consequences [2]. There is strong evidence in previous studies that persons with IBS reveal impaired health-related quality of life [3-5]. Although this disease is not life threatening, patients with IBS seem to be seriously affected in their everyday life [6-9].

In assessing the impact of a (chronic) disease such as IBS on sense of wellbeing and daily functioning, patient-centred outcome data of health-related quality of life (HRQOL) are essential [10-12]. Previous studies of the impact of IBS on quality of life have either used generic health-related quality of life measurements, such as SF-36, or IBS-specific HRQOL instruments [9,13-15]. Disease-specific measures are especially used in clinical trials, while generic HRQOL measures are designed to evaluate aspects that are applicable to a population and therefore can provide a basis for comparisons with data from the general population [9,16].

A similarity concerning IBS patient's reports of their symptoms has been revealed in the sense that the patterns of GI symptoms seem to be similar across the Western cultures [17]. But, how are these symptoms and discomforts perceived by those affected? What is the impact on quality of life in different cultural settings? Are there any cultural differences in this respect? In a comparative study of HRQOL between the UK and the US, it was found that IBS had a significant impact on quality of life in both countries, but that this impact appeared to be greater in the UK than in the US [2]. In a study in the US of racial differences in relation to IBS, similar HRQOL was found between white and non-white IBS patients [18]. In general, some research suggests that cultural differences have an impact on the daily activities and quality of life of the IBS patients, but this has not been studied extensively.

The aim of this study was to use the SF-36 questionnaire to compare health-related quality of life of individuals suffering from irritable bowel syndrome in two different European cultural settings.

Methods

Study design

The design of this study is a matched case-control study, with two different groups of cases, IBS cases from rural and semi-rural villages on Crete, Greece, and IBS cases from the city of Linköping, Sweden. The criteria for identifying the cases and creating the databases were the same in the Greek and the Swedish settings. In primary care, the severity of the IBS disease could vary from mild and moderate to severe. In addition to the identified cases, a Swedish control group of non-IBS cases was randomly selected from the general population in the same Swedish region.

The Greek group

Thirty cases with a diagnosis of IBS in the age groups between 17 and 65 years were identified through medical records at three health care centres on Crete. These 30 IBS cases are all actual cases in the age-group 17–65 years from a previous established IBS database with cases identified in a four-year retrospective survey of gastrointestinal problems in the population on Crete, which is reported elsewhere [19]. A medical doctor invited these 30 IBS cases to participate in an interview concerning health-related quality of life (the SF-36 questionnaire), demographics, life style indicators, gastrointestinal and other co-morbidity.

The Swedish group

The Swedish IBS cases and control group were matched for gender and age with the Cretan IBS cases. Each Cretan IBS case was matched following the data collection with three Swedish IBS cases (3:1) and with 10 Swedish control group (10:1) from the general population. The Swedish IBS cases and control group were randomly selected from a large, previously established database consisting of N = 723 IBS cases and N = 4500 individuals from the general population. This database is based on the results of a five-year retrospective survey of diagnosed IBS cases identified through medical records at three health care centres in the city of Linköping located in the south-east region of Sweden [20]. In this study, a postal questionnaire, including SF-36, demographics, lifestyle indicators, gastrointestinal and other co-morbidity were used. The questionnaire was also sent to a random sample of the general population in the same region. The response rate was 71% for the IBS cases and 63% for the general population.

Data collection

The same version of the generic health-related quality of life measure Short Form 36 (SF-36) was used in its Greek and Swedish translated form in this study. This instrument is well established and has been used extensively used in public health studies, epidemiology as well as in clinical trials [21,22]. The SF-36 includes eight multi-item scales that evaluate the extent to which an individual's health limits his or her physical, emotional and social functioning: physical functioning (10 items), role limitations caused by physical health problems (4 items), role limitations caused by emotional health problems (3 items), social functioning (2 items), emotional wellbeing (5 items), pain (2 items), energy/fatigue (4 items), and general health perceptions (5 items). All questions asked

Table 1: Comparison of demographically data and life style indicators between Cretan and Swedish IBS cases and between all IBS cases (from both sites) and Swedish control group

	Cretan IBS Cases (n = 30)		Swedish IBS cases (n = 90)			Swedish control group (n = 300)		
	n	%	n	%	p	n	%	p
Educational level					< 0.0001			< 0.0001
Primary (low)	19	63.3	18	20.0		64	21.4	
Secondary	6	20.0	23	25.6		68	22.7	
High school	4	13.3	16	17.8		54	18.1	
College/ University (High)	1	3.3	33	36.7		113	37.8	
Marrital status					0.14			0.20
Single	1	3.3	10	11.2		36	12.1	
Married or cohabiting	21	70.0	67	75.3		225	75.5	
Divorced or widow	8	26.7	12	13.5		37	12.4	
Occupational situation					0.001			< 0.0001
Full or part-time	11	36.7	64	71.1		220	73.6	
Student, on sick leave or unemployed, etc	19	63.3	26	28.9		79	26.4	
Smoking habits					0.01			0.05
Daily smoker	8	26.7	8	8.9		43	14.7	
Non-smoker	22	73.3	82	91.1		249	85.3	
Insomnia					< 0.0001			0.001
Yes	7	23.3	55	61.1		143	48.3	
No	23	76.7	35	38.9		153	51.7	
Experienced daily stress					0.30			< 0.0001
Very often or Often	16	53.3	55	64.0		96	33.7	
Seldom or Never	14	46.7	31	36.0		189	66.3	

concerned the previous four weeks, with the exception of an additional item that assesses change in the respondent's health over the preceding year. Responses to the SF-36 were transformed into a standard scale ranging from 0, the worst possible score, to 100, the best possible score [23].

In addition to the HRQOL instrument, the subjects on Crete and in Sweden answered questions concerning demographics such as educational level and civil status. Additionally, some life style indicators such as smoking habits (daily smoker vs. non-smoker) were measured. In the group non-smokers ex-smokers could also be included. The variable insomnia was based on a question of how often the respondent felt they had had difficulty in falling asleep in the evenings. Those who reported that they sometimes, very often or always suffered from insomnia were regarded as having insomnia. The variable "perceived daily stress" was based on a question about how the respondent experienced daily stress. Data on co-morbidity were collected in the form of self-reports and focused on past or present occurrence of gastrointestinal diseases and chronic diseases. Gastrointestinal co-morbidity measured was: reflux, gastroenteritis, known peptic ulcer and other gastrointestinal complaints. Co-morbidity of other, mainly chronic, diseases measured was: coronary

103

4.Συζήτηση 108

Ευχαριστίες

Πίσω από κάθε μας βήμα όπως και πίσω από αυτή τη διατριβή υπάρχουν πολλοί άνθρωποι που άμεσα ή έμμεσα επηρέασαν την πορεία της. Όλους αυτούς τους ανθρώπους θέλω σε αυτό το σημείο να ευχαριστήσω.
Θα ήθελα να ξεκινήσω από τους γονείς μου Σπύρο και Ελένη τους οποίους ευγνωμονώ για την αγάπη τους και τη στάση τους όλα αυτά τα χρόνια. Χωρίς τη συμπαράσταση τους τίποτα δεν θα ήταν εφικτό. Είναι πάντα κοντά μου, πάντα υποστηρικτές των αποφάσεων μου και η μόνη τους αγωνία είναι αν αυτό που επιλέγω με κάνει χαρούμενη και δεν βλάπτει κανένα συνάνθρωπο. Τον αδερφό μου Γιάννη, καπετάνιο στο επάγγελμα και στη ζωή μου, ευχαριστώ για τη διακριτική του προστασία στα βήματα μου και για την ενθάρρυνση να ανοίξω πλατιά τα πανιά μου, να τολμήσω νέες «θάλασσες και στεριές». Ευχαριστώ και την όμορφη οικογένεια του που αποτελεί πηγή έμπνευσης και γαλήνης.

Την πορεία αυτής της διατριβής τη χάραξε ο καθηγητής και δάσκαλος μου κ Χρήστος Λιονής, οδηγός στην επιστημονική και ηθική πλευρά των πραγμάτων σηματοδότης των επιλογών και των αποτελεσμάτων μου. Ένα δάσκαλο δεν αρκεί να τον ευχαριστήσεις μια φορά αλλά καθημερινά σε όλη σου τη ζωή, αποδεικνύοντας ότι ο σπόρος που έσπειρε ήταν σε τόπο καλό και απέδωσε καρπούς. Στο Πανεπιστήμιο Κρήτης εισήχθηκα μετά από τις πανελλήνιες εξετάσεις του 1993, και από τα πρώτα μαθήματα της Σχέσης Γιατρού Ασθενούς και της Κοινωνικής Ιατρικής (με τους κκ Λιονή Χρήστο και Κούτη Αντώνη) μου δημιουργήθηκε η επιθυμία για μια ολιστική προσέγγιση του ασθενούς και του περιβάλλοντος του, που με τροφοδότησε και με οδήγησε στη Γενική Ιατρική και τελικά το 2001 στην εκπόνηση της παρούσας διδακτορικής διατριβής.
Ευτύχησα να έχω σε αυτή τη διατριβή συνεπιβλέποντα τον Καθηγητή κ. Ηλία Κουρούμαλη στον οποίο θέλω να εκφράσω τις ευχαριστίες μου για τη σταθερή παρουσία του και τα σημαντικά πάντα σχόλια του. Τις θερμές μου ευχαριστίες εκφράζω και στον Αναπληρωτή Καθηγητή κ. Ιωάννη Μουζά, επίσης συνεπιβλέποντα καθηγητή που με το ενδιαφέρον και τις υποδείξεις του βελτιώθηκε το έργο αυτό.
Στο τελευταίο σημαντικό τμήμα των αναλύσεων καθοριστική ήταν η βοήθεια της κ. Ιωάννας Μοσχανδρέα, Επίκουρης καθηγήτριας, την οποία ευγνωμονώ για το πηγαίο ενδιαφέρον της.

Ευχαριστίες θα ήθελα να εκφράσω προς τους γιατρούς, μονίμους και αγροτικούς κατά την περίοδο της μελέτης και τους εργαζόμενους των Κέντρων Υγείας Ανωγείων, Νεαπόλεως, Περάματος και Σπηλίου και του Περιφερειακού Ιατρείου Αρχανών. Ιδιαίτερες ευχαριστίες για τη βοήθεια τους στους κκ: Αναστασία Ρωμανίδου μαία του ΚΥ Σπηλίου, για τις ατελείωτες ώρες «ξεσκονίσματος» των φακέλων, Μαρία Μπαθιανάκη Γενικό Ιατρό επιμελήτρια στο ΠΙ Αρχανών, για το καταπληκτικό σύστημα αρχειοθέτησης που έχει, Νικόλαο Αντωνάκη Γενικό Ιατρό επιμελητή ΚΥ Ανωγείων, για τη στατιστική ανάλυση και την υπομονετική του στάση στις τόσες απορίες μου, Αντώνιο Μπατίκα, Γενικό Ιατρό Επιμελητή ΚΥ Περάματος, γιατί είχε ένα χώρο ήσυχο πάντα για να δουλεύω, Μάριο Χατζηαρσένη, Διευθυντή Γενικής Ιατρικής στο Νοσοκομείο ΚΥ Νεαπόλεως, για την αμέριστη συμπαράσταση του σε όλες τις δυσκολίες. Επίσης θα ήθελα να ευχαριστήσω τους συναδέλφους κκ Καπίκη, Βαρκαράκη, Ροβίθη και Δουλγεράκη και την κυρία Άννα Πετράκη για τη βοήθεια τους τόσο στην εργασία όσο και στις μετακινήσεις μου. Ένα μεγάλο ευχαριστώ στη φίλη μου Κύνθια Κονδύλη που όχι μόνο βοήθησε στη συλλογή των δεδομένων και τη διαμονή μου κατά τη διάρκεια της μελέτης αλλά αποτέλεσε και αποτελεί παράδειγμα επιμονής και υπομονής.
Στους ασθενείς των περιοχών ευθύνης των Κέντρων Υγείας που προαναφέρθηκαν και εκείνων που συμμετείχαν στην ομάδα ελέγχου, οφείλω ευγνωμοσύνη, γιατί άνοιξαν τις πόρτες των σπιτιών τους και της καρδιάς τους, δίνοντας μου μεγάλα μαθήματα που με βοηθούν στην καθημερινή άσκηση της ιατρικής.
Πολλές ευχαριστίες στη συνάδελφο μου Ευαγγελία Λαδουκάκη, στο ΠΙ Πύργου για τη συμπαράσταση της τα τελευταία 3 χρόνια.

Δεν θα παραλείψω να εκφράσω τις ευχαριστίες μου και στους Σουηδούς συνεργάτες: τον καθηγητή Erik Trell, τον καθηγητή Tomas Faresjö, τη σύζυγο του και συν-συγγραφέα Ashild Faresjö και την κόρη τους Rebecca, για τη συνεργασία και τη φιλοξενία τους. Της καθηγήτριες κκ Saga Johansson και Mari Ann Wallander για την καθοδήγηση τους. Στη Berit Wandergard γραμματέα, για την υποδοχή της στο Πανεπιστήμιο του Linköping. Στον συνάδελφο και καλό γιατρό Αργύρη Αργυρίου για την καθοδήγηση του σε ένα ξένο σύστημα υγείας και νοοτροπίας. Στην κυρία Leana Trell και στους τότε συνεργάτες στο κέντρο υγείας του Ryd, που μοιράστηκαν τις γνώσεις και τις εμπειρίες τους.

Στους αγαπημένους φίλους μου Yvonne Lowert και Jerker Karlen και τις οικογένειες τους ένα μεγάλο ευχαριστώ, χωρίς αυτούς η παραμονή μου στη Σουηδία θα ήταν άχρωμη.

Την κυρία Μαίρη Λιονή θα ήθελα να ευχαριστήσω επίσης, για την τρυφερότητα και τη συμπαράσταση της όλα αυτά τα χρόνια.
Θα ήταν παράλειψη να μην ευχαριστήσω τη γραμματέα του τομέα Κοινωνικής Ιατρικής κ. Μαρία Ανδριανάκη για το χαμόγελο την ευγένεια και τα 15 χρόνια διακριτικής ενθάρρυνσης.
Για την ολοκλήρωση αυτού του τόμου βοήθησαν η αγαπημένη μου φίλη Μαρία Καφετζή, διόρθωση γαλλικής περίληψης και η κυρία Μαρία Κουρλετάκη, φιλολογική επιμέλεια Ελληνικού κειμένου, τις οποίες ευχαριστώ πολύ.

Σε όλες τις δύσκολες στιγμές αυτής της διαδρομής είχα την τύχη να έχω δίπλα μου το σύζυγο μου, Γιώργο. Σε ευχαριστώ για την κατανόηση την πραότητα και το χαμόγελο, που μου χαρίζεις όλα αυτά τα χρόνια, κάνοντας ομορφότερη κάθε άσχημη μου μέρα.
Θέλω από καρδιάς να ευχαριστήσω και την οικογένεια του (την πεθερά μου Βασιλεία και τον κουνιάδο μου Μαρίνο), που παρά τις τόσες προσωπικές ταλαιπωρίες με την υγεία τους, πάντα μου συμπαραστέκονταν με τον τρόπο τους.

Κλείνοντας το τμήμα αυτό θέλω να εκφράσω την ευγνωμοσύνη μου σε έναν άνθρωπο που στάθηκε πνευματικός καθοδηγητής μου από το 1993, τον καθηγητή Ελληνικής και Ρωμαϊκής ιστορίας του Πανεπιστημίου της Τασμανίας, Donald Walter Knight. «Έφυγε» στις 12 Απριλίου 2008, σε ηλικία 79 ετών, μετά από πολυετείς μάχες με επώδυνες νόσους χωρίς να χάσει τη διαύγεια της σκέψης του και το ενδιαφέρον του για τους ανθρώπους. Τα 15 χρόνια φιλίας μαζί του ήταν ένας θησαυρός που σπάνια έχουν οι άνθρωποι και δεν μπορώ παρά να νιώθω τιμή που τον γνώρισα. Θα ήθελα να ήταν εδώ να δει το τέλος αυτής της διαδρομής την οποία στήριζε από την πρώτη στιγμή. Είναι εδώ γιατί θα τον κουβαλάω πάντα στη σκέψη μου και στα συναισθήματα μου. Σε ευγνωμονώ για όλα.

Κατάλογος Δημοσιεύσεων

I. Lionis C, Olsen-Faresjo A, Anastasiou F, Wallander MA, Johansson S, Faresjo T. **Measuring the frequency of functional gastrointestinal disorders in rural Crete: a need for improving primary care physicians' diagnostic skills.** Rural Remote Health. 2005 Jul-Sep;5(3):409.

II. Anastasiou F, Antonakis N, Chaireti G, Theodorakis PN, Lionis C. **Identifying dyspepsia in the Greek population: translation and validation of a questionnaire.** BMC Public Health. 2006 Mar 4;6:56 .

III. Anastasiou F , Mouzas IA, Moschandreas J, Kouroumalis H, Lionis C. **Implementing the new diagnostic criteria for IBS in primary care patients in Greece: where does the truth lie?**(Submitted BMC Gastroenterology) .

IV. Faresjö Å, Anastasiou F, Lionis C, Johansson S, Wallander MA, Faresjö T. **Health-related quality of life of irritable bowel syndrome patients in different cultural settings.** Health Qual Life Outcomes. 2006 Mar 27;4:21.

Περίληψη

Εισαγωγή

Οι λειτουργικές διαταραχές του πεπτικού συστήματος (ΛΔΠ) αποτελούν μια αινιγματική ομάδα νόσων αγνώστου οργανικής αιτιολογίας. Χαρακτηρίζονται από πολλούς γιατρούς ως ψυχολογικές διαταραχές ενώ μερικοί δεν αποδέχονται την ύπαρξη τους ή είναι αρνητικοί απέναντι στους ασθενείς με τέτοια συμπτώματα. Οι ΛΔΠ εμφανίζονται με μεγάλη συχνότητα στο γενικό πληθυσμό και σε ιατρεία γενικής ιατρικής. Η απουσία ενός εξακριβωμένου παθοφυσιολογικού μηχανισμού κάνει τη χρήση διαγνωστικών κριτηρίων και ερωτηματολογίων επιβεβλημένη. Οι νόσοι αυτές δεν έχουν μελετηθεί εκτεταμένα στην Ελλάδα και ειδικότερα στην Πρωτοβάθμια Φροντίδα Υγείας (ΠΦΥ).

Σκοπός

Σκοπός της διδακτορικής διατριβής ήταν να διερευνήσει τις ΛΔΠ σε Κέντρα Υγείας (ΚΥ) αγροτικών περιοχών της Κρήτης. Βασικός στόχος της ήταν να εκτιμηθεί η συχνότητα εμφάνισης του Συνδρόμου Ευερεθίστου Εντέρου (ΣΕΕ) και της Λειτουργικής Δυσπεψίας (ΛΔ) σε μονάδες ΠΦΥ. Επίσης στους στόχους της μελέτης, ήταν να διερευνηθεί η δυνατότητα εφαρμογής διεθνών διαγνωστικών κριτηρίων στους Έλληνες ασθενείς και τέλος να ελεγχθεί εάν επηρεάζεται η ποιότητα ζωής των πασχόντων με ΣΕΕ.

Πληθυσμός και μέθοδοι

Στη μελέτη συμμετείχαν 4 ΚΥ, 3 αγροτικών περιοχών: Ανωγείων, Περάματος, Σπηλίου και ένα ημιαστικής περιοχής, της Νεάπολης. Επίσης συμμετείχε και το περιφερειακό ιατρείο (ΠΙ) Αρχανών. Ο πληθυσμός ευθύνης των μονάδων αυτών ήταν 40081 άτομα σύμφωνα με την απογραφή του 1991. Στην πρώτη φάση της μελέτης έγινε αναδρομικός έλεγχος όλων των αρχείων, ηλεκτρονικών και έντυπων, για τα έτη 1996 έως 2000 (4έτη) και καταγράφηκαν όσοι ασθενείς είχαν διαγνωστεί με ΣΕΕ, δυσπεψία, φλεγμονώδεις νόσους του εντέρου, οξεία γαστρεντερίτιδα και κοιλιοκάκη, άνω των 15 ετών. Στη συνέχεια, οι ασθενείς με τη διάγνωση του ΣΕΕ, κλίθηκαν σε δομημένη συνέντευξη. Για τη συνέντευξη χρησιμοποιήθηκαν τα κριτήρια διάγνωσης Manning και Ρώμης ΙΙ, ένα εργαλείο διάγνωσης για τη δυσπεψία που σταθμίστηκε για το σκοπό αυτό και ένα ελληνικό ερωτηματολόγιο για τη διάγνωση του ΣΕΕ. Χρησιμοποιήθηκε επίσης το ερωτηματολόγιο εκτίμησης της ποιότητας ζωής SF-36. Ασθενείς με ΣΕΕ από

αυτή τη μελέτη συγκρίθηκαν με ομάδα πασχόντων και μη πασχόντων με ΣΕΕ από τη Σουηδία, ως προς την ποιότητα ζωής τους.

Αποτελέσματα

Το ΣΕΕ και η δυσπεψία βρέθηκαν να εμφανίζονται σε μικρότερη συχνότητα από ότι αναφέρεται σε διεθνείς μελέτες (1/1000 άτομα έτη και 2.7/1000 άτομα έτη αντίστοιχα). Εντοπίστηκαν 146 ασθενείς με τη διάγνωση του ΣΕΕ. Από αυτούς 67 συμμετείχαν στη δομημένη συνέντευξη. Τα κριτήρια Manning πληρούνταν από 69% των ασθενών ενώ τα κριτήρια Ρώμης ΙΙ 32% και τροποποιημένες ερωτήσεις για τα Ρώμης ΙΙΙ 16%. Η συμφωνία των ερωτήσεων Ρώμης ΙΙΙ με τα κριτήρια Manning ήταν φτωχή (κ=0.25) ενώ με τα Ρώμης ΙΙ ήταν μέτρια (κ=0.51). Συμπτώματα από το ανώτερο γαστρεντερικό, χωρίς γνωστό έλκος ή άλλο πρόβλημα στο επιγάστριο, είχαν 394 ασθενείς, από τους οποίους μόνο 48 (12.2%) είχαν καταγραφεί ως δυσπεπτικοί από τους γιατρούς ΠΦΥ. Για τις ανάγκες της μελέτης το ερωτηματολόγιο για τη διάγνωσης της δυσπεψίας στο γενικό πληθυσμό μεταφράστηκε και σταθμίστηκε στα Ελληνικά. Η ποιότητα ζωής των ασθενών με ΣΕΕ βρέθηκε επηρεασμένη σε σχέση με ομάδα ελέγχου μη πασχόντων και σε σχέση με ασθενείς με ΣΕΕ από τη Σουηδία.

Συμπεράσματα

Οι ΛΔΠ είναι συχνές στην ΠΦΥ στην Ελλάδα αλλά σε μικρότερο βαθμό από αυτόν που αναφέρεται στη διεθνή βιβλιογραφία. Οι γιατροί ΠΦΥ δε φαίνεται να χρησιμοποιούν τα διεθνώς συμφωνημένα διαγνωστικά κριτήρια και η συμφωνία μεταξύ των διαφόρων κριτηρίων και ερωτηματολογίων διάγνωσης βρέθηκε να είναι χαμηλή, αναδεικνύοντας την ανάγκη για χρήση λιγότερο πολύπλοκων κριτηρίων και ερωτηματολογίων στην ΠΦΥ. Τα ερωτηματολόγιο που σταθμίστηκε στο πλαίσιο αυτής της μελέτης και οι δυσκολίες στην καταγραφή των ΛΔΠ αναμένεται να συνεισφέρουν στην έρευνα που πρέπει να ακολουθήσει την παρούσα διδακτορική διατριβή.

Study of the functional gastrointestinal disorders in primary health care.

Abstract

Background

Functional gastrointestinal disorders (FGIDs) constitute an enigmatic disease's group of unknown organic explanation. They are characterized as psychological disturbances and many doctors do not accept their existence or are negative toward patients with such symptoms. The FGIDs are presented with high frequency in the general population and in surgeries of general medicine. The absence of a known organic mechanism makes the use of diagnostic criteria and questionnaires inevitable. These illnesses have not been studied extensively in Greece and more specifically in the Primary Health Care (PHC).

Aim

The aim of this thesis was to investigate FGIDs in PHC centres of rural regions of Crete. Main objective of this thesis was to investigate Irritable Bowel Syndrome (IBS) and Functional Dyspepsia (FD) in PHC units. The study also sought to explore issues of applicability of international diagnostic criteria in the Greek patients and to reveal whether the diseases are influencing the quality of life of patients.

Subjects and methods

In this study 4 Health Care Centers and one surgery participated, 3 in rural regions: Anogeia, Perama, Spili and two in a semi-urban regions: Neapolis and Archanes surgery. The population of responsibility of the PHC units was 40081 individuals according to the national consensus of 1991. The first part of the thesis consisted of a retrospective study of all files electronic and printed of the years 1996 to 2000 (4 years). All patients over 15, with the diagnosis of IBS, dyspepsia, Inflammatory Bowel Diseases, acute gastroenteritis and celiac disease were recorded. All patients that had been diagnosed as IBS were invited to a home structured interview. The diagnostic criteria of Manning's and Rome II, a tool of diagnosis for dyspepsia that was translated and validated into Greek, for the purposes of

this study, and existing Greek questionnaire for the diagnosis of IBS, were used for the interview. The general questionnaire of the quality of life, SF-36 was also applied. The quality of life of IBS patients from this group was compared with patients and no patients of IBS from Sweden.

Results

IBS and dyspepsia were found to be presented in smaller frequencies than the reported in international studies (1/1000 patients-years and 2.7/1000 patients-years respectively). One hundred and forty six patients were identified with the diagnosis of IBS. Sixty-Seven out of them participated in the structured interview. The criteria of Manning were fulfilled by 69% of patients while the criteria Rome II by 32% and questions matching the Rome III by 16% of the patients. The agreement of criteria Rome III with the criteria of Manning was poor (k=0.25) while with Rome II was moderate (k=0.51). Symptoms from upper gastrointestinal tract without known ulcer or other gastric problem, were found in 394 patients, only 48 (12.2%) of them had been recorded as dyspepsia by the primary care doctors. The questionnaire for the identification of dyspepsia in the general population (IDGP) was reliably translated and validated into Greek. The quality of life of Greek patients with IBS was found to be more influenced when compared to patients and controls from Sweden.

Conclusion

The FGIDs are frequent in PHC in Greece but in smaller degree than that reported in the international bibliography. Doctors in PHC do not appear to use internationaly accepted diagnostic criteria and the agreement between the various criteria and questionnaires of diagnosis, was found low, marking in this way the need for less complex criteria and questionnaires in PHC. The questionnaire that was translated and validated into Greek for the purposes of this study and the difficulties that were recognized in the registration of FGIDs are expected to contribute in the research that ought to follow this dissertation.

ÉTUDE DES DISEASES FONCTIONNELLES DU SYSTÈME DIGESTIF AU PREMIER DEGRÉ DE SOIN DE SANTÉ

Résumé

Contexte

Les maladies fonctionnelles du système digestif constituent un groupe énigmatique de maladies inconnues de raison organique. Elles sont caractérisées par de nombreux médecins comme maladies de substrat psychologique. Certains n'acceptent pas leur existence ou sont négatifs face à les patients avec ces symptômes. Les maladies fonctionnelles du système digestif sont très fréquentes à la population générale et aux cabinets de médecin général. L'absence du mécanisme organique vérifié impose l'usage de critères diagnostiques et de questionnaires. Les maladies n'ont pas été étudiées en Grèce et plus spécialement au premier degré de soin de santé.

But

But de la thèse de doctorat était l'étude des maladies fonctionnelles du système digestif à des centres de santé (CS) de régions rurales de Crète. L'objectif de la thèse était l'appréciation de la fréquence d'apparition du syndrome du colon irritable (SCI) et de l'indigestion fonctionnelle à des unités du premier degré de santé. De plus, l'objectif de l'étude était d'appliquer des critères diagnostiques internationaux aux malades Grecs et enfin de contrôler la qualité de vie des malades.

Population et méthodes

4 centres de santé ont participé à l'étude de 3 régions rurales : Anogeia, Perama, Spili et deux centres de région suburbaine : Neapolis, Archanes. La population de la responsabilité était 40000 individus conformément à l'inventaire de 1991. À la première phase de l'étude on a contrôlé rétroactivement toutes les archives électroniques et imprimées pendant les années 1996 - 2000 (4 ans) et on a enregistré tous les patients (avant 15) qui avaient été diagnostiqués de souffrir par l'IBS, l'indigestion, les maladies inflammatoires de l'intestin, la gastro-entérite aiguë et la maladie coeliaque. Pendant l'interview on a utilisé les critères de diagnostic de Manning et de

Rome II, un outil de diagnostic pour l'indigestion à la population générale (IDGP) qui a été évaluée dans cet objectif et un outil Grec pour le SCI. On a utilisé également le questionnaire d'estimation de la qualité de vie SF-36. La qualité de vie des patients Grec a était comparé avec celle-ci des patients et des contrôles de non souffrants de SCI Suédois.

Résultats

Le SCI et l'indigestion étaient moins fréquents que la fréquence mentionnée aux études internationales (1/1000 individus années et 2.7/1000 individus années respectivement). 146 patients avaient le diagnostic du SCI· 67 patients ont participé à l'interview. Les critères Manning ont remplis par 69% des patients tandis que les critères de Rome II et III par 32% et de 16% respectivement. L'accord des critères de Rome III avec les critères Manning était pauvre ([k]=0.25) tandis qu'avec les critères de Rome II était moyen ([k]=0.51). 394 patients avaient des symptômes du système gastro-intestinal supérieur sans ulcère connu ou autre problème à l'épigastre, seulement 48 (12.2%) avaient été enregistrés en tant de dyspepsie par les ces médecins. L'outil IDGP a été traduit et validé en Grec. La qualité de la vie des patients avec SCI s'est influencée par rapport le groupe de contrôle de non souffrants de SCI et en association les patients de Suède.

Interprétation

Les maladies fonctionnelles du système digestif sont moins fréquentes au premier degré de soin de santé en Grèce que dans la bibliographie internationale. Les médecins du premier degré de soin de santé en Grèce n'utilisent pas des critères diagnostiques internationaux. On a trouve que l'accord entre les divers critères et questionnaires du diagnostic était bas montrant qu'il y a le besoin de critères et des questionnaires les moins complexes. On attend que le questionnaire qui a été validé en Grec et les difficultés pendant l'enregistrement des maladies fonctionnelles du système digestif, contribueront la recherche possible suivantes.

1. Εισαγωγή

1.1. Λειτουργικές Διαταραχές του Πεπτικού Συστήματος

Ορισμός Συνδρόμου Ευερεθίστου Εντέρου και Δυσπεψίας

Οι λειτουργικές διαταραχές του πεπτικού συστήματος (ΛΔΠ) αποτελούν μια αινιγματική ομάδα νόσων αγνώστου οργανικής αιτιολογίας**.** Από πολλούς γιατρούς χαρακτηρίζονται ως ψυχολογικές διαταραχές ή διαταραχές όπου απουσιάζει γνωστό οργανικό υπόστρωμα.[1] Μερικοί δεν αποδέχονται την ύπαρξη τους[2] ενώ άλλοι είναι αρνητικοί απέναντι στους ασθενείς με τέτοια συμπτώματα θεωρώντας ότι έχουν υποδεέστερο πρόβλημα και ότι είναι λιγότερο συμπαθείς από τους ασθενείς με διαγνωσμένη οργανική νόσο.[3] Οι διαταραχές κατατάσσονται σύμφωνα με την τελευταία συνάντηση ομοφωνίας Ρώμη ΙΙΙ, σε 6 μεγάλες κατηγορίες για τους ενήλικες και συγκεκριμένα στις διαταραχές Α) του οισοφάγου, Β) του στομάχου και δωδεκαδακτύλου Γ) του εντέρου Δ) τα λειτουργικά σύνδρομα κοιλιακού άλγους, Ε) των χοληφόρων και ΣΤ) της περιεδρικής περιοχής και του κατιόντος.[1] Οι πιο συχνές ΛΠΔ είναι το Σύνδρομο Ευερεθίστου Εντέρου (ΣΕΕ) και η Λειτουργική Δυσπεψία (ΛΔ).

Το ΣΕΕ είναι η λειτουργική διαταραχή του πεπτικού συστήματος που χαρακτηρίζεται από επιμένον ή διαλείπον κοιλιακό άλγος ή δυσφορία που σχετίζεται με τις κενώσεις.[4]

Η ΛΔ, σύμφωνα με τα κριτήρια Ρώμης ΙΙΙ, ορίζεται ως η παρουσία συμπτωμάτων από τη γαστροδωδεκαδακτυλική περιοχή, επί απουσίας οργανικής, συστηματικής ή μεταβολικής νόσου.[5] Στα συμπτώματα αυτά περιλαμβάνονται το αίσθημα επιγαστρικού πόνου ή καύσους και το αίσθημα μεταγευματικής πληρότητας ή πρόωρης πλήρωσης. Η υψηλή αλληλοεπικάλυψη με τη Γαστροοισοφαγική Παλινδρομική Νόσο (ΓΟΠΝ) οδήγησε στη συμπληρωματική υποσημείωση ότι οι ασθενείς με συνοδό οπισθοστερνικό καύσος ή όξινες ερυγές, ανεξαρτήτως άλλων δυσπεπτικών συμπτωμάτων κατατάσσονται ως ΓΟΠΝ. Η ΛΔ μπορεί να συνυπάρχει με το ΣΕΕ. [5]

Επιδημιολογία

Οι ΛΔΠ και κυρίως το ΣΕΕ και η ΛΔ παρουσιάζονται με μεγάλη συχνότητα στο γενικό πληθυσμό.[6,7,8] Το οικονομικό και κοινωνικό φορτίο που προκαλούν τόσο το ΣΕΕ[9] όσο και η ΛΔ[10] παρά την καλοήθη πορεία τους, ενίσχυσε την προσπάθεια για περαιτέρω διερεύνηση τους. Έχει βρεθεί ότι οι

ασθενείς που πάσχουν από ΣΕΕ ή ΛΔ έχουν περισσότερες μέρες απουσίας από την εργασία τους, κάνουν μεγαλύτερη χρήση των υπηρεσιών υγείας και των φαρμακευτικών σκευασμάτων, ενώ η ποιότητα ζωής τους είναι σαφώς επηρεασμένη αρνητικά τόσο σε σύγκριση με υγιείς όσο και σε σύγκριση με άλλες νόσους.[11-16]

Παθοφυσιολογία

Οι μηχανισμοί που εμπλέκονται στην παθοφυσιολογία τόσο του ΣΕΕ και της ΛΔ όσο και όλων των ΛΔΠ δεν είναι ξεκαθαρισμένοι.[1] Τα ευρήματα διαφόρων μελετών δείχνουν ένα πολύ-παραγοντικό αιτιολογικό σύστημα στο οποίο περιλαμβάνονται τόσο εξωγενείς όσο και ενδογενείς παράγοντες. Τα συμπτώματα των νόσων εμπλέκουν συνδυαστικούς μηχανισμούς αυξημένης κινητικότητας, σπλαχνικής υπερευαισθησίας, αλλαγών της ανοσολογικής και φλεγμονώδους λειτουργίας του εντερικού βλεννογόνου που σχετίζονται με αλλαγές στη μικροβιακή του χλωρίδα αλλά και αλλαγές στον άξονα Κεντρικό Νευρικό Σύστημα (ΚΝΣ)- έντερο. Κοινωνικοί και ψυχολογικοί παράγοντες έχουν επίσης ενοχοποιηθεί. Οι παράγοντες αυτοί μπορεί να διαφέρουν από άτομο σε άτομο αλλά και στον ίδιο ασθενή ανάλογα τη χρονική περίοδο που αυτός εξετάζεται.[1] Τα τελευταία χρόνια ο ρόλος της φλεγμονής και η επίδραση όλων των προαναφερόμενων παραγόντων προς αυτήν την κατεύθυνση φαίνεται να αποκτά ιδιαίτερο ενδιαφέρον μιας και σε ασθενείς με ΣΕΕ έχουν μετρηθεί αυξημένες τιμές διαφόρων παραγόντων φλεγμονής συγκριτικά με υγειείς.[17]

Άξονας εγκέφαλος γαστρεντερικό

Ερεθίσματα του ΚΝΣ επηρεάζουν, μέσω νευρικών συνδέσεων, την αισθητικότητα, την κινητικότητα, τις εκκρίσεις και τις φλεγμονώδεις αντιδράσεις του εντέρου.[18,19,20] Οι ασθενείς με ΛΔΠ παρουσιάζουν αυξημένη σπλαχνική κινητικότητα σε στρεσσογόνους παράγοντες ψυχολογικούς ή οργανικούς σε σύγκριση με υγιή άτομα.[1]

Σπλαχνική υπερευαισθησία

Ασθενείς με ΛΔΠ παρουσιάζουν μειωμένη ουδό πόνου στη δοκιμασία διάτασης με μπαλονάκι[21] και υπεραλγησία ή υπερευαισθησία του σπλαχνικού βλεννογόνου ακόμη και σε φυσιολογικά εντερικά ερεθίσματα.[21,22-24] Υπεύθυνοι θεωρούνται μηχανισμοί διαφοροποίησης των υποδοχέων στον εντερικό βλεννογόνο και το μυεντερικό νευρικό πλέγμα[22] που επηρεάζονται

από τις φλεγμονές του βλεννογόνου, τη δράση των μαστοκυττάρων[25] ή της σεροτονίνης[26,27] μετά από αλλαγές στη εντερική χλωρίδα ή σε λοίμωξη.[28-32]

Μικροβιακή λοίμωξη

Σε μεγάλο αριθμό ασθενών με μικροβιακή γαστρεντερίτιδα παρατηρήθηκε εμμένουσα συμπτωματολογία ΣΕΕ, έξι μήνες έως και ένα χρόνο, μετά τη λοίμωξη.[33-35] Μελέτες σύγκρισης ασθενών που εμφάνισαν μεταλοιμώδες ΣΕΕ με ασθενείς που δεν εμφάνισαν και με ασυμπτωματικούς ασθενείς (ομάδα ελέγχου) έδειξαν ότι η ειδοποιός διαφορά ήταν η αυξημένη αντιφλεγμονώδης απάντηση του βλεννογόνου και τα υψηλότερα επίπεδα ψυχολογικού στρες κατά την έναρξη της λοίμωξης και κατά τη διαιώνιση των συμπτωμάτων μήνες μετά.[36,37]

Βακτηριδιακή εντερική μικροχλωρίδα

Η αλλαγή της εντερικής χλωρίδας και η υπερανάπτυξη των βακτηριδίων του εντέρου έχουν κάποιον ρόλο στα συμπτώματα ασθενών με ΣΕΕ,[37] ενώ η βελτίωση των συμπτωμάτων του ΣΕΕ μετά από χορήγηση *Bifidobacter infanti*[38,39] σχετίστηκε με αλλαγές στο λόγο IL-10/IL-12 και τη μετατροπή του εντερικού περιβάλλοντος σε λιγότερο φλεγμονώδες.[38]

Ψυχολογικοί παράγοντες

Στρεσσογόνα γεγονότα, άγχος ή κατάθλιψη έχουν παρατηρηθεί σε ασθενείς με ΣΕΕ και σχετίζονται με αυξημένο αριθμό επισκέψεων στο γιατρό.[40,41] Ψυχολογικοί παράγοντες επηρεάζουν τη λειτουργία του γαστρεντερικού και επιδεινώνουν τα συμπτώματα των ατόμων που ήδη πάσχουν από λειτουργικές διαταραχές με μία σχέση αλληλοεπιδείνωσης.[42] Οι ίδιοι παράγοντες επηρεάζουν την αντίληψη της νόσου και κατ' επέκταση την αναζήτηση ιατρικής φροντίδας.[43]

Γενετικοί παράγοντες και οικογένεια

Γενετικοί παράγοντες έχουν επίσης ελεγχθεί σε σχέση με την εμφάνιση των ΛΠΔ και κυρίως του ΣΕΕ. Καμία εργασία δεν έχει επιβεβαιώσει την άμεση σχέση μεταξύ συγκεκριμένων γονιδιακών τόπων και ΣΕΕ ή άλλων λειτουργικών διαταραχών.[44,45] Οι γενετικοί παράγοντες παίζουν ρόλο σε διάφορες διαδικασίες όπως στα επίπεδα κιτοκινών[46] ή στον πολυμορφισμό των υποδοχέων σεροτονίνης[47] καθώς και τον πολυμορφισμό πρωτεϊνών.[48]

Παρόλα αυτά το οικογενειακό περιβάλλον φαίνεται να παίζει καθοριστικότερο ρόλο μιας και έχει βρεθεί ότι μπορεί να οδηγήσει στην εμφάνιση λειτουργικών διαταραχών του πεπτικού, ανεξαρτήτως της παρουσίας γονιδιακών μεταλλάξεων.[45,49]

Διαγνωστικά κριτήρια

Η ιδιαιτερότητα των λειτουργικών διαταραχών, η απουσία δηλαδή γνωστού οργανικού αιτίου και άρα η απουσία ενός διαγνωστικού τεστ, οδήγησε στη δημιουργία διαγνωστικών κριτηρίων. Όσον αφορά στο ΣΕΕ πρώτος ο Manning με τους συνεργάτες του δημοσίευσε, μετά από μελέτη ασθενών, έξι κριτήρια που έδιναν τη διάγνωση του ΣΕΕ.[50](Πίνακας 1) Στα κριτήρια αυτά αντιπροτάθηκε μερικά χρόνια μετά, από τους Kruis και συν, ένας συνδυασμός διαγνωστικών αποτελεσμάτων, με σκοπό κυρίως τον διαχωρισμό από οργανική νόσο.[51] Το 1991 μία ομάδα ειδικών που ασχολούνταν με τις διαταραχές του πεπτικού συστήματος, συγκεντρώθηκε στη Ρώμη και κατέληξε σε μία σειρά διαγνωστικών κριτηρίων και κατατάξεων των νόσων του γαστρεντερικού που είχαν λειτουργική αιτιολογία. Η ίδια διαδικασία επαναλήφθηκε το 1999 με τα κριτήρια Ρώμης ΙΙ και το 2006 με τα κριτήρια Ρώμης ΙΙΙ (Πίνακας 2,3,4)[52,53] Τα κριτήρια για τη διάγνωση των ΛΔΠ έχουν προκύψει κυρίως από τριτοβάθμια εξειδικευμένα κέντρα και όχι από συναντήσεις ομοφωνίας διαφορετικών φορέων. Έχουν γνωστοποιηθεί ευρέως και έχουν γίνει αποδεκτά από γαστρεντερολογικές εταιρείες, αλλά η χρήση τους από τους γιατρούς στην καθημερινή πρακτική φαίνεται να είναι περιορισμένη.[54]

Διαγνωστικά κριτήρια για το ΣΕΕ.

Πίνακας 1. Κριτήρια κατά Manning.

- Πόνος ανακουφιζόμενος με την αφόδευση
- Χαλαρότερα κόπρανα κατά την έναρξη του πόνου
- Πιο συχνή κινητικότητα εντέρου κατά την έναρξη του πόνου
- Κοιλιακή διάταση (ορατή)
- Βλέννα από το ορθό
- Αίσθημα ατελούς κένωσης του ορθού

Πίνακας 2. Κριτήρια Ρώμης Ι(1992).

1. Κοιλιακό άλγος που ανακουφίζεται με την αφόδευση ή σχετιζόμενο με τις αλλαγές στη συχνότητα ή τη σύσταση των κοπράνων.

2. Ανωμαλίες στη μορφή των αφοδεύσεων για τουλάχιστον δύο μέρες την εβδομάδα (τρία ή περισσότερα από τα επόμενα):

- Αλλαγές στη συχνότητα της αφόδευσης
- Αλλαγές στη σύσταση των κοπράνων (σκληρά/ μαλακά)
- Αλλαγές στη δίοδο των κοπράνων(πίεση/έπειξη/αίσθημα ατελούς κένωσης)
- Βλέννα από το ορθό
- Μετεωρισμός ή αίσθημα κοιλιακής διάτασης

Πίνακας 3. Κριτήρια Ρώμης ΙΙ(1999).

Συμπτώματα για 12 τουλάχιστον εβδομάδες όχι απαραίτητα συνεχόμενες τους τελευταίους 12 μήνες.

1. Κοιλιακό άλγος ή δυσφορία σχετιζόμενα με αλλαγές στη συχνότητα της αφόδευσης
2. Κοιλιακό άλγος ή δυσφορία που ανακουφίζεται με την αφόδευση
3. Κοιλιακό άλγος σχετιζόμενο με αλλαγές στην σύσταση (μορφή) των κοπράνων
4. Αλλαγές στη συχνότητα των αφοδεύσεων (περισσότερες από 3/ημέρα ή λιγότερες από 3/εβδομάδα)
5. Αλλαγές στη μορφή των κοπράνων (χαλαρά ή σκληρά κόπρανα)
6. Αλλαγές στη δίοδο των κοπράνων (έπειξη προς αφόδευση, αίσθημα ατελούς αφόδευσης, δυσκολία)
7. Δίοδος βλέννες από το ορθό
8. Αίσθημα φουσκώματος ή ορατή διάταση (σε περισσότερο από μία στις τέσσερις ημέρες)

Για τη διάγνωση απαιτούνται 2 από τα 3 πρώτα ενώ τα υπόλοιπα βοηθούν στην παραπέρα κατάταξη του συνδρόμου ανάλογα με το αν επικρατεί δυσκοιλιότητα ή διάρροια.

Πίνακας 4. Κριτήρια Ρώμης ΙΙΙ (2006).

Περιοδικό κοιλιακό άλγος ή δυσφορία που σχετίζεται με 2 ή περισσότερα από τα παρακάτω

1. βελτίωση με την κένωση
2. αλλαγές στη συχνότητα των κενώσεων ή
3. αλλαγές στη μορφή των κοπράνων

Συμπτώματα τουλάχιστον για 3 μέρες το μήνα τους τελευταίους 3 μήνες Συμπτώματα για τουλάχιστον 6 μήνες προ της επίσκεψης

1.2. Γενική Ιατρική και λειτουργικές διαταραχές του πεπτικού συστήματος

Διεθνής εμπειρία

Οι ΛΔΠ παρουσιάζονται με μεγάλη συχνότητα και στα ιατρεία Γενικής Ιατρικής, με συχνότερα προβλήματα το ΣΕΕ και τη δυσπεψία.[7,55,56,] Τα ποσοστά που αναφέρονται διεθνώς ποικίλουν από 5% έως 15% για το ΣΕΕ και από 11% έως 29.2% για τη ΛΔ, ανάλογα με τα κριτήρια διάγνωσης που χρησιμοποιούνται.[57,58]

Τα κριτήρια Ρώμης ΙΙ για τη διάγνωση των ΛΔΠ και ιδιαίτερα αυτά για το ΣΕΕ έχουν δείξει υψηλή ευαισθησία και ειδικότητα.[52] Συγκεκριμένα τα κριτήρια Ρώμης ΙΙ για τη διάγνωση του ΣΕΕ χρησιμοποιήθηκαν σε αρκετές μελέτες, αλλά τελικά θεωρήθηκαν πολύ αυστηρά για την ΠΦΥ, τόσο σε σχέση με τα παλαιότερα κριτήρια Manning,[59] όσο και σε σχέση με τα κριτήρια Ρώμης ΙΙΙ.[60]

Η γνώση και χρήση κριτηρίων για τη διάγνωση του ΣΕΕ στην πρωτοβάθμια και δευτεροβάθμια περίθαλψη έχει βρεθεί ότι είναι χαμηλή μεταξύ γιατρών άλλων πλην των γαστρεντερολόγων.[54,61,62] Από μελέτη σε 6 ευρωπαϊκά κράτη βρέθηκε ότι 80% των γενικών γιατρών γνώριζαν τουλάχιστον 3 κριτήρια για τις πιο συχνές γαστρεντερικές παθήσεις (ΣΕΕ, Δυσπεψία, λοίμωξη από Ελικοβακτηρίδιο του Πυλωρού) αλλά στην καθημερινή κλινική τους πράξη η χρήση των κριτηρίων ήταν περιορισμένη, με ποσοστά παραπομπής σε γαστρεντερολόγο από 3% έως 32% ανάλογα τη χώρα.[63]

Η δημιουργία κριτηρίων διάγνωσης από εξειδικευμένα κέντρα και συναντήσεις ομοφωνίας που δεν περιλαμβάνουν γιατρούς ΠΦΥ εγείρει αυξανόμενες αντιδράσεις τα τελευταία χρόνια.[64] Οι ασθενείς που προσέρχονται στα ιατρεία Γενικής Ιατρικής διαφέρουν από αυτούς που απευθύνονται στα εξωτερικά ιατρεία των νοσοκομείων τόσο όσον αφορά στο φύλο και στη βαρύτητα των συμπτωμάτων όσο και στην επίδραση τον νόσων στην ποιότητα ζωής.[65,66] Για παράδειγμα συσχέτιση των ΛΔΠ με ψυχολογικό τραύμα όπως σεξουαλική ή ψυχολογική παρενόχληση και φτωχότερη κλινική έκβαση, έχει προκύψει από μελέτες ασθενών σε κέντρα αναφοράς ενώ σε ασθενείς στο γενικό πληθυσμό δεν επιβεβαιώνεται τέτοια σχέση.[1]

Οι ΛΔΠ λόγω της χρονιότητας τους και της δυσφορίας που προκαλούν έχει βρεθεί ότι επηρεάζουν την ποιότητα ζωής των ασθενών τόσο σε σχέση με υγιείς ομάδες ελέγχου όσο και σε σύγκριση με ασθενείς με διαφορετική νοσηρότητα.[67] Παρόλο που δεν είναι νόσοι απειλητικές για τη ζωή του

ανθρώπου, οι ασθενείς επιβαρύνονται στην καθημερινή τους λειτουργικότητα.[68-70] Η ποιότητα ζωής φαίνεται να είναι σημαντικά επηρεασμένη σε ασθενείς που απευθύνονται στα εξωτερικά ιατρεία νοσοκομείων αλλά και σε ασθενείς που καταφεύγουν στην ΠΦΥ.[68]
Για τη μελέτη της ποιότητας ζωής των ασθενών με ΣΕΕ και Δυσπεψία έχουν χρησιμοποιηθεί ειδικά διαμορφωμένα ερωτηματολόγια αλλά και γενικά εργαλεία μέτρησης ποιότητας ζωής όπως το SF-36.[71-75] Η στάθμιση και χρήση όμοιων ερωτηματολογίων για την εκτίμηση της ποιότητας ζωής, διευκολύνει τις διαπολιτισμικές συγκρίσεις με αξιόπιστα αποτελέσματα και προβάλλεται σαν ερευνητική αναγκαιότητα.[76]

Ελληνική εμπειρία

Στη χώρα μας έως το 2001 τα δεδομένα για τις λειτουργικές διαταραχές του πεπτικού συστήματος ήταν περιορισμένα. Αρκετά μελετημένο θέμα είναι οι φλεγμονώδεις νόσοι του εντέρου, με δημοσιεύσεις τόσο σχετικά με τους παθογενετικούς μηχανισμούς όσο και με την ποιότητα ζωής των ασθενών.[77-82] Όσον αφορά στο ΣΕΕ εμφανίζεται το 2002 μία δημοσίευση σχετική με τη δημιουργία ερωτηματολογίου διάγνωσης των ΛΔΠ και ειδικά του ΣΕΕ και το διαχωρισμό του από οργανικές παθήσεις.[83] το ερωτηματολόγιο σταθμίστηκε σε ασθενείς των εξωτερικών ιατρείων του τριτοβάθμιου πανεπιστημιακού νοσοκομείου Ηρακλείου.
Μελέτη για την παρουσία συμπτωμάτων από το ανώτερο και κατώτερο γαστρεντερικό πραγματοποιήθηκε σε αστικό πληθυσμό το 2005.[84] Σε αυτή τη μελέτη η δυσπεψία και η ΓΟΠΝ ήταν οι επικρατέστερες διαγνώσεις σε σχέση με το ΣΕΕ. Τα γαστρεντερικά προβλήματα βρέθηκαν αυξημένα στον αστικό πληθυσμό της περιοχής και ήταν σημαντικά στην πλειοψηφία των συμπτωματικών ασθενών. Επίσης, στον ίδιο αστικό πληθυσμό παρατηρήθηκε σημαντική επικάλυψη μεταξύ των διαγνώσεων ενώ η αρχική διάγνωση μπορούσε να αλλάζει με το χρόνο.
Για τη δυσπεψία και το Ελικοβακτηρίδιο του Πυλωρού στην Ελλάδα έχουν πραγματοποιηθεί μελέτες επίπτωσης, βασισμένες σε νοσοκομειακά δεδομένα και σε αστικό πληθυσμό ενώ το θέμα σε σχέση με την ΠΦΥ ήταν παραμελημένο.[85,86] Εργαλεία διάγνωσης της δυσπεψίας και κατευθυντήριες οδηγίες για την ΠΦΥ και τους Γενικούς Γιατρούς δεν έχουν δημοσιευτεί.

1.3. Αναγκαιότητα της μελέτης

Παρατηρήσεις από την κίνηση των ιατρείων κέντρων υγείας έδειχναν ότι μεγάλος αριθμός ασθενών στην Κρήτη προσέρχονταν με άτυπα γαστρεντερικά ενοχλήματα (επιγαστραλγίες, κοιλιακά άλγη, τεινεσμό). Παράλληλα υπήρχε έλλειμμα δεδομένων από τον Ελληνικό χώρο και ιδιαίτερα από την ΠΦΥ για τις ΛΔΠ και γενικότερα για τις παθήσεις του γαστρεντερικού. Οι δύο αυτοί παράγοντες οδήγησαν στο σχεδιασμό μιας μελέτης για τις ΛΔΠ σε ασθενείς μονάδων ΠΦΥ στην Ελλάδα.

1.4. Ερευνητικά ερωτήματα

Τα ερευνητικά ερωτήματα που είχε να απαντήσει αυτή η μελέτη ήταν τα παρακάτω:

1. Ποιά η συχνότητα των λειτουργικών διαταραχών του πεπτικού συστήματος σε επισκέπτες μονάδων ΠΦΥ;
2. Υπάρχουν εργαλεία για την αναγνώριση των λειτουργικών διαταραχών του πεπτικού συστήματος κατάλληλα για την ΠΦΥ στην Ελλάδα;
3. Μπορούν να εφαρμοστούν τα διεθνή διαγνωστικά κριτήρια για το ΣΕΕ στην ΠΦΥ στην Ελλάδα;
4. Ποιά είναι η ποιότητα ζωής των ασθενών με διαγνωσμένο ΣΕΕ στην Ελλάδα;

1.5. Στόχοι της μελέτης

Η μελέτη των λειτουργικών διαταραχών του πεπτικού συστήματος στην Πρωτοβάθμια Φροντίδα Υγείας, είχε στόχο: Να διερευνήσει τις λειτουργικές διαταραχές του πεπτικού συστήματος σε ασθενείς μονάδων ΠΦΥ. Να δημιουργήσει εργαλεία, για τη μελέτη των λειτουργικών διαταραχών του πεπτικού συστήματος, χρήσιμα στην ΠΦΥ και να μελετήσει την επίδραση των νόσων στην ποιότητα ζωής των ασθενών.

1.6. Σημασία της μελέτης

Η διατριβή αυτή αποτελεί την πρώτη σχεδιασμένη προσπάθεια που διενεργήθηκε στον τομέα της ΠΦΥ στην Ελλάδα, για την κατανόηση των ΛΔΠ. Με την πραγματοποίηση της διευκρινίζεται ένα μέρος της νοσηρότητας που εμφανίζεται σε μονάδες ΠΦΥ και δίνονται στοιχεία για τους πάσχοντες σε τομείς όπως η ποιότητα ζωής, που δεν είχαν ποτέ εξεταστεί στο χώρο αυτό. Η διατριβή αξιολογεί υπάρχοντα ερωτηματολόγια και κριτήρια

διάγνωσης ενώ δημιουργεί ένα νέο εργαλείο για τη διάγνωση της δυσπεψίας, αισιοδοξώντας πως με αυτόν τον τρόπο θα βελτιώσει τη γνώση των γιατρών πάνω σε θέματα αξιολόγησης των ΛΔΠ και τις τεχνικές τους στην προσέγγιση των ασθενών με ΣΕΕ και ΛΔ, στη Γενική Ιατρική και γενικότερα στην ΠΦΥ στην Ελλάδα.

2. Μέθοδοι

Ποια η συχνότητα των λειτουργικών διαταραχών του πεπτικού συστήματος σε επισκέπτες μονάδων ΠΦΥ;

Η μεθοδολογία που χρησιμοποιήθηκε για την απάντηση στο πρώτο ερευνητικό ερώτημα φαίνεται στη δημοσίευση Ι.

Υπάρχουν διαγνωστικά εργαλεία για την αναγνώριση των λειτουργικών διαταραχών του πεπτικού συστήματος κατάλληλα για την ΠΦΥ στην Ελλάδα;

Η μεθοδολογία για το δεύτερο ερώτημα φαίνεται στη δημοσίευση ΙΙ.

Μπορούν να εφαρμοστούν τα διεθνή διαγνωστικά κριτήρια για το ΣΕΕ στην ΠΦΥ στην Ελλάδα;

Η μεθοδολογία για το τρίτο ερώτημα φαίνεται στη δημοσίευση ΙΙΙ.

Ποιά είναι η ποιότητα ζωής των ασθενών με διαγνωσμένο σύνδρομο ευερεθίστου εντέρου στην Ελλάδα;

Η μεθοδολογία του τέταρτου ερωτήματος φαίνεται στη δημοσίευση ΙV.

3. Αποτελέσματα

Ποια η συχνότητα των λειτουργικών διαταραχών του πεπτικού συστήματος σε επισκέπτες μονάδων ΠΦΥ;

Measuring the frequency of functional gastrointestinal disorders in rural Crete: a need for improving primary care physicians' diagnostic skills.

C. Lionis,
A. Olsen-Faresjo,
F. Anastasiou,
MA. Wallander,
S. Johansson,
T. Faresjo .

Lionis C, Olsen-Faresjo A, Anastasiou F, Wallander MA, Johansson S, Faresjo T. ***Measuring the frequency of functional gastrointestinal disorders in rural Crete: a need for improving primary care physicians' diagnostic skills.****Rural Remote Health. 2005 Jul-Sep;5(3):409. Epub 2005 Aug 17.*

Rural and Remote Health
FRAME
ARHEN
ISSN 1445-6354
The International Electronic Journal of Rural and Remote Health Research, Education, Practice and Policy

ORIGINAL RESEARCH

Measuring the frequency of functional gastrointestinal disorders in rural Crete: a need for improving primary care physicians' diagnostic skills

C Lionis[1], A Olsen-Faresjo[2], F Anastasiou[1], M Wallander[3], S Johansson[4], T Faresjo[2]

[1]*Clinic of Social and Family Medicine, Heraklion, Crete, Greece*

[2]*Department of Health and Society, Faculty of Health Sciences, University of Linkoping, Sweden*

[3]*Department of Public Health and Caring Science, Uppsala University, Uppsala, Sweden*

[4]*Cardiovascular Institute, University of Gothenburg, Sweden*

Submitted: *15 February 2005;* ***Revised:*** *3 May 2005;* ***Published:*** *17 August 2005*

Lionis C, Olsen-Faresjo A, Anastasiou F, Wallander M, Johansson S, Faresjo T
Measuring the frequency of functional gastrointestinal disorders in rural Crete: a need for improving primary care physicians' diagnostic skills
Rural and Remote Health **5: 409. (Online), 2005**

Available from: http://rrh.deakin.edu.au

ABSTRACT

Introduction: Studies of the frequency and aetiology of functional gastrointestinal disorders in the general population have received increasing interest over the past few years; the field seems to be neglected in Southern Europe. The aim of this study was to report on the frequency of functional dyspepsia (FD), irritable bowel syndrome (IBS) and gastroenteritis within the primary care setting, to provide some information on the extent to which the recorded diagnoses in the physicians' notes fulfil existing diagnostic criteria.

Method: A retrospective study was used, where all new cases of these diseases at five primary health care centres in three rural and two semi-rural areas of Crete were identified by scrutinising medical records from 280 000 consecutive visits during a 4 year period. The occurrence rate per 1000 person-years were calculated for the three conditions. We also checked the extent to which the Talley's criteria for FD and Rome II diagnostic criteria for IBS were followed.

Results: Gastroenteritis was revealed to be a quite frequent health problem among the rural population on Crete, while the occurrence rates for other problems, such as dyspepsia and IBS, were found to be lower than expected. IBS was over-represented among women compared with men, OR 2.04 (CI 1.39-3.00). In many cases a diagnosis of FD, IBS or gastroenteritis was evident to

the research team on the basis of findings recorded in the notes, but the diagnosis was not recorded by the clinician at the time of consultation.

Conclusions: This study yielded two key messages: the first that gastroenteritis is still a frequent health problem, and the second that primary care physicians in rural Crete seem to fail in adequately diagnosing FD and IBS and need further training.

Key words: Crete, gastrointestinal disorders, medical records, primary care.

Introduction

Little is known about the frequency and aetiology of functional gastrointestinal (GI) disorders in the general population. The two most common functional gastrointestinal disorders in the population are functional dyspepsia and irritable colon. Non-ulcer dyspepsia, or the more recent term functional dyspepsia (FD), is used for persistent upper GI symptoms in the absence of a known organic disease. Irritable bowel syndrome (IBS) is characterised by persistent or recurrent abdominal pain related to defecation or to chronic disturbance of bowel habits in the absence of demonstrable organic disease. IBS tends to be a chronic recurring disorder with variable illness episodes that may continue for many years[1]. Despite the fact that this gastrointestinal condition is quite commonly diagnosed in primary care and by gastrointestinal specialists, there is limited data on the rates of healthcare utilization by patients with IBS[2].

Although this subject has received much attention during the past few years in European literature[3,4], it is still neglected in Southern Europe, where research in this area is scarce[5]. For this reason, the current study of the burden of functional gastrointestinal disorders (FD and IBS) and gastroenteritis in the primary care setting on rural Crete was undertaken. In addition, an aim was to explore whether the disorders' diagnoses are consistent with those reported in other European and international studies. The aim of this article was to report on frequencies of FD, IBS and gastroenteritis within the primary-care setting, and to provide some information on the extent to which the recorded diagnoses in physicians' notes fulfil the existing diagnostic criteria.

Method

Setting and study design

A retrospective study was designed by identifying new cases of functional gastrointestinal disorders. Our study was carried out in rural Crete (which is served by 15 primary health care [PHC] centres and two small community hospitals) based on a patient-records system (Fig 1). Five of these PHC were selected, three located in remote rural areas: Spili (8962 population), Anogia (8204 population) and Perama (11 453 population); and two in semi-rural areas: Neapoli (7183 population) and Archanes (4279 population). These PHC centres covered a total population of 40 081, of which 32 117 persons were aged 15 years and over (Table 1).

Data collection

All available electronic or paper medical records in the studied locations from the period March 1996 to February 2000 (in total 280 000 visits) were reviewed retrospectively for all diagnoses, medical complaints and symptoms related to the GI tract, as noted by the local physician. All records were reviewed by one medical doctor from the research team and validated against pre-defined criteria for gastroenteritis, FD and IBS. The review was completed within 10 months. Information on demographics, co-morbidity and medication was retrieved from the medical records by means of a standardised registration form, and subsequently stored in a research database.

Figure 1: Map of the study area, Crete.

Table 1: Descriptive epidemiology of the reference population

Age-groups (years)	Total *n* (%)
15–24	5592 (17.4)
25–39	6495 (20.2)
40–54	6304 (19.6)
55–64	5137 (16.0)
65–79	6297 (19.6)
≥80	2292 (7.1)
Total	32 117 (100)
Sex	
Female	15 927 (50.4)
Male	16 190 (49.6)
Total	32 117 (100)

Gastroenteritis was defined as acute diarrhoea, mild to severe with or without vomiting and with or without fever. Information relevant to the findings of recent history (overseas travel, hiking or camping, shellfish consumption, childcare etc) and faecal and blood examination findings consistent with viral or infectious gastroenteritis (blood and/or leukocytes in stools or isolation of bacteria in stools culture was supportive of this diagnosis). We also included all cases with the diagnoses 'diarrhoea and fever,' 'diarrhoeic syndrome,' and 'acute diarrhoea.' all cases that met the criteria defined by Talley (any persistent or recurrent pain or discomfort centred in the upper abdomen, where evidence of organic disease likely to explain the symptoms is absent, including an upper endoscopy)[6] for FD, together with those diagnosed as 'epigastralgia,' 'pain in the upper abdomen' or 'dyspeptic disorders' were included in the dyspepsia group. Similarly, cases that met the Rome II criteria for IBS (abdominal pain or discomfort relieved by defecation or associated with change in frequency of stool or in the form of stool)[7], or were diagnosed by the local physician as 'spastic colon' or 'spastic colitis', were included in the IBS group. Where the physician recorded a diagnosis of gastroenteritis, dyspepsia and IBS, it was included in the study, irrespective of whether all defined diagnostic criteria were met or not.

In total, 280 000 consecutive visit notes were reviewed. During the 4 year study period, patients with a prior diagnosis of cancer, alcoholism, pancreatitis, peptic ulcer, gastro-oesophageal disease, inflammatory bowel disease and colecystitis, in addition to patients with a previously known use of antacids, antispasmolytics and acid suppressing drugs were excluded, together with pregnant women. Patients who were not inhabitants of the areas of responsibility of the

5 PHC centres were also excluded from the study. In total, 1400 cases fulfilled one or more of the exclusion criteria and were excluded. Information regarding age was lacking for 7.5% ($n = 123$) of the patients identified (88 patients with gastroenteritis, 29 patients with dyspepsia and 6 patients with IBS).

The study was approved by the Ethical Committee at the University Hospital of Heraklion, Crete.

Statistical analysis

The total number of person-years (aged 15 years and over) in the 4 year study period was 128 468. Relative risks were calculated on the crude data. In the calculation of occurrence rates, cases with missing information regarding age were distributed proportionally into the age-groups (15-24, 25-39, 40-54, 55-64, 65-79, 80 years and over) according to the age-distribution for each disease.

Rates for the cases in the study were calculated as occurrence rates per 1000 person-years. Odds ratios (OR) and 95% confidence intervals (CI) between men and women were also calculated.

Results

The total number of the identified GI cases was 1670 with 25 out of these having more than one of the three diagnoses registered during the study period. The number aged more than 14 years old was 1389. The most common diagnosis in all GI cases was gastroenteritis, accounting for 1130 cases (68.7%), followed by dyspepsia with 394 cases (23.9%), and IBS with 146 cases (8.9%). Among the total number of IBS cases, there were 12 cases that also had a diagnosis of gastroenteritis, which constitute 8.2% of the total IBS diagnosis group. However, four of these 12 IBS cases had a documented history of IBS before they received the gastroenteritis diagnosis.

No case of celiac disease was observed in this population. There was a slight upward trend over time for gastroenteritis cases, while the annual occurrence rates of dyspepsia and IBS cases was relatively stable during the 4 year study period (Figure 2).

The vast majority of all the GI cases found were seen and confirmed by the GP of the PHC centre. Two percent of the gastroenteritis and dyspepsia cases, and none of the IBS cases were confirmed by a GP and also referred to a specialist. Four percent of the IBS cases and none of the dyspepsia or gastroenteritis cases were confirmed solely by a gastroenterologist.

Four hundred and eighty two (42.6%) of all the gastroenteritis cases were diagnosed by a local physician. The remaining 649 cases (57.4%) were diagnosed by the research team physician on the basis of symptoms noted in the medical record (eg acute, mild or severe diarrhoea, with or without vomiting, and with or without fever). In 1008 (89.2%) of the defined cases, one or several symptoms of gastroenteritis were recorded in the medical records. Results from stool culture were only available for less than 3% of the cases. Dyspepsia was diagnosed by the local physician in 70 (17.8%) of the total study cases and 324 (82.2%) were diagnosed by the research physician on the basis of relevant symptoms recorded in the medical record. The most common symptoms of dyspepsia (persistent or recurrent pain or discomfort centred in the upper abdomen) were present in 352 (89.3%) of the cases. Of all the IBS cases, 119 (81.5%) were labelled by the local physician and 27 (18.5%) were diagnosed by the research team. The discrepancy between 'note recorded diagnosis' and 'retrospective researcher diagnosis' is illustrated (Table 2).

The distribution of the three selected diagnoses was quite similar among all the centres. However, for one of the centres (Anogia) the proportion of patients with an IBS diagnosis was lower ($p = 0.05$) than among the others.

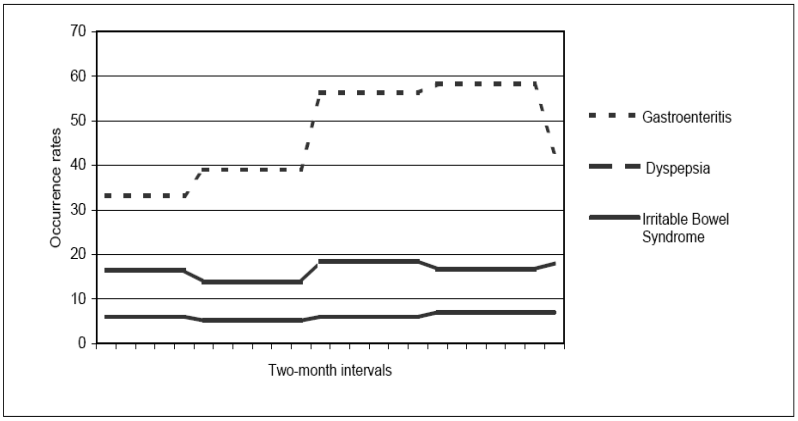


Figure 2: Number of new cases over the study period divided into 2 month periods.

Table 2: Note-recorded diagnosis versus retrospective researcher diagnosis on functional gastrointestinal disorders in rural Crete

Diagnosis	Note recorded diagnosis *n* (%)	Retrospective researcher diagnosis *n* (%)
Gastroenteritis	482 (42.6)	649 (57.6)
Dyspepsia	70 (18)	323 (82)
IBS	119 (81.5)	27 (18.5)

The occurrence rates of gastrointestinal disorders for those over the age of 15 years and odds ratio between men and women are presented (Tables 3-5). The observed total occurrence rate for gastroenteritis was 7.1 per 1000 person-years in the studied population. Gastroenteritis tended to be somewhat higher among the younger age groups and among those over the age of 65 years. There was no sex difference seen for gastroenteritis ($p = 0.39$).

Table 3: Occurrence rates of gastroenteritis per 1000 person-years by gender and for those over the age of 14 years

Gastroenteritis Occurrence rate per 1000 person-years						
Age groups (years)	**Female (*n* = 467)**		**Male (*n* = 448)**		**Total (*n* = 915)**	
	n	**Rate**	***n***	**Rate**	***n***	**Rate**
15 – 24	87	8.1	90	7.6	177	7.9
25 – 39	91	7.6	96	6.8	187	7.2
40 – 54	67	5.4	62	4.9	129	5.1
55 – 64	50	4.7	52	5.3	102	5.0
65 – 79	104	7.5	106	9.3	210	8.3
≥80	68	13.3	42	10.4	110	12.0
Observed		7.2		7.0		7.1
Odds Ratio (OR) Women/men						1.08
95 % CI						0.90 - 1.29

Table 4: Occurrence rates of dyspepsia per 1000 person-years by gender and for those over the age of 14 years

Dyspepsia Occurrence rate per 1000 person-years						
Age groups (years)	**Female (*n* = 186)**		**Male (*n* = 164)**		**Total (*n* = 350)**	
	n	**Rate**	***n***	**Rate**	***n***	**Rate**
15 – 24	25	2.3	20	1.7	45	2.0
25 – 39	23	1.9	39	2.8	62	2.4
40 – 54	26	2.1	27	2.1	53	2.1
55 – 64	25	2.3	14	1.4	39	1.9
65 – 79	62	4.5	46	4.0	108	4.3
≥ 80	25	4.9	18	4.5	43	4.7
Observed		2.9		2.6		2.7
Odds Ratio (OR) Women/men						1.16
95 % CI						0.92 - 1.47

Table 5: Occurrence rates of irritable bowel syndrome per 1000 person-years by gender and for those over the age of 14 years

Irritable Bowel Syndrome Occurrence rate per 1000 person-years						
Age groups (years)	**Female (*n* = 82)**		**Male (*n* = 42)**		**Total (*n* = 124)**	
	n	**Rate**	***n***	**Rate**	***n***	**Rate**
15 – 24	8	0.7	4	0.3	12	0.5
25 – 39	5	0.4	9	0.6	14	0.5
40 – 54	17	1.4	8	0.6	25	1.0
55 – 64	18	1.7	5	0.5	23	1.1
65 – 79	27	2.0	10	0.9	37	1.5
≥ 80	7	1.4	6	1.5	13	1.4
Observed		1.3		0.7		1.0
Odds Ratio (OR) Women/men						2.04
95 % CI						1.39 - 3.00

The observed total occurrence rate for dyspepsia was 2.7 per 1000 person-years in the studied population. An increased rate of dyspepsia was seen among those over the age of 65 years. Men in the age group of 25-39 years had a higher rate of dyspepsia compared with women in the same age-group. A similar but opposite trend was seen among women in the age-group of 55-64 years. In this population, women tended to have a slightly higher, but not statistically significant higher, rate of dyspepsia than men ($p = 0.20$).

In this population, the observed total occurrence rate of IBS was 1.0 per 1000 person-years. IBS increased with advancing age. Approximately 40% of all the IBS cases occurred among those over the age of 65 years. Women had a higher occurrence rate of IBS with OR = 2.04 (CI 1.39–3.00; $p = 0.0002$).

Discussion

This study resulted in a database for the rural Cretan setting where a computerized medical system is still in progress. All consultations during the 4 year period, hard copy or computerized, were registered in the database. Available sources of information were searched, including health cards and handwritten records that were still in use in most health centres.

Several methodological flaws obstructed a correct estimate of occurrence rates of FD, IBS and gastroenteritis. The diagnoses of these GI diseases were made retrospectively on the basis of clinical records obtained by physicians. There was a great variation in diagnoses used by the local physicians and scant information on the patients' symptoms and type of treatment. Although this variety of diagnoses and scant information available in medical records could be explained by the high number of non-specialized young physicians, they have grossly limited the outcome of the study and raised some doubts about the validity of the data source. We can also speculate that the lack of use of specific diagnostic criteria by the local physicians could explain the variety of labels used for functional gastrointestinal disorders, although such a statement is not validated by the findings of this study. However, this is not unique for Cretan physicians. In a questionnaire study from the UK it was found that only 12% of GPs had heard of the Rome Criteria II for diagnosis of functional gastrointestinal disorders and only 3% used them[8]. Despite the GPs unfamiliarity with diagnostic criteria for IBS,

their diagnoses of the condition was in close agreement with that of a specialist[9,10]. A Norwegian study among GPs also revealed poor use of the Rome Criteria II in the diagnosis of IBS[11].

Our study was also based on available medical records; a population-based survey may have provided different figures. The term FD might have been misleading because no endoscopy investigations were performed. For that reason, the patients identified with upper abdominal problems were classified as dyspepsia cases, taking into account that ulcer and gastroesophageal reflux cases could be included. It was uncertain to what extent endoscopy was used in diagnosing of FD and IBS but the impression was that it played a minor role.

Although we made a 4 year retrospective review of all the medical records of the PHC centres in the defined areas, it was difficult to classify the cases as prevalent or incidental. This problem has also been found in other studies throughout the primary care setting[12]. Therefore, we chose to classify the cases in this report as occurrence rates. The cases documented are regarded as new cases, but some might have had a previous history of the disease.

One of the main findings of this study is the high occurrence of gastroenteritis cases and the relatively low occurrence of dyspepsia and IBS in comparison with other studies. Prevalence studies of functional gastrointestinal disorders in Western societies have shown that between 8%-23% of adults have IBS or other functional gastrointestinal symptoms, and that approximately 60%-70% of these are women[4,13]. The number of IBS patients in our study was small (5.5%). Some studies have reported that only 25%-60% of individuals suffering from IBS symptoms see a physician for their illness[2]. Studies of prevalence rates of these diseases in the general population based on postal questionnaires and surveys are available in several countries[4,13], while studies of incidence rates are quite rare[3,14].

Several factors other than the limitations mentioned may explain the low rates of IBS and dyspepsia found on Crete. It is important to note that in the Greek healthcare system, patients may contact a specialist without a referral from the primary care physician, and severe cases could be lost. In rural areas of Greece, patients who are experiencing only minor symptoms are more likely to consult the local non-specialized physician, who visits their village weekly, instead of travelling to healthcare centres or to distant urban specialized doctors. Therefore, the primary-care physicians working at the healthcare centres can only diagnose IBS when a patient, with unexplained symptoms, becomes poly-symptomatic, has experienced symptoms for a long time or has been referred by the local doctor for further investigation. This could mean that FD and IBS in the Cretan rural environment have a minor symptomatology and are, therefore, not as troublesome for the wellbeing of patients as elsewhere. Other possible explanations for the relatively low rates of dyspepsia and IBS may be found in the socio-cultural environment and the Mediterranean diet. The traditional lifestyle and the concept of stress on rural Crete differ from what is common in Northern and Western Europe today. Also, nutritional factors could be of importance, with the Mediterranean diet favourable. These aspects and their positive impact on GI problems need further investigation in future studies.

In this study, IBS was found to be more common among people aged 65 years and older. This differs from epidemiological studies reporting that the prevalence of IBS declines with age[15,16]. However, one study suggests that IBS may remain a common GI illness even in the aged[17]. Our findings require further discussion of and analysis of the prevalence and diagnosis pattern of IBS among the elderly. In the present study the occurrence of IBS was significantly higher among women than men, which is in accord with previous studies[3,18].

There is also some evidence in the literature that there is an increased risk of IBS after an episode of infective gastroenteritis[19,20]. In a study of 386 patients with a bacterial-confirmed gastroenteritis who were surveyed by a questionnaire 6 months after the infective episode, it was found that 7% had developed IBS[20]. In another study from the

UK, it was shown that culture-positive gastroenteritis was an independent risk factor for IBS[21]. Our study did not contribute to this hypothesis, providing only indirect evidence.

Apart from the contribution of this article to the assessment of the prevalence rate of known GI disorders in rural areas of Crete, the present study has also several implications on quality improvement and its implementation in rural primary care in Crete. The heterogenity of the medical records and the lack of information on diagnostic criteria on common GI disorders call for urgent action. Some measures towards quality improvement have been recently reported[22], but improvement must be made in the diagnostic skills of the primary-care physicians who serve the rural areas of Crete.

In conclusion, although the limitations of the study do not permit valid judgements and comparisons to be made, this study carries two key messages. The first is that gastroenteritis is still a frequent health problem that prompts many visits to primary care; and the second is that primary care physicians in rural Crete appear to fail to diagnose adequately FD and IBS, and need further training.

Acknowledgements

The authors express their gratitude for support of the study to the directors and staff at the participating PHC centres on Crete. Specific thanks are extended to Dr N Antonakis, GP at the Anogia Health Centre; Dr M Bathianaki, GP at the Archanes Primary Health Care Unit; Dr M Chatziarsenis, Medical Director at the Neapolis Health Centre-General Hospital; Dr A Batikas, GP at the Perama Health Centre; and Mrs A Romanidou, midwife at the Spili Health Centre, for their contribution to the data collection. This study was supported by a grant from the AstraZeneca R&D, Mölndal, Sweden.

References

1. Luscombe FA. Health-related quality of life and associated psychosocial factors in irritable bowel syndrome, a review. *Quality of Life Research* 2000; **9:** 161-176.

2. Gralnek IM. Health care utilisation and economic issues in irritable bowel syndrome. *European Journal of Surgery* 1998; **583:** S73-S76.

3. Garcia Rodriguez LA, Ruigomez A, Wallander MA, Johansson S, Olbe L. Detection of colorectal tumour and inflammatory bowel disease during follow-up of patients with initial diagnosis of irritable bowel syndrome. *Scandinavian Gastroenterologist* 2000; **35:** 306-311.

4. Thompson WG, Heaton KW, Smyth GT, Smyth C. Irritable bowel syndrome in general practice: prevalence, characteristics, and referral. *Gut* 2000; **46:** 78-82.

5. Hungin APS, Whorwell P, Tack J, Mearin F. The prevalence, patterns and impact of irritable bowel syndrome: an international survey of 40 000 subjects. *Aliment Pharmacology and Therapeutics* 2003; **17:** 643-650.

6. Talley NJ, Stanghellini V, Heading RC, Koch KL, Malagelada JR, Tytgat GN. Functional gastroduodenal disorders. *Gut* 1999; **45**(Suppl II): S37-S42.

7. Thompson GW, Longstreth GF, Drossman DA, Heaton KW, Irvine EJ, Muller-Lissner SA. Functional bowel disorders and functional abdominal pain. *Gut* 1999; **45**(Suppl II): S1143-S1147.

8. Gladman LM, Gorard DA. General practitioner and hospital specialist attitudes to functional gastrointestinal disorders. *Alimentary Pharmacology and Therapeutics* 2003; **17:** 651-654.

9. Yawn B, Lydick E, Locke R, Wollan P, Bertram S, Kurland M. Do published guidelines for evaluation of Irritable Bowel Syndrome reflect practice? *BMC Gastroenterology* 2001; **1:** 11.

10. Thompson WG, Heaton KW, Smyth GT et al. Irritable bowel syndrome: the view from general practice. *European Journal of Gastroenterology and Hepatology* 1997; **9:** 689-692.

11. Vandvik PO, Aabakken L, Farup PG. Diagnosing irritable bowel syndrome: poor agreement between general practitioners and the Rome II criteria. *Scandinavian Journal of Gastroenterology* 2004; **39:** 448-453.

12. Jones R. IBS: Prime problem in primary care. *Gut* 2000; **46:** 7-8.

13. Agreus L, Svardsudd K, Nyrén 0, Tibblin G. Irritable Bowel Syndrome and Dyspepsia in the general population: overlap and lack of stability over time. *Gastroenterology* 1995; **109:** 671-680.

14. Jones R, Lydeard S. Dyspepsia in the community: a follow-up study. *British Journal of Clinical Pharmacology* 1992; **46:** 95-97.

15. Jones R, Lydeard S. Irritable bowel syndrome in the general population. *BMJ* 1992; **304:** 87-90.

16. Talley NJ, Zinsmeister AR, van Dyke C, Melton III LJ. Epidemiology of colonic symptoms and the irritable bowel syndrome. *Gastroenterology* 1991; **101:** 927-934.

17. Bennett G, Talley NJ. Irritable bowel syndrome in the elderly. Best Practice in Research. *Clinical Gastroenterology* 2002; **1:** 63-76.

18. Thompson GW. Gender differences in irritable bowel symptoms. *European Journal of Gastroenterology and Hepatology*. 1997; **9:** 299-302.

19. McKendrick MW, Read NW. Irritable bowel syndrome-post salmonella infection. *Journal of Infection* 1994; **29:** 1-3.

20. Neal KR, Hebden J, Spiller R. Prevalence of gastrointestinal symptoms six months after bacterial gastroenteritis and risk factors for development of the irritable bowel syndrome: postal survey of patients. *BMJ* 1997; **314:** 779-782.

21. Garcia Rodriguez LA, Ruigómez A. Increased risk of irritable bowel syndrome after bacterial gastroenteritis: cohort study. *BMJ* 1999; **318:** 565-566.

22. Lionis C, Tziraki M, Bardis V, Philalithis A. Seeking quality improvement in primary care in Crete, Greece: the first actions. *Croatian Medical Journal* 2004; **45:** 509-603.

Υπάρχουν διαγνωστικά εργαλεία για την αναγνώριση των λειτουργικών διαταραχών του πεπτικού συστήματος κατάλληλα για την ΠΦΥ στην Ελλάδα;

Identifying dyspepsia in the Greek population: translation and validation of a questionnaire.

F. Anastasiou,
N. Antonakis,
G. Chaireti,
P. N. Theodorakis and
C. Lionis

Anastasiou F, Antonakis N, Chaireti G, Theodorakis PN, Lionis C. ***Identifying dyspepsia in the Greek population: translation and validation of a questionnaire.*** *BMC Public Health. 2006 Mar 4;6:56.*

BMC Public Health

BioMed Central

Research article

Open Access

Identifying dyspepsia in the Greek population: translation and validation of a questionnaire

Foteini Anastasiou*[1], Nikos Antonakis[2], Georgia Chaireti[3], Pavlos N Theodorakis[1] and Christos Lionis[1]

Address: [1]Clinic of Social and Family Medicine, Department of Social Medicine, Faculty of Medicine, University of Crete, Greece, P.O. Box: 2208, 71003, Heraklion, Crete, Greece, [2]Health Centre of Anogia, 74051 Anogia Crete, Greece and [3]Health Centre of Agia Barbara, 70003, Agia Barbara, Crete, Greece

Email: Foteini Anastasiou* - fanast@med.uoc.gr; Nikos Antonakis - antonakisnikos@yahoo.gr; Georgia Chaireti - giohereti@yahoo.gr; Pavlos N Theodorakis - paultheodorakis@yahoo.com; Christos Lionis - lionis@galinos.med.uoc.gr

* Corresponding author

Published: 04 March 2006

BMC Public Health 2006, **6**:56 doi:10.1186/1471-2458-6-56

Received: 27 July 2005

Accepted: 04 March 2006

This article is available from: http://www.biomedcentral.com/1471-2458/6/56

Abstract

Background: Studies on clinical issues, including diagnostic strategies, are considered to be the core content of general practice research. The use of standardised instruments is regarded as an important component for the development of Primary Health Care research capacity. Demand for epidemiological cross-cultural comparisons in the international setting and the use of common instruments and definitions valid to each culture is bigger than ever. Dyspepsia is a common complaint in primary practice but little is known with respect to its incidence in Greece. There are some references about the Helicobacter Pylori infection in patients with functional dyspepsia or gastric ulcer in Greece but there is no specific instrument for the identification of dyspepsia. This paper reports on the validation and translation into Greek, of an English questionnaire for the identification of dyspepsia in the general population and discusses several possibilities of its use in the Greek primary care.

Methods: The selected English postal questionnaire for the identification of people with dyspepsia in the general population consists of 30 items and was developed in 1995. The translation and cultural adaptation of the questionnaire has been performed according to international standards. For the validation of the instrument the internal consistency of the items was established using the alpha coefficient of Chronbach, the reproducibility (test – retest reliability) was measured by kappa correlation coefficient and the criterion validity was calculated against the diagnosis of the patients' records using also kappa correlation coefficient.

Results: The final Greek version of the postal questionnaire for the identification of dyspepsia in the general population was reliably translated. The internal consistency of the questionnaire was good, Chronbach's alpha was found to be 0.88 (95% CI: 0.81–0.93), suggesting that all items were appropriate to measure. Kappa coefficient for reproducibility (test – retest reliability) was found 0.66 (95% CI: 0.62–0.71), whereas the kappa analysis for criterion validity was 0.63 (95% CI: 0.36–0.89).

Conclusion: This study indicates that the Greek translation is comparable with the English-language version in terms of validity and reliability, and is suitable for epidemiological research within the Greek primary health care setting.

Background

Dyspepsia is a common complaint in primary health care (PHC) in most western countries, accounting for 5% of all consultations in general practice [1]. Studies in Europe have reported incidence rates for functional dyspepsia between 8 per 1000 person-years [2] to 13 per 1000 person-years [3]. In Greece there are some hospital-based data on the prevalence of Helicobacter Pylori infection [4,5] but primary care data are lacking. A project on measuring the frequencies of functional gastrointestinal disorders was established on Crete in 2001 and the need of an instrument practical for researchers and PHC physicians for the identification of dyspepsia in Greece was considered a priority. A thorough literature search did not reveal any specific instrument in the Greek language, with the exception of one that refers predominantly to the identification of functional bowel disease [6].

Several instruments have been developed for the identification of dyspepsia [7-10] and its impact on quality of life [11,12]. The English postal questionnaire for the Identification of Dyspepsia in the General Population (IDGP), which was developed and standardised in 1995 by T. Kennedy and R. Jones [10] was considered as appropriate for our purpose for certain reasons; it was developed for the general population; it was short in length and easy to answer (Yes/ No); that meant practical for use in everyday practice. According to the developers it was proved to be accurate and reliable in identifying people with dyspeptic symptoms. The questionnaire had been successfully used in a UK population study for the prevalence of gastro-esophageal reflux disease (GERD) symptoms [13].

This paper reports on the translation and validation of the IDGP and discusses several possibilities of its use in the Greek primary care.

Methods

Questionnaire

The original questionnaire consists of 8 short questions on demographics and a core part of 30 items, 29 of which are answered by Yes or No. An open question at the end of the questionnaire gives an opportunity for the patient to refer to what ever seems important for the matter and was not asked (Additional file 1). The IDGP classifies the symptoms into clinical subgroups namely dyspepsia, GERD like symptoms, past diagnosis of peptic ulcer. According to the questionnaire dyspepsia is diagnosed by the presence of "any of the symptoms of dyspepsia in the last year" [10]. GERD is likely when either heartburn or acid regurgitation is present also in the last year. Furthermore, the IDGP seeks the frequency of the dyspeptic and GERD like symptoms along with patients' consultation behaviour. The questionnaire proved to have a good internal consistency (an overall kappa coefficient 0.92) [10].

Translation

The translation and cultural adaptation of IDGP were performed according to "The Minimal Translation Criteria" [14]. Two independent bilingual physicians forward translated the questionnaire; two other physicians, native English speakers, then back translated the agreed Greek version. The agreed back translation was sent to the authors of the original questionnaire for comparison and their suggestions were incorporated into the final Greek version.

A cognitive debriefing process was then used for the cultural adaptation of the questionnaire [14]. This process was carried out in order to identify any areas presenting problematic language, and to assess the patient's level of understanding.

The questionnaire was administered to five attendants of a PHC centre, and comments made by them were discussed and included to the final Greek version.

Validation

Reliability was assessed by measuring internal consistency and reproducibility (test- retest reliability) [15,16]. Internal consistency was determined by checking the components of a questionnaire against each other, using Chronbach's alpha [17-19].

A minimum value of 0.70 for group and 0.90 for individual comparisons is generally desirable [19,20].

Reproducibility (test- retest reliability) is a measure of strength of association for determining stability of the questionnaire's results over time because it corrects for lack of independence between measurement intervals [15]. Forty consecutive PHC attendants visiting one rural PHC unit in Crete over a period of two months were recruited and asked to complete the questionnaire twice with an interval of 3 weeks. All participants had a record of upper abdominal symptoms during the past year; no one refused to complete the questionnaire. The overall Cohen's kappa coefficient was estimated [16].

Criterion validity refers to the extent to which the instrument correlates with a gold standard [21]. To define the criterion validity of the questionnaire, the diagnoses available in medical records of a fully qualified General Practitioner (GP) of the rural PHC unit were used as a gold standard to which we compared the outcome of the questionnaire given on the first visit. Kappa analysis was used in order to assess agreement between the diagnoses (dyspepsia / GERD or ulcer) as they were confirmed by the questionnaires and the GP. The diagnose of dyspepsia in our validation process was established according to the Rome II definition [22] by the positive answer to one or

Table 1: IDGP: Reproducibility (test- retest reliability).

DIAGNOSTIC CATEGORIES	K+	ITEM	K+
Dyspepsia	0.67	1	0.724
		4	0.609
		18	0.603
Frequent dyspepsia	0.61	2	0.358
		5	0.694
		19	0.691
GERD like symptoms	0.69	7	0.746
		10	0.694
		13	0.314
		14	0.730
		15	0.652
		21	0.658
		24	0.749
Frequent GERD like symptoms	0.71	8	0.700
		11	0.742
		16	0.698
		22	0.444
Consultation behaviour	0.49	3	0.413
		6	0.405
		9	0.336
		12	0.481
		17	0.688
		20	0.306
		23	0.278
		26	0.722
Investigation for organic gastric disease	0.80	28	0.653
		29	0.950
Past diagnosis of stomach or duodenal ulcer		27	0.688
Open question		30	0.615

+: Kappa coefficient

more of items 1, 4 or 18, (pain or discomfort, feeling of excess wind or fullness, nausea) combined with negative response on the items referring to GERD like symptoms. The diagnosis of GERD was made by the positive response to one of the items 7, 10, 13 and 15 (heartburn, heart burn when lying in bed, heartburn only when lying in bed, acid tasting fluid at the back of the throat). Ulcer was diagnosed when there was a positive answer to item 27 (past diagnosis of stomach or duodenal ulcer).

A factor analysis was performed in order to identify the separate factors, which make-up this questionnaire and highlight how the items group together [23]. Factor structure was studied by Principal Component Analysis using Varimax with Keiser Normalization as Rotation Method. Both Kaiser criteria for applicability were fulfilled [24]. An analysis on the patients' symptoms (items 1, 4, 7, 10, 13, 14, 15, 18, 21, 24) was performed and a factor was considered as important if its eigenvalue value exceeded 1.0 [23].

Ethics

The scientific committee of the University Hospital of Heraklion, Crete has approved this study (number of protocol: 7173/ 12/7/2000). All participants in the cultural adaptation and reproducibility (test- retest reliability) procedure were informed about the scope and the purpose of the study and provided their oral consent.

Results

Translation

The authors suggested changes to the demographic data section of the questionnaire and added questions regarding employment. They further suggested making all items referring to the duration of the symptom(s) more specific by replacing the phrase "the past year" with the phrase "the last 12 months" in accordance with the latest definitions of Rome II [22]. The concept of discomfort was also taken into account, and the word "discomfort" was added also to the second question according to the same criteria.

During the process of cultural adaptation only one of the five patients reported problems in comprehension of the questionnaire in the total. Problems were focused mostly

Table 2: Factor analysis for the symptoms: Rotated Component Matrix for 3 factors.

	Component		
SYMPTOMS	1	2	3
(Item 1) Pain or discomfort			0.870
(Item 4) Feeling of excess wind or fullness in the upper abdomen	0.566		
(Item 7) Heartburn	0.777		
(Item 10) Heartburn when lying in bed	0.882		
(Item 13) Heartburn only when lying in bed	0.483		
(Item 14) Awakened by the heartburn	0.861		
(Item 15) Acid taste at the back of the throat	0.555		
(Item 18) Nausea		0.816	
(Item 21) Vomiting		0.876	
(Item 24) Difficulty in swallowing	0.651		
Eigenvalues	3.60	1.40	1.13
Degree of explanation (%)	36.00	14.03	11.32

in expressions used and less in the understanding of the actual questions.

The two older and less educated participants reported some problems but any misunderstanding was solved after they read again the troubling question. No external help was given to the participants regarding the meaning of any of the questions. The suggestion of a bigger picture was accepted as well as the suggestion to explain in parenthesis the areas shown in the picture (Additional file 2).

Validation

The IDGP questionnaire showed a high overall internal consistency (alpha value: 0.88, 95% CI: 0.81–0.93) for individual comparison. Each diagnostic group also showed acceptable alpha values: 0.81 for dyspepsia; 0.76 for frequent dyspepsia; 0.82 for GERD like symptoms; 0.75 for frequent GERD like symptoms; 0.89 for investigation for organic gastric disease; 0.82 for past diagnosis of stomach or duodenal ulcer, while internal consistency was relatively low for consultation behaviour: 0.66 and for the open question: 0.72.

The overall Cohen's kappa coefficient for the reproducibility (test – retest reliability) of the questionnaire was found "substantial" (0.66, 95% CI: 0.62–0.71) [16]. Twenty-five of the 30 items had good reproducibility (Cohen's kappa coefficient>0.40), while the remaining five items had a fair reproducibility (Cohen's kappa coefficient<0.40). These results are illustrated in Table 1.

The kappa coefficient for criterion validity was also "substantial" (0.63, 95% CI: 0.36–0.89) and the overall agreement between the results of the questionnaire and the doctor's diagnose was 85%.

The performed factor analysis indicated three factors with eigenvalue over 1.0. Those factors were responsible for 61,34 % of variance and rotation converged in 4 iterations (Table 2).

Discussion

The development of academic general practice within the Mediterranean setting does not only need support and funds but also research capacity [25]. Studies on "clinical issues", including diagnostic strategies, are considered to be the core content of general practice research as a recent publication reported [26]. Thus, the use of standardised instruments is considered as an important component for the development of PHC research capability and some questionnaires measuring the frequency of health problems in primary care and the impact of ill conditions in quality of life of Greek patients have been already published [27,28]. Moreover, the increasing demand for epidemiological cross-cultural comparisons in the international setting and the use of common instruments and definitions valid to each culture is stronger than ever [21].

We focused on dyspepsia because it is a symptom with which patients frequently present to PHC services worldwide. In addition, no data regarding the prevalence of dyspepsia in primary care population in Greece have been reported. We followed international criteria for the translation, and the Greek version was well perceived by the participants in the pilot study. The validation process revealed a "substantial" Cohen's kappa coefficient for the questionnaire and the satisfactory Chronbach's alpha suggests that the instrument is reliable for the Greek setting. The criterion validity was also good supporting that our instrument was valid when we judged it with the diagno-

sis of the GP as a gold standard. The factor analysis of the symptoms revealed the shared variance of 3 separate factors.

However, there are some concerns in terms of its validation into Greek language and particularly: (a) in some questions reproducibility (test – retest reliability) was found to be fair to moderate. Those questions referred mostly to consultation behaviour and did not change the outcome of the questionnaire, thus they were not considered as a strong limitation for the use of the instrument.

(b) during the reproducibility (test – retest reliability) process patients were informed that they would be invited sometime in the future to answer the questionnaire for a second time. It was unavoidable for us to not disclosure this issue when we were seeking for permission and making aware the respondent about the scope of the study. However patients did not know when they would be asked again.

(c) the original questionnaire was developed prior to the Rome II consensus. Nevertheless it is approaching the Rome II definition of dyspepsia and the modified Greek version is much more closer to Rome II consensus.

(d) overlap with IBS is potential since there is no question referring to the bowel habits. The simultaneous use with an IBS specific instrument or a combined questionnaire for both diseases [29] is recommended.

(e) item 4 that refers to the "feeling of excess wind or fullness" is generally accepted as a symptom which is included in the dyspepsia definition, however in the factor analysis a potential overlap with the GERD like symptoms is indicated.

The translated and validated questionnaire is anticipated to be a practical instrument for primary care physicians in Greece; it can be applied in daily practice for identifying patients with dyspepsia. Greek speaking doctors who are practicing in Cyprus and other countries may find it helpful and the questionnaire could be used in epidemiological studies highlighting some of the missing information from Greece.

Conclusion

In conclusion, the Greek translated questionnaire appears to be a reliable and valid tool for the identification of dyspepsia in clinical practice. Due to its short length and consumption of time it seems to be a practical instrument in the Greek primary care.

List of Abbreviations

PHC: Primary Health Care.

IDGP: Identification of Dyspepsia in the General Population questionnaire.

GERD: Gastro-esophageal reflux disease.

GP: General Practitioner.

Competing interests

The author(s) declare that they have no competing interests.

Authors' contributions

CL conceived the study design, participated in the translation of the questionnaire, formed the layout of the manuscript and wrote the final draft of the manuscript.

FA participated in the translation of the questionnaire, contributed in the data collection, carried out the analysis and co- wrote the final manuscript.

NA carried out the statistical analysis and co- wrote the final manuscript.

GH participated in the data collection and interpretation.

PNT contributed in the data interpretation and the final manuscript.

All authors approved the final manuscript.

Additional material

Additional File 1

The original English questionnaire. *The original English questionnaire.*
Click here for file
[http://www.biomedcentral.com/content/supplementary/1471-2458-6-56-S1.doc]

Additional File 2

The Greek version of the questionnaire. *The final Greek version of the questionnaire.*
Click here for file
[http://www.biomedcentral.com/content/supplementary/1471-2458-6-56-S2.doc]

Acknowledgements

The authors would like to thank the authors of the original paper Prof. Roger Jones for his continues interest and encouragement and Dr Tom Kennedy for his important consultation during the translation and adaptation process.

We also thank Dr Anastasia Karamanidis and Dr Efi Frangoulis, for their attribute at the back translation of the questionnaire, Dr Marios Chatziarsenis director of the Health Centre of Neapolis and the staff for their

help at the pilot testing and Mr Athanasios K Alegakis for his consultation in statistical analysis.

References

1. Heading RC: **Prevalence of upper gastrointestinal symptoms in the general population: A systematic review.** *Scand J Gastroenterol* 1999:3-8.
2. Argeus L, Svardsudd K, Nyren O, Tibblin G: **Irritable bowel syndrome and dyspepsia in the general population: overlap and lack of stability over time.** *Gastroenterology* 1995, **109**:671-680.
3. Jones R, Lydeard S: **Dyspepsia in the community: a follow-up study.** *Br J Clin Pharmacol* 1992, **46**:95-97.
4. Archimandritis A, Sipsas N, Tryphonos M, Tsirantonaki M, Tjivras : **Significance of various factors in patients with functional dyspepsia and peptic ulcer disease in Greece. A comparative prospective study.** *M Ann Med Interne* 1995, **146**:299-303.
5. Archimandritis A, Bitsikas J, Tjivras M, Fertakis A, Anastasakou E, Pitsouni E, Marinis E, Davaris P: **Helicobacter pylori infection in Greece in healthy people and in patients with peptic ulcer and with dyspepsia without ulcer.** *Clin Gastroenterol* 1993, **16**:257-258.
6. Mouzas IA, Fragiadakis N, Moschandreas J, Karachristos A, Skordilis P, Kouroumalis E, Manousos ON: **Validation and results of a questionnaire for functional bowel disease in out-patients.** *BMC Public Health* 2002, **21(28** [http://www.pubmedcentral.gov/articlerender.fcgi?tool=pubmed&pubmedid=12022923].
7. Moayyedi P, Duffett S, Braunholtz D, Mason S, Richards ID, Dowell AC, Axon AT: **The Leeds Dyspepsia Questionnaire: a valid tool for measuring the presence and severity of dyspepsia.** *Aliment Pharmacol Ther* 1998, **12**:1257-1262.
8. Buckley MJ, Scanlon C, McGurgan P, O'Morain CA: **A validated dyspepsia symptom score.** *Ital J Gastroenterol Hepatol* 1997, **29**:487-490.
9. Drossman DA, Corazziari E, Talley NJ, Thompson WG, Whitehead WE: **The Rome II Modular Questionnaire.** In *The Functional Gastrointestinal Disorders* Edited by: McLean. Virginia: Degnon; 2000:670-688.
10. Kennedy T, Jones R: **Development of a postal status questionnaire to identify people with dyspepsia in the general population.** *Scand J Prim Health Care* 1995, **13**:243-247.
11. Bamfi F, Olivieri A, Arpinelli F, De Carli G, Recchia G, Gandolfi L, Norberto L, Pacini F, Surrenti C, Irvine SH, Apolone G: **Measuring quality of life in dyspeptic patients: development and validation of a new specific health status questionnaire: final report from the Italian QPD project involving 4000 patients.** *Am J Gastroenterol* 1999, **94**:730-738.
12. Talley NJ, Weaver AL, Zinsmeister AR: **Impact of functional dyspepsia on quality of life.** *Dig Dis Sci* 1995, **40**:584-589.
13. Kennedy T, Jones R: **The prevalence of gastro-oesophageal reflux in a UK population and the consultation behaviour of the patients with these symptoms.** *Aliment Pharmacol Ther* 2000, **14**:1589-1594.
14. Medical Outcomes Trust: **Trust introduces new translation criteria. Medical Outcomes.** *Trust Bulletin* 1997, **5**:1-4.
15. Lwanga SK, Lemeshow S: **Two -Sample situations.** In *Sample size determination in health studies* Geneva: World Health Organization; 1991:6-8.
16. Cohen J: **Statistical power analysis for the behavioural sciences.** 2nd edition. Edited by: Lawrence Erlbaum. New Jersey; 1988.
17. Marshall J, Hales L: **Essentials of Testing.** In *Reading* Massachusetts: Addison-Wesley Publishing Company; 1972.
18. Altman DG: **Some common problems in medical research.** In *Practical Statistics for Medical Research* Edited by: Chapman, Hall. London; 1997:396-439.
19. Cronbach LJ: **Coefficient Alpha and the Internal Structure of Tests.** *Psychometrika* 1951, **16**:297-334.
20. Scientific Advisory Committee of the Medical Outcomes Trust: **Assessing health status and quality-of-life instruments: attributes and review criteria.** *Qual Life Res* 2002, **11**:193-205.
21. Patrick DL, Wild DJ, Johnson ES, Wagner TH, Martin MA: **Cross-Cultural Validation of Quality of Life Measures.** In *Quality of Life Assessment: International Perspectives* Edited by: Orley J, Kuyken W. Berlin Heidelberg: Springer- Verlag; 1994:19-32.
22. Talley NJ, Stanghellini V, Heading RC, Koch KL, Malagelada JR, Tytgat GN: **Functional gastroduodenal disorders.** *Gut* 1999, **45(Suppl 2)**:37-42.
23. Bowling A: **The principles of research.** In *Research methods in health: investigating and health services* 2nd edition. Philadelphia: University Press, Mainhead; 2002:133-162.
24. Stevens J: **Applied Multivariate Statistics for the Social Sciences.** Edited by: Lawrence Erlbaum. London; 1992.
25. Lionis C, Carelli F, Soler JK: **Developing academic careers in family medicine within the Mediterranean setting.** *Fam Pract* 2004, **21**:477-478.
26. Lionis C, Stoffers HE, Hummer-Pradier E, Griffiths F, Rotar-Pavlic D, Rethans JJ: **Setting priorities and identifying barriers for general practice research in Europe. Results from an EGPRN meeting.** *Fam Pract* 2004, **21**:587-593.
27. Antonopoulou M, Ekdahl C, Sgantzos M, Antonakis N, Lionis C: **Translation and standardisation into Greek of the standardised general Nordic questionnaire for the musculoskeletal symptoms.** *Eur J Gen Pract* 2004, **10**:33-34.
28. Lionis C, Erevnidou K, Antonakis N, Argyriadou S, Vlachonikolis I, Katsamouris A: **CVI Research Group. Chronic venous insufficiency. A common health problem in general practice in Greece.** *Int Angiol* 2002, **21**:86-92.
29. Agreus L, Talley NJ, Svardsudd K, Tibblin G, Jones MP: **Identifying dyspepsia and irritable bowel syndrome: the value of pain or discomfort, and bowel habit descriptors.** *Scand J Gastroenterol* 2000, **35**:142-151.

Pre-publication history

The pre-publication history for this paper can be accessed here:

http://www.biomedcentral.com/1471-2458/6/56/prepub

Η ελληνική και αγγλική έκδοση του ερωτηματολογίου IDGP στο παράρτημα 6.5. και παράρτημα 6.6. αντίστοιχα.

Μπορούν να εφαρμοστούν τα διεθνή διαγνωστικά κριτήρια για το ΣΕΕ στην ΠΦΥ στην Ελλάδα;

Implementing the new diagnostic criteria for IBS in primary care patients in Greece: where does the truth lie?

F.Anastasiou[1,§],
I. A Mouzas[2],
J. Moschandreas[3],
E. Kouroumalis[2],
C. Lionis[1]

Submitted to BMC Gastroenterology March 2008

Reporting agreement between the new and old diagnostic criteria for IBS in primary care in Greece.

Foteini Anastasiou [1,§], Ioannis A Mouzas[2], Joanna Moschandreas[3], Elias Kouroumalis[2], Christos Lionis[1]

[1]Clinic of Social and Family Medicine, Department of Social Medicine, Faculty of Medicine, University of Crete, Greece
[2] Dept. of Gastroenterology, University Hospital of Heraklion
[3] Biostatistics Lab, Department of Social Medicine, Faculty of Medicine, University of Crete, Greece

[§]Corresponding author
Email addresses:
FA: fanast@med.uoc.gr
IM: mouzas@med.uoc.gr
JM: joanna@med.uoc.gr
EK: kouroum@med.uoc.gr
CL: lionis@galinos.med.uoc.gr

Abstract

Background

Irritable Bowel Syndrome (IBS) is frequently diagnosed in primary care. Its diagnosis is based on diagnostic criteria but their use is limited in primary care. We aimed to assess the diagnostic agreement between the older (Manning's and Rome II) and the new (Rome III) criteria for the diagnosis of IBS in primary care in Greece.

Findings

Medical records of 5 Health Centers in rural Crete, Greece, were reviewed for a four-year period and patients with the diagnosis of IBS were invited to a structured interview. Kappa agreement of the Rome III criteria with the criteria of Manning and Rome II was measured. One hundred and twenty three patients were eligible for interview and 67 (54.5%) participated. Forty-six (69%) fulfilled the Manning, 32(48%) the Rome II, and 16(24%) the Rome III criteria. Twenty-seven (40%) patients were identified as IBS according to the questionnaire for the identification of functional gastrointestinal diseases (FGIDs). The agreement of Rome III with Manning criteria was poor (Kappa =0.25). The agreement between the FGIDs questionnaire and the Manning, Rome II and Rome III criteria was: Kappa= 0.30, 0.31 and 0.24 respectively. Moderate agreement was found between the Rome II and III criteria (Kappa= 0.51).

Conclusions

Questionnaires and criteria deriving from expert's consensus meetings or tertiary hospitals are difficult to be applied in rural primary care where symptoms are underestimated by patients and complicated questions can be confusing.

Key words: Irritable Bowel Syndrome, functional gastrointestinal disorders, Guidelines, Primary Health Care, Greece.

Findings

Background

Irritable Bowel Syndrome (IBS) is frequently diagnosed in primary care. [1] During the last decades efforts to provide reliable diagnostic criteria for IBS have been undertaken, starting with the criteria of Manning [2] and the consensuses of Rome I, II and III. [3,4] Classification criteria such as Rome II developed through experts consensus may be less applicable to primary care IBS patients [5] and their implementation in primary and secondary health care settings does not seem to be widely adopted. [6, 7]

In Greece the subject of functional gastrointestinal disorders in primary health care seems to be neglected.[8,9] A recent study in rural Crete revealed that primary care physicians failed to diagnose these disorders.[8] This cross-sectional study led to the development of a database of patients with IBS. The advent of the new consensus (Rome III) on the diagnosis of IBS was an important incentive to explore to what extent the application of the new standards alters the diagnosis previously made within the primary care setting in Crete. This paper seeks to explore issues of diagnostic suitability and applicability of different classification criteria when they are used for IBS patients in primary care.

Setting and study population

The medical records of four Primary Health Care (PHC) centers and one primary surgery were reviewed from March 1996 till February 2000 with a methodology explained elsewhere.[8] All the patients with the diagnosis of IBS or spastic colitis or functional disorders of the large bowel were pooled together as IBS patients (ICPC 2: D93 / ICD10: K58). The estimated occurrence rate of the IBS patients in this cross-sectional study was 1.2 per 1000 person- years. [8] All the identified IBS patients were considered eligible for a structured interview.

Instruments

Each of the eligible patients was personally invited to a semi- structured interview. All interviews were performed by the same researcher during scheduled home visits and were based on a detailed personal and family history questionnaire. Co-morbidity and medication were documented both through direct questions during the interview and by patient's personal

insurance book. The Manning criteria for IBS and the Rome II criteria for IBS and dyspepsia were applied. [2, 3]
The questionnaire for the identification of dyspepsia in the general population (IDGP), which was translated and validated into Greek [10, 11] was applied in order to document co-morbidity with dyspepsia and GERD. It consists of 11 main questions answered by yes or no, on upper gastrointestinal symptoms together with frequencies and consultation behavior, and one open question .The questionnaire for the identification of functional gastrointestinal disorders (FGIDs) [12] was also used. This questionnaire based on the Rome I criteria through nine different sets of questions provides a detailed picture of patients gastrointestinal problems. Main questions on symptoms duration from this questionnaire combined with Rome's II three main diagnostic criteria extended our comparison towards Rome III criteria retrospectively. All the diagnostic criteria and the questions used for the Rome III are shown in Table 1.

Statistical analysis

Comparisons of the characteristics of participants and non-participants were made using the chi-squared test for categorical variables and the non-parametric Mann-Whitney test for possible age differences, as age appeared negatively skewed in each group. In the FGIDs questionnaire age is a criterion for the differential diagnosis of organic disease against IBS thus no comparison with age was performed for this questionnaire. The chance-corrected agreement between the Manning and the Rome II criteria compared with the new Rome III criteria was estimated using the Kappa coefficient. Possible age and sex differences between the proportions classified with IBS using the three criteria (Manning's, Rome II, and Rome III) were assessed using the Mann-Whitney test and Fisher's exact test respectively. Confidence intervals for single proportions, and for differences between proportions, were calculated using the normal approximation to the binomial distribution. SPSS version 15 was used for all statistical analyses (SPSS for Windows, release 15.0.0, and 6/9/2006. Chicago: SPSS Inc). The significance level was set to 5%.

Participation

The original database included 146 patients identified with the diagnosis of IBS. [8] Ten double entries were located. For thirteen entries, no date of birth was available. These patients were excluded due to the high possibility of synonymies. Finally, 123 patients were contacted for interview. Sixty-seven

patients participated in the interview (54.5%). A flowchart including reasons for non-participation is shown in Figure 1. The mean interval period between the original doctor's diagnosis and the interview was 6.4 (SD: 1.24) years. The characteristics of patients with IBS according to participation status are presented in Table 2. Age distribution was not found to differ between the two groups (Mann-Whitney z= - 1.543, p=0.123). There was weak evidence of an association between sex and participation status (X^2= 4.24 on 1df, p= 0.039), with more male non-participants than expected (25 observed, 20 expected) and fewer female non-participants (31 observed, 36 expected).

Old vs. new diagnostic criteria

From the 67 IBS patients that finally participated in the interview, 46 (69%, 95% CI: 58%-80%) fulfilled two or more of the Manning criteria by the time of interview. Thirty-two subjects (48%, 95% CI: 36%-60%) fulfilled the Rome II criteria, all of them were fulfilling the criteria of Manning. The modified Rome III questions/ criteria were satisfied by 16 subjects (24%, 95% CI: 14%-34%), which were all fulfilling both Rome II and Manning criteria also. Twenty-seven patients (40%, 95% CI: 29%-52%) satisfied the conditions for IBS according to the FGIDs questionnaire.

Poor agreement was found between the Rome III and the Manning criteria, kappa 0.25 (95% CI: 0.12 to 0.38). Only moderate agreement was found between the Rome II and Rome III criteria, Kappa 0.51(95% CI: 0.33 to 0.69). There was also poor agreement between the FGIDs questionnaire and the Manning, Rome II and the Rome III criteria with K=0.30 (95% CI: 0.12 to 0.49), K= 0. 31 (95% CI: 0.08 to 0.53) and K= 0.24 (95% CI: 0.01 to 0.46) respectively. Gender and age were not statistically significant risk factors for the positive diagnosis of IBS with any of the diagnostic criteria.

Co morbidity

Five (7.5%, 95% CI: 1.2%- 13.8%) of the participants stated that they did not suffer from any gastrointestinal symptom in the last 12 months prior to the interview.

The investigation for co morbidity with other gastrointestinal disorders revealed 31 patients (46%, 95% CI: 34%-58%) experiencing GERD like symptoms according to the IDGP questionnaire. Within this group of patients 24 (77.4%) were fulfilling the criteria of Manning, whereas 15 (48.4%) and 8 (25.8%) were fulfilling the Rome II and III criteria respectively. Nine of the 67 patients (13 %, 95% CI: 5% to 22%) patients had undergone cholecystectomy or experienced gall bladder problems in the past. Seven

(10.4%, 95% CI: 2.5% to18%) patients had dyspepsia according to the IDGP questionnaire and one patient had FD according to Rome II. Four of the patients (6%, 95% CI: 0.3% to12%) had been diagnosed with cancer (1 gastric, 1 ovarian, 2 cervical).
Sixteen patients were suffering from one or more gastrointestinal symptom (24%, 95% CI: 14% to 34%) without fulfilling any of the IBS criteria. Symptoms more frequently than 6 times per year were reported by 59 (88%) of the participants whereas 3 (0.4%) had symptoms less frequently.

The main findings of the study

In our study population more patients fulfilled Manning's criteria, fewer the Rome II and even fewer the Rome III criteria which proved the most restrictive. In previous studies the criteria of Manning and the Rome III criteria were found more sensitive in diagnosing IBS patients in primary care compared to Rome II. [13, 14, 15] The complexity of questions about the duration of symptoms might have played an important role for the difference between the Rome II and III criteria. It is also supported that criteria that are based on the frequency of symptoms have lower prevalence values compared to criteria based on the presence of symptoms. [15, 16] Our findings point out that IBS diagnosis, in rural areas of Crete, has not been based on complex criteria. In the same concept the FGIDs questionnaire revealed fewer patients as IBS than Manning and Rome II criteria and showed low agreement compared with all the criteria. This questionnaire was expected to be more restrictive to primary care population as there is a strong argument that primary care patients share different disease characteristics than outpatients. [17, 18]
High co-morbidity with GERD like symptoms was noted. The observed rate in our study (46 %) was among the highest reported according to a review of the international literature. [19] It is difficult to explain this prominent overlap and although both conditions are highly prevalent, the overlapping symptoms are lately attributed to a possible common disease process. [20] Co morbidity with dyspepsia was relatively low (10.4%) compared with other studies. [18]

The study findings in the light of other studies

Criteria developed by specialists have been criticized for low performance in primary care.[6, 21,22] Skepticism as to the degree of relevance of Rome diagnostic criteria for IBS with everyday clinical primary practice is developing and authors have suggested that the next consensus meeting on IBS should be interdisciplinary. [13,23] Our results are in agreement with

international literature on the low application of diagnostic criteria for IBS and especially the Rome II.[5] The Rome III criteria are considered as less restrictive and thus closer to primary care reality,[14,15] but in our study this role was not verified. In the Greek primary setting the number of visits to the doctor due to IBS was found low [8] compared to international data. In another study from Crete, again, IBS patients reported that they did not visit the PHC centre for their IBS problems frequently. [24] All data form a puzzle showing that in IBS patients in rural areas of Crete, both actual and as perceived by individuals, symptoms are rather underestimated. Further research is needed to confirm it.

Limitations of the study

Our study used the database of IBS patients identified in medical records during a retrospective research. Information as to what criteria were applied by primary care doctors was not available. In most cases the diagnosis alone was the only available data. Also poor demographic data entries resulted in high numbers of excluded or non-participating patients limiting in this way the strength of the results. For the majority of the non participating patients there were no available data about the presence of gastrointestinal symptoms. Thus a potential selection bias could be addressed.

Another limitation was the use of modified questions matching the Rome III instead of the actual Rome III criteria for a retrospective comparison. A similar approach was attempted in another study the results of which followed the pre existing research on Rome III. [14] Our study provides a hint on the application of the Rome III in IBS patients in rural Crete at a time where no other information is available.

The 6.4 years interval between the first diagnosis and the structured interview is another limitation as it could allow changes and overlaps with other gastrointestinal diseases a finding common in IBS patients. [25]This interval did not allow a direct comparison between the criteria and doctor's diagnosis, but the retrospective comparison between criteria at the time of interview was possible.

Implementation to practice and suggestions for future research

The low agreement between older and new criteria and the tendency for greater fulfillment of the criteria of Manning; reveals the necessity for a different approach to the diagnosis of IBS in primary care in rural areas of

Greece. This approach has been also highlighted in a consensus development for the diagnosis of IBS in primary care. [16] Clinical manifestations of IBS and co morbidity with other gastrointestinal diseases; both in primary care patient and the general population in rural Greece; should also be investigated in order to obtain a clear picture of the syndrome.

Conclusions

In Greek primary care, international diagnostic criteria display low agreement for the diagnosis of IBS. Amongst these, the newest criteria display worse results than expected. Questionnaires and criteria deriving from tertiary hospitals or expert's consensus meetings seem to be applied with difficulty in rural primary care where symptoms are underestimated by patients and complicated questions can be confusing.

List of abbreviations

IBS= Irritable Bowel Syndrome
IDGP=Identification of dyspepsia in the general population questionnaire
FGIDs=Identification of functional gastrointestinal diseases questionnaire
GERD= Gastro esophageal Reflux Disease
PHC= Primary Health Centre

Competing interests

The research programme received a grand from AstraZeneca Sweden.

Authors' contributions

CL, HC, IM, and FA conceived the idea. CL supervised the collection of data. FA collected and analysed the data, performed the interviews. JM performed all statistical analysis. FA, JM and CL prepared the first draft. All authors read and approved the final version of the manuscript.

Acknowledgements

The authors express their gratitude for the support of the study to the directors and staff at the participating PHC Centres on Crete. Specific thanks are extended to Dr N Antonakis, GP at the Anogia Health Centre; Dr M Bathianaki, GP at the Archanes Primary Health Care Unit; Dr A Batikas, GP at the Perama Health Centre, Dr M Chatziarsenis, Medical Director at the Neapolis Health Centre-General Hospital; and Mrs A Romanidou, midwife at the Spili Health Centre, for their contribution to the data collection. Special thanks to Dr Ada Markaki for her valuable corrections on the linguistics of the manuscript.

References

1. Thompson WG, Heaton KW, Smyth GT, Smyth C. **Irritable bowel syndrome in general practice: prevalence, characteristics, and referral.** Gut 2000, **46**: 78-82.

2. Manning AP, Thompson WG, Heaton KW, Morris AF. **Towards positive diagnosis of the irritable bowel.** *Br Med J*. 1978, **2**(6138):653-654.

3. N J Talley, V Stanghellini, R C Heading, K L Koch, J R Malagelada, and G N J Tytgat. **Rome II: A Multinational Consensus Document on Functional Gastrointestinal Disorders, Functional gastroduodenal disorders**. Gut 1999, **45** (Suppl 2): ii37-ii42

4. Tack J., Talley NJ. Camilleri M., Holtmann G., Hu PJ., Malagelada J-R., Stanghellini V., **Functional Gastroduodenal Disorders.** Gastroenterology 2006, **130**:1466–1479

5. Vandvik PO, Aabakken L, Farup PG. **Diagnosing irritable bowel syndrome: poor agreement between general practitioners and the Rome II criteria.** Scand J Gastroenterol. 2004, **39**:448-453.

6. Lea R, Hopkins V, Hastleton J, Houghton LA, Whorwell PJ. **Diagnostic criteria for irritable bowel syndrome: utility and applicability in clinical practice.** Digestion. 2004, **70**:207-209.

7. Spiegel MR, **Do physicians follow evidence-based guidelines in the diagnostic work-up of IBS?** Nat Clin Pract Gastroenterol Hepatol. 2007, **4**:296-297.

8. Lionis C, Olsen-Faresjo A, Anastasiou F, Wallander MA, Johansson S, Faresjo T. **Measuring the frequency of functional gastrointestinal disorders in rural Crete: a need for improving primary care physicians' diagnostic skills.** Rural Remote Health. 2005, **5**:409.

9. Papatheodoridis GV, Karamanolis DG. **Prevalence and impact of upper and lower gastrointestinal symptoms in the Greek urban general population.**Scand J Gastroenterol. 2005, **40**:412-421.

10. Kennedy T, Jones R. **Development of a postal health status questionnaire to identify people with dyspepsia in the general population.** Scand J Prim Health Care. 1995, **13**:243-249

11. Anastasiou F, Antonakis N, Chaireti G, Theodorakis PN, Lionis C. **Identifying dyspepsia in the Greek population: translation and validation of a questionnaire.** BMC Public Health. 2006, **6**:56

12. Mouzas IA, Fragiadakis N, Moschandreas J, Karachristos A, Skordilis P, Kouroumalis E, Manousos ON. **Validation and results of a questionnaire for functional bowel disease in out-patients.** BMC Public Health 2002,

2:8. Available from: URL: http://www.pubmedcentral.gov/articlerender.fcgi?tool=pubmed&pubmedid=120229237.
13. Longstreth GF. **Definition and classification of irritable bowel syndrome: current consensus and controversies.** Gastroenterol Clin North Am. 2005, **34**:173-187.
14. Sperber AD, Shvartzman P, Friger M, Fich A. **A comparative reappraisal of the Rome II and Rome III diagnostic criteria: are we getting closer to the 'true' prevalence of irritable bowel syndrome?** Eur J Gastroenterol Hepatol. 2007, **19**:441-447.
15. Gwee KA. **Irritable bowel syndrome and the Rome III criteria: for better or for worse?** Eur J Gastroenterol Hepatol. 2007, **19**:437-439.
16. Rubin G, De Wit N, Meineche-Schmidt V, Seifert B, Hall N, Hugin P, **The diagnosis of IBS in primary care: consensus development using nominal group technique.** Family Practice Fam Pract. 2006, **23**:687-692.
17. Agreus L. **Rome? Manning? Who cares?** Am j Gastroenterol. 2000, **95**:2816-2824
18. Agréus L, Svärdsudd K, Nyrén O, Tibblin G. **Irritable bowel syndrome and dyspepsia in the general population: overlap and lack of stability over time. Gastroenterology.** 1995, **109**:671-680.
19. Nastaskin I, Mehdikhani E, Conklin J, Park S, Pimentel M. **Studying the overlap between IBS and GERD: a systematic review of the literature.** Dig Dis Sci. 2006, **51**:2113-2120.
20. Talley NJ. **Overlapping abdominal symptoms: why do GERD and IBS often coexist?** Drugs Today (Barc). 2006, **42** (Suppl B):3-8.
21. Gladman LM, Gorard DA. **General practitioner and hospital specialist attitudes to functional gastrointestinal disorders.** Aliment Pharmacol Ther 2003, **17**: 651-654.
22. Charapata C, Mertz H. **Physician knowledge of Rome symptom criteria for irritable bowel syndrome is poor among non-gastroenterologists.** Neurogastroenterol Motil. 2006, **18**:211-216.
23. Enck P, Martens U. [**The Next Consensus for the Irritable Bowel Syndrome has to be Interdisciplinary.][Article in German]** Z Gastroenterol. 2008, **46**:211-215.
24. Vasilopoulos T, Efthymiou C, Zagora E. **A further exploration of patients with IBS in rural Crete. Rural Remote Health.** 2006, **6**:626.
25. El-Serag HB, Pilgrim P, Schoenfeld P. **Systemic review: Natural history of irritable bowel syndrome.** Aliment Pharmacol Ther. 2004, **19**:861-870

Figure legends

Figure 1: Flow chart of IBS patients

Tables

Table 1. ***All diagnostic criteria for IBS and the questions matching Rome III***

Manning Criteria Abdominal pain with 2 or more of the following: 1. Abdominal pain relieved by defecation; and /or 2. Abdominal pain onset associated with more frequent stools; and/or 3. Abdominal pain associated with looser stools; and/ or 4. Abdominal distension or bloating; and/or 5. Feeling of incomplete defecation; and/or **6.** Mucus in stools **(Br Med J 1978)**
Rome II Criteria for IBS At least 12 weeks or more, which need not be consecutive, in the preceding 12 months, of abdominal discomfort or pain that has 2 out of 3 features: 1. Relieved by defecation 2. Onset associated with a change in frequency of stool 3. Onset associated with a change in form (appearance) of stool Symptoms that Cumulatively Support the Diagnosis of IBS: 1. Abnormal stool frequency (may be defined as greater than 3 bowel movements per day and less than 3 bowel movements per week); 2. Abnormal stool form (lumpy/hard or loose/watery stool); 3. Abnormal stool passage (straining, urgency, or feeling of incomplete evacuation); 4. Passage of mucus; 5. Bloating or feeling of abdominal distension. **(Gut. 1999)**

Rome III
Recurrent abdominal pain or discomfort at least 3 days per month in the last 3 months associated with 2 or more of the following:
1. Improvement with defecation
2. Onset associated with a change in frequency of stool
3. Onset associated with a change in form (appearance) of stool

Criteria fulfilled for the last 3 months with symptom onset at least 6 months prior to diagnosis.
(Gastroenterology 2006)

Rome III matching questions from the interview
Abdominal discomfort or pain

1. Relieved by defecation
2. Onset associated with a change in frequency of stool
3. Onset associated with a change in form (appearance) of stool

(Rome II)

1. "How many times per week do you experience the symptoms? (1 per week /less frequent/ more frequent)". Patients who answered that they experienced the symptoms less than one time per week were considered as negative for the Rome III criteria.

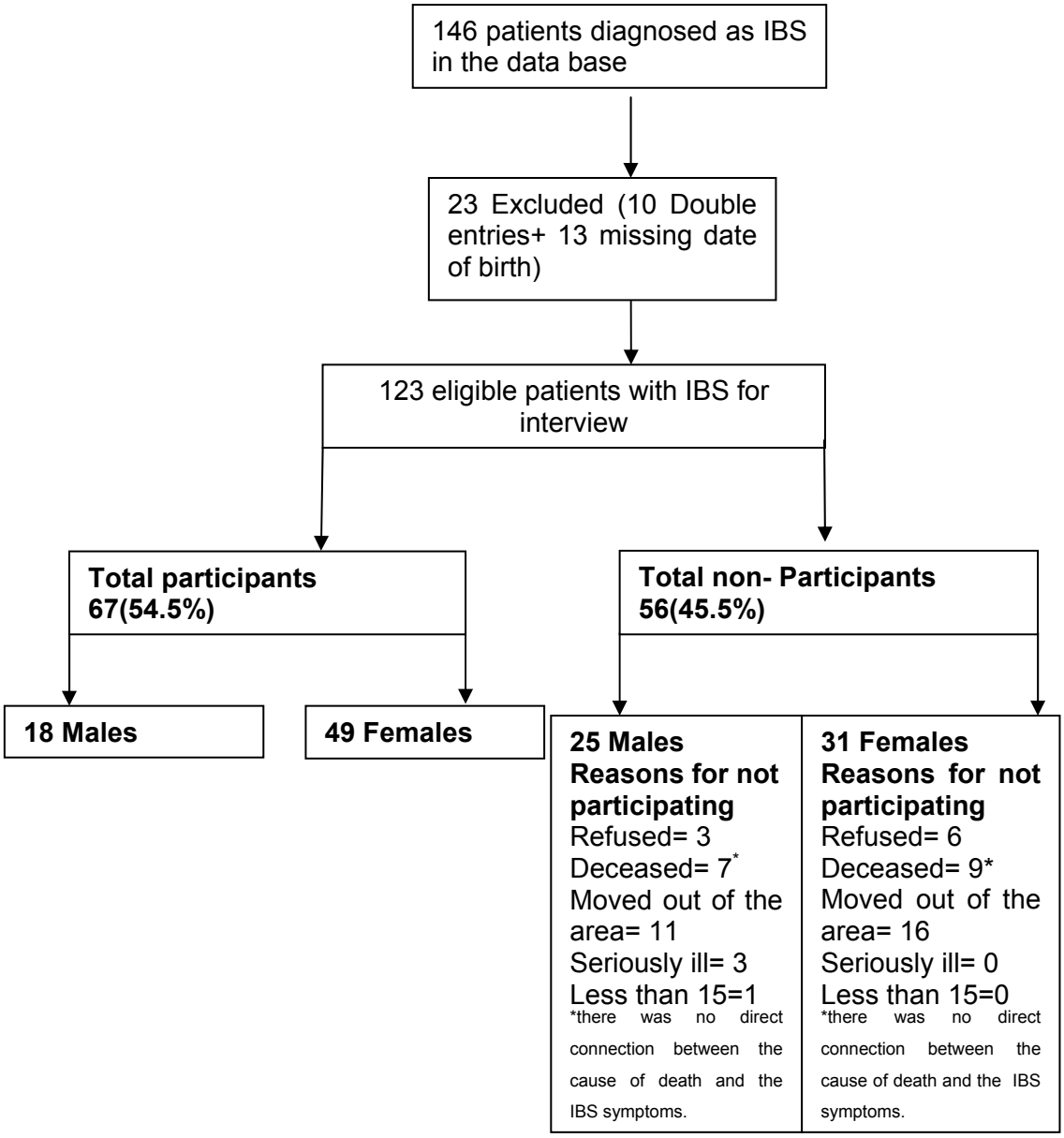
2. "For how long have you been experiencing the symptoms? (1 year/ 2 years/ 5 years)". When patients answered that they had been experiencing the symptoms for less than a year the duration was noted (in months).

(FGIDs questionnaire)

Table 2. Characteristics of the 123 patients diagnosed as having IBS

	Overall N 123, (100%)	Participants N 67, (55%)	Non-participants N 56, (45%)	Significance p=0.039
Sex				
Male	43 (35%)	18 (27%)	25 (44.5%)	
Female	80 (65%)	49 (73%)	31 (55%)	
Median age (min-max)	71 (20-97)	70 (28-92)	76 (20-97)	p=0.342
Age groups				
25-44		7 (10.4%)	4 (7%)	
45-64		25 (37.3%)	14 (25%)	
65-79		25 (37.3%)	15 (26.7%)	
>80		10 (14.9%)	22 (39.3%)	
Education				
None		6 (9 %)	Not known in most cases	
Primary		50 (74.6%)		
Secondary		11 (16.4%)		

Figure 2: Flow chart of IBS patients



Ποιά είναι η ποιότητα ζωής των ασθενών με διαγνωσμένο σύνδρομο ευερεθίστου εντέρου στην Ελλάδα;

Health-related quality of life of irritable bowel syndrome patients in different cultural settings.

A .Faresjö,
F. Anastasiou,
C. Lionis,
S. Johansson,
MA. Wallander,
T. Faresjö.

Faresjö A, Anastasiou F, Lionis C, Johansson S, Wallander MA, Faresjö T. ***Health-related quality of life of irritable bowel syndrome patients in different cultural settings.*** *Health Qual Life Outcomes. 2006 Mar 27;4:21.*

Health and Quality of Life Outcomes

BioMed Central

Research

Open Access

Health-related quality of life of irritable bowel syndrome patients in different cultural settings

Åshild Faresjö*[1], Foteini Anastasiou[2], Christos Lionis[2], Saga Johansson[3,5], Mari-Ann Wallander[4,5] and Tomas Faresjö[6]

Address: [1]Social Medicine and Public Health Science, Dept of Health and Society, Linköping University, Linköping, Sweden, [2]Clinic of Social and Family Medicine, School of Medicine, University of Crete, Greece, [3]Cardiovascular Institute, University of Gothenburg, Gothenburg, Sweden, [4]Dept of Public Health and Caring Science, Uppsala University, Uppsala, Sweden, [5]Dept of Epidemiology, AstraZeneca R&D, Mölndal, Sweden and [6]General Practice and Primary care, Dept of Health and Society, Linköping University, Linköping, Sweden

Email: Åshild Faresjö* - ashfa@ihs.liu.se; Foteini Anastasiou - fanast@hotmail.com; Christos Lionis - lionis@galinos.med.uoc.gr; Saga Johansson - saga.johansson@astrazeneca.com; Mari-Ann Wallander - mari-ann.wallander@astrazeneca.com; Tomas Faresjö - tomfa@ihs.liu.se

* Corresponding author

Published: 27 March 2006

Health and Quality of Life Outcomes 2006, **4**:21 doi:10.1186/1477-7525-4-21

Received: 01 January 2006
Accepted: 27 March 2006

This article is available from: http://www.hqlo.com/content/4/1/21

Abstract

Background: Persons with Irritable bowel syndrome (IBS) are seriously affected in their everyday life. The effect across different cultural settings of IBS on their quality of life has been little studied. The aim was to compare health-related quality of life (HRQOL) of individuals suffering from IBS in two different cultural settings; Crete, Greece and Linköping, Sweden.

Methods: This study is a sex and age-matched case-control study, with n = 30 Cretan IBS cases and n = 90 Swedish IBS cases and a Swedish control group (n = 300) randomly selected from the general population. Health-related quality of life, measured by SF-36 and demographics, life style indicators and co-morbidity, was measured.

Results: Cretan IBS cases reported lower HRQOL on most dimensions of SF-36 in comparison to the Swedish IBS cases. Significant differences were found for the dimensions mental health ($p < 0.0001$) and general health ($p = 0.05$) even after adjustments for educational level and co-morbidity. Women from Crete with IBS scored especially low on the dimensions general health ($p = 0.009$) and mental health ($p < 0.0001$) in comparison with Swedish women with IBS. The IBS cases, from both sites, reported significantly lower scores on all HRQOL dimensions in comparison with the Swedish control group.

Conclusion: The results from this study tentatively support that the claim that similar individuals having the same disease, e.g. IBS, but living in different cultural environments could perceive their disease differently and that the disease might affect their everyday life and quality of life in a different way. The Cretan population, and especially women, are more seriously affected mentally by their disease than Swedish IBS cases. Coping with IBS in everyday life might be more problematic in the Cretan environment than in the Swedish setting.

Background

Irritable bowel syndrome (IBS) is a functional disorder of the gastrointestinal tract and a quite common digestive disease in the general population frequently diagnosed in general practice [1]. IBS is widespread in all societies and socio-economic groups. For most patients, it is a chronic condition often with severe consequences [2]. There is strong evidence in previous studies that persons with IBS reveal impaired health-related quality of life [3-5]. Although this disease is not life threatening, patients with IBS seem to be seriously affected in their everyday life [6-9].

In assessing the impact of a (chronic) disease such as IBS on sense of wellbeing and daily functioning, patient-centred outcome data of health-related quality of life (HRQOL) are essential [10-12]. Previous studies of the impact of IBS on quality of life have either used generic health-related quality of life measurements, such as SF-36, or IBS-specific HRQOL instruments [9,13-15]. Disease-specific measures are especially used in clinical trials, while generic HRQOL measures are designed to evaluate aspects that are applicable to a population and therefore can provide a basis for comparisons with data from the general population [9,16].

A similarity concerning IBS patient's reports of their symptoms has been revealed in the sense that the patterns of GI symptoms seem to be similar across the Western cultures [17]. But, how are these symptoms and discomforts perceived by those affected? What is the impact on quality of life in different cultural settings? Are there any cultural differences in this respect? In a comparative study of HRQOL between the UK and the US, it was found that IBS had a significant impact on quality of life in both countries, but that this impact appeared to be greater in the UK than in the US [2]. In a study in the US of racial differences in relation to IBS, similar HRQOL was found between white and non-white IBS patients [18]. In general, some research suggests that cultural differences have an impact on the daily activities and quality of life of the IBS patients, but this has not been studied extensively.

The aim of this study was to use the SF-36 questionnaire to compare health-related quality of life of individuals suffering from irritable bowel syndrome in two different European cultural settings.

Methods

Study design

The design of this study is a matched case-control study, with two different groups of cases, IBS cases from rural and semi-rural villages on Crete, Greece, and IBS cases from the city of Linköping, Sweden. The criteria for identifying the cases and creating the databases were the same in the Greek and the Swedish settings. In primary care, the severity of the IBS disease could vary from mild and moderate to severe. In addition to the identified cases, a Swedish control group of non-IBS cases was randomly selected from the general population in the same Swedish region.

The Greek group

Thirty cases with a diagnosis of IBS in the age groups between 17 and 65 years were identified through medical records at three health care centres on Crete. These 30 IBS cases are all actual cases in the age-group 17–65 years from a previous established IBS database with cases identified in a four-year retrospective survey of gastrointestinal problems in the population on Crete, which is reported elsewhere [19]. A medical doctor invited these 30 IBS cases to participate in an interview concerning health-related quality of life (the SF-36 questionnaire), demographics, life style indicators, gastrointestinal and other co-morbidity.

The Swedish group

The Swedish IBS cases and control group were matched for gender and age with the Cretan IBS cases. Each Cretan IBS case was matched following the data collection with three Swedish IBS cases (3:1) and with 10 Swedish control group (10:1) from the general population. The Swedish IBS cases and control group were randomly selected from a large, previously established database consisting of N = 723 IBS cases and N = 4500 individuals from the general population. This database is based on the results of a five-year retrospective survey of diagnosed IBS cases identified through medical records at three health care centres in the city of Linköping located in the south-east region of Sweden [20]. In this study, a postal questionnaire, including SF-36, demographics, lifestyle indicators, gastrointestinal and other co-morbidity were used. The questionnaire was also sent to a random sample of the general population in the same region. The response rate was 71% for the IBS cases and 63% for the general population.

Data collection

The same version of the generic health-related quality of life measure Short Form 36 (SF-36) was used in its Greek and Swedish translated form in this study. This instrument is well established and has been used extensively used in public health studies, epidemiology as well as in clinical trials [21,22]. The SF-36 includes eight multi-item scales that evaluate the extent to which an individual's health limits his or her physical, emotional and social functioning: physical functioning (10 items), role limitations caused by physical health problems (4 items), role limitations caused by emotional health problems (3 items), social functioning (2 items), emotional wellbeing (5 items), pain (2 items), energy/fatigue (4 items), and general health perceptions (5 items). All questions asked

Table 1: Comparison of demographically data and life style indicators between Cretan and Swedish IBS cases and between all IBS cases (from both sites) and Swedish control group

	Cretan IBS Cases (n = 30)		Swedish IBS cases (n = 90)			Swedish control group (n = 300)		
	n	%	n	%	p	n	%	p
Educational level					< 0.0001			< 0.0001
Primary (low)	19	63.3	18	20.0		64	21.4	
Secondary	6	20.0	23	25.6		68	22.7	
High school	4	13.3	16	17.8		54	18.1	
College/ University (High)	1	3.3	33	36.7		113	37.8	
Marrital status					0.14			0.20
Single	1	3.3	10	11.2		36	12.1	
Married or cohabiting	21	70.0	67	75.3		225	75.5	
Divorced or widow	8	26.7	12	13.5		37	12.4	
Occupational situation					0.001			< 0.0001
Full or part-time	11	36.7	64	71.1		220	73.6	
Student, on sick leave or unemployed, etc	19	63.3	26	28.9		79	26.4	
Smoking habits					0.01			0.05
Daily smoker	8	26.7	8	8.9		43	14.7	
Non-smoker	22	73.3	82	91.1		249	85.3	
Insomnia					< 0.0001			0.001
Yes	7	23.3	55	61.1		143	48.3	
No	23	76.7	35	38.9		153	51.7	
Experienced daily stress					0.30			< 0.0001
Very often or Often	16	53.3	55	64.0		96	33.7	
Seldom or Never	14	46.7	31	36.0		189	66.3	

concerned the previous four weeks, with the exception of an additional item that assesses change in the respondent's health over the preceding year. Responses to the SF-36 were transformed into a standard scale ranging from 0, the worst possible score, to 100, the best possible score [23].

In addition to the HRQOL instrument, the subjects on Crete and in Sweden answered questions concerning demographics such as educational level and civil status. Additionally, some life style indicators such as smoking habits (daily smoker vs. non-smoker) were measured. In the group non-smokers ex-smokers could also be included. The variable insomnia was based on a question of how often the respondent felt they had had difficulty in falling asleep in the evenings. Those who reported that they sometimes, very often or always suffered from insomnia were regarded as having insomnia. The variable "perceived daily stress" was based on a question about how the respondent experienced daily stress. Data on co-morbidity were collected in the form of self-reports and focused on past or present occurrence of gastrointestinal diseases and chronic diseases. Gastrointestinal co-morbidity measured was: reflux, gastroenteritis, known peptic ulcer and other gastrointestinal complaints. Co-morbidity of other, mainly chronic, diseases measured was: coronary

Table 2: Reports of current and previous gastrointestinal co-morbidity between Cretan and Swedish cases and between all IBS cases (from both sites) and Swedish control group

	Cretan IBS Cases (n = 30)		Swedish IBS cases (n = 90)			Swedish control group (n = 300)		
	n	%	n	%	p	n	%	p
Peptic ulcer					0.19			0.18
Yes	4	13.3	5	5.8		14	5.0	
No	26	86.7	82	94.2		267	95.0	
GI complaints					0.002			< 0.0001
Yes	11	36.7	60	68.2		66	23.2	
No	19	63.3	28	31.8		219	76.8	
Reflux					0.28			< 0.0001
Yes	9	30.0	35	41.2		56	19.5	
No	21	70.0	50	58.8		231	80.5	
Gastroenteritis					0.07			< 0.0001
Yes	16	53.3	30	34.5		63	22.2	
No	14	46.7	57	65.5		221	77.8	

heart diseases, high blood pressure, diabetes mellitus, asthma, allergy, rheumatoid arthritis and depression.

Ethics

The study was approved by the Research Ethics Committee of the Faculty of Health Sciences, Linköping University, Sweden and the Research Ethics Committee of the University Hospital of Heraklion, Crete, Greece.

Statistical methods

All data were stored in a common database and statistically analysed using the SPSS 13.0 programme (SPSS Inc., Chicago, IL, USA). Significance of differences between cases and control group for SF-36 scale was estimated using the 2-sided ANOVA test. The SF-36 comparisons between Cretan IBS cases and Swedish IBS cases were adjusted in multiple regressions for significant differences in the distribution of the variables; educational level and co-morbidity regarding coronary heart diseases, high blood pressure, rheumatoid arthritis and depression. For categorical variables, the chi^2 test was used and when expected frequencies fell below five, Fisher's exact test was applied. In general, a p-value of < 0.05 was considered statistically significant.

Results

The total of 420 participants in this study consist of n = 30 Cretan IBS cases, n = 90 Swedish IBS cases and n = 300 Swedish control group. The Swedish cases and control group were matched for gender and age with the Cretan cases. The ages of the cases and controls were distributed in the age groups as follows; 18–24 years: 3.3% (n = 14), age-group 25–44 years: 26.7% (n = 112) and age-group 45–64 years: 70.0% (n = 294). The gender distribution was 76.7% (n = 322) female and 23.3% (n = 98) male.

A comparison of some demographical data and life style indicators is presented in Table 1. The educational level of the Cretan IBS cases was significantly lower (p < 0.0001) than the Swedish IBS cases and control group. There were no significant differences in civil status between the groups. The number of full-time or part-time workers was significantly higher among the Swedish cases and control group in comparison with the Cretan IBS cases. The number of daily smokers was significantly higher among the Cretan IBS cases than among the Swedish cases and control group. Insomnia was most common among the Swedish IBS cases and also higher among the Swedish control group in comparison with the Cretan IBS cases. A significantly (p < 0.0001) larger proportion of the IBS cases from both Crete and Sweden experienced daily stress often or very often in comparison with the Swedish control group.

Reported previous or current gastrointestinal co-morbidity for the cases and control group is shown in Table 2. Previous or current gastrointestinal co-morbidity, with the exception ulcer, was significantly more frequently reported among the IBS cases in both locations than the matched Swedish control group. When comparing the two groups of IBS cases, previous GI complaints were significantly more frequently reported among the Swedish IBS cases. Among the Cretan IBS cases, there were more frequent reports of co-morbidity concerning coronary heart diseases (p = 0.036), high blood pressure (p = 0.021) and rheumatoid arthritis (p = 0.003) than among

Table 3: Comparison of health-related quality of life (SF-36) between Cretan and Swedish IBS cases and between all IBS cases (from both sites) and Swedish control group

	Cretan IBS Cases (n = 30)		Swedish IBS cases (n = 90)			Swedish control group (n = 300)		
	mean	sd	mean	sd	P*	mean	sd	p
Physical function	73.7	30.4	83.9	21.4	0.57	88.9	15.2	< 0.0001
Physical role	75.0	43.1	71.8	35.9	0.21	84.9	28.9	0.002
Bodily pain	61.0	31.7	67.2	23.5	0.88	80.7	20.8	< 0.0001
General health	50.4	22.4	63.3	23.5	0.05	75.0	19.9	< 0.0001
Vitality	55.0	31.4	52.1	23.7	0.52	66.7	20.5	< 0.0001
Social function	74.6	36.0	77.5	25.5	0.52	89.4	17.6	< 0.0001
Emotional role	74.4	34.7	76.5	35.8	0.71	86.9	26.9	0.004
Mental health	50.0	26.0	72.1	17.1	< 0.0001	79.5	17.3	< 0.0001

*Adjusted in multiple regressions for; educational level and present or past co-morbidity of coronary heart diseases, high blood pressure, rheumatoid arthritis and depression.

the Swedish IBS cases. Depression, on the other hand, was more frequently reported (p = 0.026) among the Swedish IBS cases than the Cretan IBS cases. There were no differences in the occurrence of co-morbidity such as diabetes mellitus, asthma and allergy between the Cretan and Swedish IBS cases.

A general tendency was that the Cretan IBS cases reported lower HRQOL on six of the eight dimensions of SF-36 than the Swedish IBS cases, see Table 3. These differences were most evident in the dimensions general health and mental health. After adjustments in multiple regressions for the differences in the distribution of educational level and occurrence of present or past co-morbidity (coronary heart disease, high blood pressure, rheumatoid arthritis and depression), the Cretan IBS cases nevertheless scored lower in general health (p = 0.05) and lower in mental health (p < 0.0001) than the age and sex-matched Swedish IBS cases. A gender analysis revealed that Cretan women with IBS scored especially low on the dimensions general health p = 0.009 (mean score: 48.0 s.d: 20.3) and mental health p < 0.0001 (mean score: 48.6 s.d: 24.9) in comparison with Swedish women with IBS (general health mean score: 62.3 s.d: 23.2 and mental health mean score: 71.0 s.d: 16.3). When analysed together, the IBS cases from both countries reported significantly lower scores on all quality of life dimensions in comparison with the Swedish control group.

Discussion

It is known that persons with the common digestive disease IBS reveal impaired HRQOL [3-5]. However, the impact on quality of life for those affected in different cultural settings has not been studied extensively. The results from this study tentatively indicate that there are differences in how persons with IBS on Crete, Greece, and in Linköping, Sweden, perceive their disease and how it affects their quality of life. This is especially noticeable as regards impaired mental health and reduced general health, where the Cretan IBS cases reported a lower HRQOL, even after adjustments for differences in the distribution of educational level and co-morbidity. However, there was no significant difference between the locations concerning social functioning. Since all the IBS cases in this study are identified in Cretan and Swedish primary care, the severity of the conditions can thus be expected to be the same in both locations.

The hypothesis that the impact of IBS on HRQOL varies in different cultural settings has also been supported by an earlier study where IBS patients in the UK and the US were compared [2]. Analyses of health-related quality of life without any comparisons between cultural settings have previously been presented for other gastrointestinal disorders such as inflammatory bowel disease (IBD) and ulcerative colitis in both Sweden and on Crete in Greece [30,31]. However, these studies focused on other gastrointestinal disorders than IBS and the subjects were hospital out- and in-patients and not in primary care and the general population and are thus not comparable to the present study.

A plausible explanation of the differences found in this study is that coping with IBS in everyday life might be more problematic in the Cretan environment than in Sweden and this represents the main finding. The outdoor living tradition and the warm climate with long and hot summers together with a higher risk of gastroenteritis in combination with the IBS disease might negatively influence their everyday quality of life. The disease might possibly also cause a feeling of being out of the ordinary when affected by a quite sensitive and slightly embarrassing condition. This might partly explain why the Cretan IBS cases, and especially the Cretan women, scored significantly lower on the mental health dimension.

The IBS cases from both locations reported experienced daily stress significantly more often than the Swedish con-

trol group. The link between IBS and psychosocial factors such as stress in everyday life has been reported in many earlier studies [33,34]. An interesting finding in this study was that significantly more Swedish IBS cases and controls reported insomnia than did Cretan cases. Sleeping problems have been found to be associated with the IBS disease in other studies [35,36]. Daily stress as well as insomnia is associated with modern society, but the individual's perception of these phenomena might be varying between different cultural environments.

The Cretan IBS cases come from rural and semi-rural villages on Crete while the Swedish cases and controls come from urban areas in Sweden, which adds contrast to the cultural differences between the sites. This difference is also reflected in the variables educational level and full-time or part-time work. These socio-demographic differences between the sites might have had an impact on the results that increased the differences in self-reported quality of life. The dissimilarity in the way the data collection was carried out in the Cretan and Swedish sites, interview versus postal survey, might also have had some influence on the results, but it is doubtful as to how and to what extent. In comparative studies, using the same way of collecting the data is always preferable. However, postal surveys are not readily available as a data collection method on Crete and the probable response rate can thus be expected to be very low. In terms of local conditions on Crete, interviews are the best way of collecting data. On the other hand, as regards Swedish conditions, postal surveys are quite appropriate and cost-effective as a method of collecting population-based data.

A possible uneven distribution of different types of co-morbidity between the Cretan and the Swedish IBS cases might affect HRQOL. Although we made adjustments for some co-morbidity in the analysis, we cannot rule out the possibility that the Cretan cases might to some extent be affected by other unmeasured co-morbidity apart from IBS, which might lead to lower HRQOL. But Cretan inhabitants are considered to be one of the healthiest populations in Europe and have attracted considerable interest from a public health point of view [24-26]. For example, the traditional Mediterranean diet represents a healthy nutritional pattern [27]. Explanations that Cretans might be more affected by other serious co-morbidity not measured in this study are thus not so plausible. All cases and controls in this study are matched, so the differences found are not a consequence of either of gender or age-related ill health.

There was no control group available from the Greek location at the time of this data collection and this reduces to some extent the degree of comparability between the sites. Recently, some preliminary general population normative SF-36 data [28] have been published. However, these data are not quite comparable, i.e. not from the same geographical area as the cases in our study since they were collected in the city of Athens and not rural or semi-rural of Crete, and, further, the data were insufficient to form an age and sex-matched Greek control group in the analysis. In the present study, the control group had to solely be a Swedish age and gender-matched control group from the same geographical area as the Swedish IBS cases. Nevertheless, this study design with age and gender matched-controls has been recommended for optimal measurement of HRQOL outcomes of gastrointestinal diseases [29]. There might be a general culturally related difference between the two countries in the perception of quality of life. In a study of HRQOL, comparing a healthy Greek population with national norms in the general populations in US and several European countries, it was found that the mean scores on all SF-36 dimensions reported by the Greek participants were considerably lower than those in the other nations [32].

The findings in this study emphasise that perceptions of living conditions and quality of life must be interpreted in the light of cultural differences between these two European locations. Cultural differences between these two settings were observed in both working and social life in the local community. The role and importance of health behaviour and health beliefs, the social environment including family and religious beliefs are also other cultural factors to be considered. These aspects and their relationship with the perception of quality of life concerning IBS patients need to be further elaborated in future studies.

Conclusion

The results from this study tentatively support the claim that similar individuals having the same disease, such as IBS, but living in different cultural environments could perceive their disease differently and that the disease might affect their everyday life and quality of life in a different way. Health planning interventions as well as medical treatment should take such findings into consideration, especially when models from another country are about to be adopted. These findings might also have implications for health planning, primary care management and clinical trials. Future studies comparing patients from different cultural environments will give a clearer picture of the real impact of IBS on quality of life.

Competing interests

The author(s) declare that they have no competing interests.

Authors' contributions

ÅF, FA, TF designed and coordinated this study. CL supervised the Greek data collection carried out by FA. ÅF performed all statistical analyses. ÅF, FA, TF, CL, SJ and M-AW interpreted the data and drafted and edited the manuscript. All authors read and approved the final manuscript.

Acknowledgements

This work was supported by a grant from AstraZeneca R&D, Mölndal, Sweden. We also want to express our gratitude to the staff at the participating primary health care centres in Sweden and on Crete, Greece.

References

1. Thompson WG, Heaton KW, Smyth GT, Smyth C: **Irritable bowel syndrome in general practice, characteristics and referral.** *Gut* 2000, **46:**78-82.
2. Hahn B, Yan S, Strassels S: **Impact of irritable bowel syndrome on quality of life and resource use in the United States and United Kingdom.** *Digestion* 1999, **60:**77-81.
3. El-Serag HB, Olden K, Bjorkman D: **Health-related quality of life among persons with irritable bowel syndrome: a systematic review.** *Aliment Pharmacol Ther* 2002, **16:**1171-1185.
4. El-Serag HB: **Impact of irritable bowel syndrome: prevalence and effect on health-related quality of life.** *Rev Gastroenterol Disord* 2003, **3:**S3-11.
5. Dean BB, Aguilar D, Barghout V, Kahler KH, Frech F, Groves D, Ofman JJ: **Impairment in work productivity and health-related quality of life in patients with IBS.** *Am J Manag Care* 2005, **11:**S17-26.
6. Whitehead WE, Burnett CK, Cook EW 3rd, Taub E: **Impact of irritable bowel syndrome on quality of life.** *Dig Dis Sci* 1996, **41:**2248-2253.
7. Pace F, Molteni P, Bollani S, Sarzi-Puttini P, Stockbrugger R, Porro GB, Drossman DA: **Inflammatory bowel disease versus irritable bowel syndrome: a hospital-based, case-control study of disease impact on quality of life.** *Scand J Gastroenterol* 2003, **38:**1031-1038.
8. Hulisz D: **The burden of illness of irritable bowel syndrome: current challenges and hope for the future.** *J Manag Care Pharm* 2004, **10:**299-309.
9. Longstreth GF, Bolus R, Naliboff B, Chang L, Kulich KR, Carlsson J, Mayer EA, Naesdal J, Wiklund IK: **Impact of irritable bowel syndrome on patients' lives: development and psychometric documentation of a disease-specific measure for use in clinical trials.** *Eur J Gastroenterol Hepatol* 2005, **17:**411-420.
10. Patrick DL, Erikson P: **Health status and health policy: Quality of life in health care evaluation and resource allocation.** Oxford University Press, New York; 1993.
11. Guyatt GH, Feeny DH, Patrick DL: **Measuring health-related quality of life.** *Ann Intern Med* 1993, **118:**622-629.
12. Wilson IB, Cleary PD: **Linking clinical variables with health-related quality of life. A conceptual model of patient outcomes.** *JAMA* 1995, **273:**59-65.
13. Drossman DA, Patrick DL, Whitehead WE, Toner BB, Diamant NE, Hu Y, Jia H, Bangdiwala SI: **Further validation of the IBS-QOL: a disease-specific quality of life questionnaire.** *Am J Gastroenterol* 2000, **95:**999-1007.
14. Groll D, Vanner S, Depew W, DaCosta L, Simon J, Groll A, Roblin N, Paterson W: **The IBS-36: A new quality of life measure for irritable bowel syndrome.** *Am J Gastroenterol* 2002, **97:**962-971.
15. Wiklund IK, Fullerton S, Hawkey CJ, Jones RH, Longstreth GF, Mayer EA, Peacock RA, Wilson IK, Naesdal J: **An irritable bowel syndrome-specific questionnaire: development and validation.** *Scand J Gastroenterol* 2003, **38:**947-954.
16. Patrick DL, Deyo RA: **Generic and disease-specific measures in assessing health status and quality of life.** *Med Care* 1989, **27:**S217-232.
17. Talley NJ, Holtmann G, Agreus L, Jones M: **Gastrointestinal symptoms and subjects cluster into distinct upper and lower groupings in the community: a four nations study.** *Am J Gastroenterol* 2000, **95:**1439-1447.
18. Gralnek IM, Hays RD, Kilbourne AM, Chang L, Mayer EA: **Racial differences in the impact of irritable bowel syndrome on health-related quality of life.** *J Clin Gastroenterol* 2004, **38:**782-789.
19. Lionis C, Faresjö Å, Anastasiou F, Wallander M-A, Johansson S, Faresjö T: **Measuring frequencies of functional gastrointestinal disorders in rural Crete-A need for improving primary care physicians diagnostic skills.** *Rural Remote Health* 2005, **5:**409.
20. Faresjö Å, Foldevi M, Grodzinsky E, Johansson S, Wallander M-A: **Patients with irritable bowel syndrome in primary care appear not to be heavy healthcare utilizers.** *Aliment Pharmacol Ther* 2006, **23:**807-14.
21. Ware JE, Sherbourne CD: **A 36-item short-form health survey (SF-36): Conceptual framework and item selection.** *Med Care* 1992, **30:**473-483.
22. McHorney CA, Ware JE Jr, Raczek AE: **The MOS 36-item short-form health survey (SF-36): psychometric and clinical tests of validity in measuring physical and mental constructs.** *Med Care* 1993, **31:**247-263.
23. Ware JE, Snow KK, Kosinsky M, Gandek B: **SF-36 Health survey: manual and interpretation guide.** The Health Institute, New England Medical Center, Boston; 1993.
24. Fioretos M, Davidson K, Faresjö T, Alamanos Y, Koutis A, Lionis C, Trell E, Tsamandouraki K: **Hospital admissions in two European landscapes comparison between Heraklion, Greece and Linköping, Sweden.** *Int J Health Sci* 1993, **4:**33-40.
25. Simopoulos AP: **The Mediterranean diets: What is so special about the diet of Greece? The scientific evidence.** *J Nutr* 2001, **131:**S3065-3073.
26. Trichopoulou A, Bamia C, Trichopoulos D: **Mediterranean diet and survival among patients with coronary heart disease in Greece.** *Arch Intern Med* 2005, **165:**929-935.
27. Trichopoulou A: **Traditional Mediterranean diet and longevity in the elderly: a review.** *Public Health Nutr* 2004, **7:**943-947.
28. Pappa E, Kontodimopoulos N, Niakas D: **Validating and norming of the Greek SF-36 Health Survey.** *Qual Life Res* 2005, **14:**1433-1438.
29. El-Serag HB, Talley NJ: **Systematic review: Health related quality of life in functional dyspepsia.** *Aliment Pharmacol Ther* 2003, **18:**387-393.
30. Pallis AG, Vlachonikolis IG, Mouzas IA: **Assessing health-related quality of life in patients with inflammatory bowel disease, in Crete, Greece.** *BMC Gastroenterol* 2002, **2:**1.
31. Hjortswang H, Ström M, Almer S: **Health-related quality of life in Swedish patients with ulcerative colitis.** *Am J Gastroenterol* 1998, **93:**2203-2211.
32. Tountas Y, Demakakos PT, Yfantopoulos Y, Aga J, Houliara L, Pavi E: **The health related quality of life of the employees in the Greek hospitals: assessing how healthy are the health workers.** *Health Qual Life Outcomes* 2003, **1:**61.
33. Sinha L, Liston R, Testa T, Moriarty KJ: **Anxiety and irritable bowel syndrome.** *Lancet* 1996, **347:**617-618.
34. Sandler RS, Drossman DA, Nathan HP, McKee DC: **Symptom complaints and health care seeking behaviour in subjects with bowel dysfunction.** *Gastroenterology* 1984, **87:**314-318.
35. Orr WC, Crowell MD, Lin B, Harnish MJ, Chen JD: **Sleep and gastric function in irritable bowel syndrome derailing the brain-gut axis.** *Gut* 1997, **41:**390-393.
36. Vege SS, Locke GR 3rd, Weaver AL, Farmer SA, Melton LJ 3rd, Talley NJ: **Functional gastrointestinal disorders among people with sleep disturbances: a population-based study.** *Mayo Clin Proc* 2004, **79:**1501-1506.

4.Συζήτηση

4.1 Κύρια ευρήματα της μελέτης

Συχνότητα των λειτουργικών διαταραχών του πεπτικού συστήματος σε επισκέπτες μονάδων ΠΦΥ.

Το κύριο εύρημα την δημοσίευσης Ι ήταν ότι τόσο το ΣΕΕ όσο και η δυσπεψία βρέθηκαν σε χαμηλά ποσοστά σε σχέση με άλλες μελέτες σε ιατρεία γενικής ιατρικής.[55,56,87]

Το εύρημα αυτό μπορεί να αποδοθεί σε πολλούς παράγοντες που η μελέτη αυτή δε διερεύνησε. Ανάμεσα σε αυτούς θα μπορούσε να συζητηθεί η έλλειψη συστηματικής καταγραφής των περιπτώσεων στην ΠΦΥ, που έχει επισημανθεί και σε άλλη μελέτη.[88]

Άλλοι παράγοντες είναι το πολιτισμικό υπόβαθρο των ασθενών και κατ' επέκταση η αντίληψη της νόσου, τα οποία επηρεάζουν την αναζήτηση ιατρικής βοήθειας.[89] Είναι γνωστό επίσης, ότι και στην Ελλάδα, η εμπειρική ιατρική και η χρήση βοτάνων αποτελεί παράδοση ετών.[90,91,92.]

Άλλο ενδιαφέρον εύρημα από τη δημοσίευση Ι ήταν η υψηλή συχνότητα του ΣΕΕ στις μεγαλύτερες ηλικίες, εύρημα που δε συμβαδίζει με άλλες επιδημιολογικές μελέτες.[93,94] Παράγοντες που αναλύθηκαν παραπάνω, όπως το πρόβλημα της συστηματικής καταχώρησης της πληροφορίας, αλλά και οι πολιτισμικές ιδιαιτερότητες του αγροτικού πληθυσμού της Κρήτης, ενδεχόμενα να ερμηνεύουν και αυτό το εύρημα και να μην οφείλεται σε διαφορετική φυσική πορεία της νόσου στην Κρήτη.

Αν και στους σκοπούς της μελέτης δεν εντασσόταν η ανάπτυξη μιας αιτιώδους σχέσης βακτηριδιακής γαστρεντερίτιδας και ΣΕΕ,[33-35] εντούτοις τα εμπειρικά δεδομένα δεν συνηγόρησαν αρκετά στη διατύπωση μιας τέτοιας υπόθεσης αν και απαιτείται περαιτέρω μελέτη και έρευνα.

Διαγνωστικά εργαλεία για την αναγνώριση των λειτουργικών διαταραχών του πεπτικού συστήματος κατάλληλα για την ΠΦΥ στην Ελλάδα.

Το κύριο εύρημα της δημοσίευσης ΙΙ, ήταν ότι η ελληνική έκδοση του διαγνωστικού εργαλείου που επιλέχθηκε από τη διεθνή βιβλιογραφία μοιάζει να είναι το ίδιο αξιόπιστη και έγκυρη όσο και η πρωτότυπη έκδοση του. Μικρές μόνο διαφορές εντοπίσθηκαν στην στάθμιση του, αυτές αφορούν την

επαναληψιμότητα ορισμένων υποερωτήσεων και την αυξημένη συσχέτιση του συμπτώματος της επιγαστρικής πληρότητας με τη ΓΟΠΝ, οι οποίες αναλύονται στο άρθρο ii.
Με βάση τα αποτελέσματα αυτής της δημοσίευσης το IDGP μπορεί να χρησιμοποιηθεί με υψηλό βαθμό βεβαιότητας για τη διαγνωστική του ακρίβεια στον ελληνικό πληθυσμό και την ΠΦΥ.

Η εφαρμογή διεθνών διαγνωστικών κριτηρίων σε ασθενείς με ΣΕΕ στην ΠΦΥ στην Ελλάδα.

Η χρήση διαγνωστικών κριτηρίων υψηλής ευαισθησίας και ειδικότητας, αποτέλεσε βασικό πυλώνα στην έρευνα των ΛΔΠ τα τελευταία χρόνια. Η τελική φάση της μελέτης με τις συνεντεύξεις των ασθενών έδωσε τη δυνατότητα να συγκριθούν παλαιότερα και νεότερα κριτήρια για τη διάγνωση του ΣΕΕ. Παρόμοια σύγκριση δεν είχε πραγματοποιηθεί σε διαγνωσμένους ασθενείς με ΣΕΕ στην ΠΦΥ στην Ελλάδα. Η έως σήμερα βιβλιογραφία υποστήριζε ότι τα κριτήρια Ρώμης III αναγνωρίζουν υψηλότερα ποσοστά ασθενών με ΣΕΕ σε σχέση με τα προγενέστερα τους (Ρώμη II).[6,95-98.] Το κύριο εύρημα αυτής της μελέτης ήταν η μικρή συμφωνία των κριτηρίων Ρώμης III με τα αντίστοιχα Ρώμης II, εύρημα που συνηγορείται και από άλλες δημοσιεύσεις.[99,100.] Η μικρότερη ευαισθησία των κριτηρίων Ρώμης III έναντι των Ρώμης II που αποκαλύφθηκε σε αυτή τη μελέτη, θα πρέπει να συνεκτιμάται στη λήψη απόφασης από τους Γενικούς Γιατρούς στην ΠΦΥ.

Ποιότητα ζωής των ασθενών με διαγνωσμένο ΣΕΕ στην Ελλάδα..

Ένα ενδιαφέρον εύρημα της δημοσίευσης IV ήταν ότι η ποιότητα ζωής των ασθενών με ΣΕΕ από την αγροτική Κρήτη ήταν περισσότερο επηρεασμένη από αυτήν ασθενών από τη Σουηδία. Πιθανόν και εδώ το διαφορετικό πολιτισμικό υπόβαθρο που συζητήθηκε παραπάνω να ευθύνεται για το αποτέλεσμα αυτό.[101] Αρκετές εργασίες έχουν γίνει ανάμεσα σε αφροαμερικανούς και λευκούς στις ΗΠΑ και έδειξαν διαφορές στη συχνότητα της εμφάνισης των λειτουργικών διαταραχών όχι όμως και στην επίδραση τους στην ποιότητα ζωής των ασθενών.[102-104.] Παράγοντες όπως οι κοινωνικές συναναστροφές, οι διατροφικές συνήθειες[105] μαζί με τα θερμά και μεγάλα καλοκαίρια και τα αυξημένα ποσοστά γαστρεντερίτιδας[33-36,106] θα μπορούσαν να ενοχοποιηθούν για τη βαρύτητα των συμπτωμάτων ΣΕΕ και τελικά την επηρεασμένη ποιότητα ζωής των ασθενών στην Ελλάδα.

4.2.Μεθοδολογικοί περιορισμοί μελέτης

Η διδακτορική διατριβή στηρίχθηκε σε μια μελέτη επιπολασμού πού εξέτασε εγγραφές ιατρών σε ΚΥ της Κρήτης και δεν είμαστε βέβαιοι σε ποιο βαθμό τα δεδομένα της αντανακλούν την πραγματική συχνότητα των ΛΔΠ στο γενικό πληθυσμό. Επίσης δεν είναι βέβαιο σε ποιο βαθμό τα αποτελέσματα αυτά μπορούν να γενικευτούν σε όλη την επικράτεια, αν και δεν υπάρχουν ενδείξεις ότι τα ΚΥ της υπόλοιπης Ελλάδας διαφέρουν από αυτά της Κρήτης.
Μια άλλη ανησυχία σχετική με την εγκυρότητα των δεδομένων της μελέτης, προκύπτει από την έλλειψη ηλεκτρονικών βάσεων δεδομένων στα ΚΥ και την απουσία κατευθυντήριων οδηγιών για τα νοσήματα του πεπτικού συστήματος, διαθέσιμων στους γιατρούς ΠΦΥ. Το γεγονός καθιστά ακόμη πιο δύσκολη την εξαγωγή επιδημιολογικών συμπερασμάτων σχετικά με τη συχνότητα των νόσων. Η ανεπάρκεια αυτή όμως μεταφράζεται σε σημαντικό εύρημα της μελέτης και υπογραμμίζεται στη δημοσίευση i.
Προβληματισμό προκάλεσε και η μεθοδολογία για τη σύγκριση με τα κριτήρια Ρώμης ΙΙΙ. Η αναδρομική εξαγωγή συμπερασμάτων αν και δεν αποτελεί την ενδεικνυόμενη τακτική, έχει ήδη χρησιμοποιηθεί και από άλλους συγγραφείς, η μελέτη των οποίων όμως, δεν κατέληξε στα ίδια συμπεράσματα.[98] Τα ευρήματα μας εντούτοις ενισχύονται μετά τη δημοσίευση δύο πρόσφατων ανεξάρτητων εργασιών, με παρόμοια αποτελέσματα.[99,100.]
Οι ασθενείς που δεν συμμετείχαν στην τελική συνέντευξη είναι ένας επίσης σημαντικός περιοριστικός παράγοντας, αφού υποστηρίζεται ότι μπορεί να έχουν τελείως διαφορετικό προφίλ νόσου σε σχέση με τους συμμετέχοντες.[107] Η σύγκριση μεταξύ των δύο ομάδων ασθενών στη μελέτη, δεν απέδειξε στατιστικώς σημαντικές διαφορές ως προς το φύλο και την ηλικία, παρόλο που υπήρχαν τάσεις για μεγαλύτερες απώλειες σε άρρενες άνω των 65 ετών.

4.3 Συνέπειες στη Γενική Ιατρική

Η παρούσα μελέτη δημιούργησε μία βάση δεδομένων γαστρεντερολογικών περιστατικών που θα μπορούσε να αποτελέσει πρότυπο για μελλοντική οργάνωση στο χώρο. Εξάλλου, η Ελληνική έκδοση του ερωτηματολόγιου για τη δυσπεψία που δημιουργήθηκε, έχει ήδη χρησιμοποιηθεί σε μελέτες σχετικές με τη διερεύνηση της δυσπεψίας στη Γενική Ιατρική στην Ελλάδα.[91,108.]
Η μελέτη ανέδειξε τις ελλείψεις στον τομέα της καταγραφής των ασθενών αλλά και της διαγνωστικής προσέγγισης τους από τους γιατρούς. Τα αποτελέσματα μπορούν να οδηγήσουν τους υπεύθυνους στη διαμόρφωση

προγραμμάτων εκπαίδευσης κατά τη διάρκεια της ειδίκευσης των ιατρών Γενικής Ιατρικής και της κλινικής τους άσκησης στην ΠΦΥ.
Από την παρούσα μελέτη φάνηκε ότι η εφαρμοσιμότητα των νεότερων διαγνωστικών κριτηρίων μοιάζει να είναι περιορισμένη στην Ελληνική πραγματικότητα και υπάρχει άμεση ανάγκη για συμφωνία σε διαγνωστικά κριτήρια των ΛΔΠ, κατάλληλα για την ΠΦΥ στην Ελλάδα.
Επίσης, η μελέτη ανέδειξε το βαθμό της επιβάρυνσης της ποιότητας ζωής των ασθενών με ΣΕΕ, δίνοντας έτσι γνώση που θα μπορούσε να βοηθήσει τους γιατρούς ΠΦΥ στον τομέα της θεραπευτικής προσέγγισης.

4.4 Συμπεράσματα

Η μελέτη των λειτουργικών διαταραχών του πεπτικού συστήματος στην ΠΦΥ κατάφερε να δώσει το περίγραμμα των συχνότερων λειτουργικών γαστρεντερικών διαταραχών και να αποτελέσει το έναυσμα για περεταίρω διερεύνηση τους από τους γενικούς γιατρούς.[108, 109.] Δημιούργησε μία βάση δεδομένων ασθενών που μπορεί να χρησιμοποιηθεί στο σχεδιασμό επόμενων μελετών, προσφέροντας επίσης ένα αξιόπιστο εργαλείο για τη διερεύνηση της δυσπεψίας.
Οι ΛΔΠ παρουσιάζονται στα αρχεία των ΚΥ αγροτικών περιοχών της Κρήτης, σε μικρότερο βαθμό από τον αναμενόμενο από τη διεθνή βιβλιογραφία. Οι διαγνώσεις δεν φαίνεται να ακολουθούν τα διεθνή διαγνωστικά κριτήρια. Τα νεότερα διαγνωστικά κριτήρια για το ΣΕΕ φαίνεται να έχουν χαμηλή συμφωνία. Συγκεκριμένα τα κριτήρια Ρώμης ΙΙΙ υστερούν έναντι των προγενέστερων τους. Το προφίλ των ασθενών με ΣΕΕ στα ΚΥ που συμμετείχαν, δεν παρουσιάζει ιδιαίτερες διαφορές με τα υπάρχοντα από άλλες χώρες δεδομένα, όσον αφορά στο φύλο και τη συνοσηρότητα. Ωστόσο, η ποιότητα ζωής των Ελλήνων ασθενών με ΣΕΕ φαίνεται ιδιαίτερα επηρεασμένη σε σύγκριση με ασθενείς και ομάδα ελέγχου από μια άλλη χώρα.

4.5 Προτάσεις για περαιτέρω έρευνα

Η διδακτορική διατριβή προσέφερε ένα ουσιαστικό υπόβαθρο για την κατανόηση των ΛΔΠ στην ΠΦΥ στην Ελλάδα. Η διατριβή αυτή δεν μπόρεσε όμως να απαντήσει σε θέματα όπως:

I. Η σχέση βακτηριδιακής γαστρεντερίτιδας και εμφάνισης ΣΕΕ,
II. Η σχέση του ΣΕΕ με την ηλικία των ασθενών και
III. Ο ρόλος των πολιτισμικών παραγόντων και της συμπεριφοράς απέναντι στη νόσο (illness behavior).

Τα θέματα αυτά απαιτούν περαιτέρω έρευνα.

5. Συντομογραφίες

ΛΔΠ = Λειτουργικές διαταραχές του πεπτικού συστήματος
ΠΦΥ= Πρωτοβάθμια Φροντίδα Υγείας
ΚΥ= Κέντρα Υγείας
ΣΕΕ= Συνδρόμου Ευερεθίστου Εντέρου
ΛΔ= Λειτουργικής Δυσπεψίας
ΓΟΠΝ= Γαστροοισοφαγική Παλινδρομική Νόσος

6.Βιβλιογραφία

1. Drossman DA. **The functional Gastrointestinal Disorders and the Rome Process.** Gastroenterology.2006; 130:1377-1390.

2. Christensen J. **Heraclides or the physician**. Gastroenterol Int. 1990; 3:45–48.

3. Dalton CB, Drossman DA, Hathaway JM, Bangdiwala SI. **Perceptions of physicians and patients with organic and functional gastrointestinal diagnoses.** Clin Gastroenterol Hepatol. 2004; 2(2):121-126.

4. Longstreth GF, Thompson WG, Chey WD, Houghton LA, Mearin F, Spiller RC. **Functional bowel disorders.** Gastroenterology. 2006; 130(5):1480-1491.

5. Tack J, Talley NJ, Camilleri M, Holtmann G, Hu P, Malagelada JR, Stanghellini V. **Functional gastroduodenal disorders.** Gastroenterology. 2006; 130(5):1466-1479.

6. Longstreth GF. **Definition and classification of IBS: current consensus and controversies.** Gastroenterol Clin North Am. 2005; 34:173–187.

7. Agreus L, Svardsudd K, Nyren O, et al**. Irritable bowel syndrome and dyspepsia in the general population: overlap and lack of stability over time.** Gastroenterology. 1995; 109:671–680.

8. van Kerkhoven LA, Eikendal T, Laheij RJ, van Oijen MG, Jansen JB. **Gastrointestinal symptoms are still common in a general Western population.** Neth J Med. 2008; 66(1):18-22.

9. Maxion-Bergemann S, Thielecke F, Abel F, Bergemann R. **Costs of irritable bowel syndrome in the UK and US.** Pharmacoeconomics. 2006; 24(1):21-37.

10. Von Korff M, Whitehead WE, Stang P, Saunders K, Jhingran P, et al. **Costs of care for irritable bowel syndrome patients in a health maintenance organization.** Am J Gastoenterol. 2001; 96:3122–3129.

11. Akehurst RL, Brazier JE, Mathers N, O'Keefe C, Kaltenthaler E, Morgan A, Platts M, Walters SJ. **Health-related quality of life and cost impact of irritable bowel syndrome in a UK primary care setting.** Pharmacoeconomics. 2002; 20(7):455-462.

12. Creed F, Ratcliffe J, Fernandez L, Tomenson B, Palmer S, Rigby C, Guthrie E, Read N, Thompson D. **Health-related quality of life and health care costs in severe, refractory irritable bowel syndrome.** Ann Intern Med. 2001; 134(9):860-868.

13. Paré P, Gray J, Lam S, Balshaw R, Khorasheh S, Barbeau M, Kelly S, McBurney CR**. Health-related quality of life, work productivity, and health care resource utilization of subjects with irritable bowel syndrome: baseline results from LOGIC (Longitudinal Outcomes Study of Gastrointestinal Symptoms in Canada), a naturalistic study.** Clin Ther. 2006; 28(10):1726-3175.

14. Moayyedi P, Mason J. **Clinical and economic consequences of dyspepsia in the community.** Gut. 2002; 50 Suppl 4:iv10-2.

15. Talley NJ, Locke GR 3rd, Lahr BD, Zinsmeister AR, Tougas G, Ligozio G, Rojavin MA, Tack J. **Functional dyspepsia, delayed gastric emptying, and impaired quality of life**. Gut. 2006; 55(7):933-939.

16. Cheng C. **Seeking medical consultation: perceptual and behavioral characteristics distinguishing consulters and non consulters with functional dyspepsia.** Psychosom Med. 2000; 62(6):844-852.

17. Liebregts T, Adam B, Bredack C, Röth A, Heinzel S, Lester S, Downie-Doyle S,Smith E, Drew P, Talley NJ, Holtmann G. **Immune activation in patients with irritable bowel syndrome.** Gastroenterology. 2007; 132(3):913-920.

18. Svensson TH**. Peripheral, autonomic regulation of locus coeruleus noradrenergic neurons in brain: putative implications for psychiatry and psychopharmacology.** Psychopharmacology. 1987;92:1–7.

19. Levy RL, Whitehead WE, Von Korff MR, Saunders KW, Feld AD. **Intergenerational transmission of gastrointestinal illness behavior**. Am J Gastroenterol. 2000; 95:451–456.

20. Murray CD, Flynn J, Ratcliffe L, Jacyna MR, Kamm MA, Emmanuel AV. **Effect of acute physical and psychological stress on gut autonomic innervation in irritable bowel syndrome.** Gastroenterology. 2004; 127:1695–1703.

21. Delgado-Aros S, Camilleri M. **Visceral hypersensitivity 2.** J Clin Gastroenterol. 2005; 39:S194–S203.

22. Mayer EA, Gebhart GF. **Basic and clinical aspects of visceral hyperalgesia.** Gastroenterology.1994; 107(1):271-293.

23. Berthoud HR, Blackshaw LA, Brookes SJ, Grundy D. **Neuroanatomy of extrinsic afferents supplying the gastrointestinal tract.** Neurogastroenterol Motil. 2004; 16 Suppl 1:28-33.

24. Bonaz B. **Visceral sensitivity perturbation integration in the brain-gut axis in functional digestive disorders.** J Physiol Pharmacol. 2003; 54 Suppl 4:27-42.
25. Park JH, Rhee PL, Kim HS, Lee JH, Kim YH, Kim JJ, Rhee JC. **Mucosal mast cell counts correlate with visceral hypersensitivity in patients with diarrhea predominant irritable bowel syndrome.** J Gastroenterol Hepatol. 2006; 21(1 Pt 1):71-78.
26. Gershon MD. **Review article: serotonin receptors and transporters -- roles in normal and abnormal gastrointestinal motility.** Aliment Pharmacol Ther. 2004; 2 0 Suppl 7:3-14.
27. Gershon MD, Tack J. **The serotonin signaling system: from basic understanding to drug development for functional GI disorders.** Gastroenterology. 2007; 132(1):397-414.
28. Dunlop SP, Coleman NS, Blackshaw E, Perkins AC, Singh G, Marsden CA et al. **Abnormalities of 5-hydroxytryptamine metabolism in irritable bowel syndrome.** Clin Gastroenterol Hepatol. 2005; 3:349–357.
29. Spiller RC. **Post infectious irritable bowel syndrome.** Gastroenterology. 2003; 124:1662–1671.
30. Barbara G, Stanghellini V, Cremon C, De Giorgio R, Corinaldesi R. **Almost all irritable bowel syndromes are post-infectious and respond to probiotics: controversial issues**. Dig Dis. 2007; 25(3):245-248.
31. Grundy D, Al-Chaer ED, Aziz Q, Collins SM, Ke M, Taché Y, Wood JD.**Fundamentals of neurogastroenterology: basic science.** Gastroenterology. 2006; 130(5):1391-1411.
32. Wood JD. **Neuropathophysiology of functional gastrointestinal disorders.** World J Gastroenterol. 2007 7;13(9):1313-1332.
33. McKendrick MW, Read NW. **Irritable bowel syndrome--post salmonella infection.** J Infect. 1994; 29(1):1-3.
34. Neal KR, Hebden J, Spiller R. **Prevalence of gastrointestinal symptoms six months after bacterial gastroenteritis and risk factors for development of the irritable bowel syndrome: postal survey of patients.** BMJ. 1997; 314: 779-782.
35. Garcia Rodriguez Luis A and Ruigómez A. **Increased risk of irritable bowel syndrome after bacterial gastroenteritis: cohort study.** BMJ. 1999; 318: 565-566.
36. Drossman DA. **Mind over matter in the post infective irritable bowel.** Gut. 1999; 44:306–307.

37. Pimentel M, Chow EJ, Lin HC. **Eradication of small intestinal bacterial overgrowth reduces symptoms of irritable bowel syndrome.** Am J Gastroenterol. 2000; 95(12):3503-3506.

38. O'Mahony L, McCarthy J, Kelly P, Hurley G, Luo F, O'Sullivan G,et al. **Lactobacillus and bifidobacterium in irritable bowel syndrome: symptom responses and relationship to cytokine profiles.** Gastroenterology. 2005; 128:541–551.

39. Whorwell PJ, Altringer L, Morel J, Bond Y,Charbonneau D, O'Mahony L, Kiely B,Shanahan F, Quigley EM. **Efficacy of an encapsulated probiotic Bifidobacterium infantis 35624 in women with irritable bowel syndrome.** Am J Gastroenterol. 2006; 101(7):1581-1590.

40. Hertig VL, Cain KC, Jarrett ME, Burr RL, Heitkemper MM. **Daily stress and gastrointestinal symptoms in women with irritable bowel syndrome.** Nurs Res. 2007; 56(6):399-406.

41. Pinto C, Lele MV, Joglekar AS, Panwar VS, Dhavale HS**. Stressful life-events, anxiety, depression and copiing in patients of irritable bowel syndrome.** J Assoc Physicians India. 2000; 48(6):589-593.

42. Blanchard EB, Lackner JM, Jaccard J, Rowell D, Carosella AM, Powell C, Sanders K, Krasner S, Kuhn E. **The role of stress in symptom exacerbation among IBS patients.** J Psychosom Res. 2008; 64(2):119-128.

43. Koloski NA, Talley NJ, Boyce PM. **Does psychological distress modulate functional gastrointestinal symptoms and health care seeking? A prospective, community Cohort study.** Am J Gastroenterol. 2003; 98(4):789-797.

44. Mohammed I, Cherkas LF, Riley SA, Spector TD, Trudgill NJ. **Genetic influences in irritable bowel syndrome: a twin study.** Am J Gastroenterol. 2005; 100(6):1340-1344.

45. Wojczynski MK, North KE, Pedersen NL, Sullivan PF. **Irritable bowel syndrome: a co-twin control analysis.** Am J Gastroenterol. 2007; 102(10):2220-2229.

46. Gonsalkorale WM, Perrey C, Pravica V, Whorwell PJ, Hutchinson IV. **Interleukin 10 genotypes in irritable bowel syndrome: evidence for an inflammatory component?** Gut. 2003;52:91–93

47. Yeo A, Boyd P, Lumsden S, Saunders T, Handley A, Stubbins M, **Association between a functional polymorphism in the serotonin transporter gene and diarrhoea predominant irritable bowel syndrome in women.** Gut 2004; 53:1452–1458.

48. Holtmann G, Siffert W, Haag S, Mueller N, Langkafel M, Senf W, et al. **G-protein beta3 subunit 825 CC genotype is associated with unexplained (functional) dyspepsia.** Gastroenterology. 2004; 126:971–979.

49. Levy RL, Jones KR, Whitehead WE, Feld SI, Talley NJ, Corey LA. **Irritable bowel syndrome in twins: heredity and social learning both contribute to etiology.** Gastroenterology. 2001; 121:799–804.

50. Manning AP, Thompson WG, Heaton KW, Morris AF. **Towards positive diagnosis of the irritable bowel.** *Br Med J*. 1978, 2(6138):653-654.

51. Kruis W, Thieme C, Weinzierl M, Schüssler P, Holl J, Paulus W. **A diagnostic score for the irritable bowel syndrome. Its value in the exclusion of organic disease.** Gastroenterology. 1984; 87(1):1-7.

52. N J Talley, V Stanghellini, R C Heading, K L Koch, J R Malagelada, and G N J Tytgat. **Rome II: A Multinational Consensus Document on Functional Gastrointestinal Disorders, Functional gastroduodenal disorders**. Gut. 1999; **45** (Suppl 2): ii37-ii42

53. Tack J., Talley NJ. Camilleri M., Holtmann G., Hu PJ., Malagelada J-R., Stanghellini V., **Functional Gastroduodenal Disorders.** Gastroenterology. 2006; **130**:1466–1479

54. Charapata C, Mertz H. **Physician knowledge of Rome symptom criteria for irritable bowel syndrome is poor among non-gastroenterologists.** Neurogastroenterol Motil. 2006; **18**:211-216.

55. Thompson WG, Heaton KW, Smyth GT, Smyth C. **Irritable bowel syndrome in general practice: prevalence, characteristics, and referral.** Gut. 2000; **46**: 78-82.

56. Wallander MA, Johansson S, Ruigómez A, García Rodríguez LA, Jones R. **Dyspepsia in general practice: incidence, risk factors, comorbidity and mortality.** Fam Pract. 2007; 24(5):403-411.

57. Heading RC. **Prevalence of upper gastrointestinal symptoms in the general population: a systematic review.** Scand J Gastroenterol Suppl. 1999; 231:3-8.

58. Westbrook JI, McIntosh JH, Talley NJ. **The impact of dyspepsia definition on prevalence estimates: considerations for future researchers.** Scand J Gastroenterol. 2000; 35(3):227-233.

59. Mearin F, Badía X, Balboa A, Baró E, Caldwell E, Cucala M, Díaz-Rubio M, Fueyo A,Ponce J, Roset M, Talley NJ. **Irritable bowel syndrome prevalence varies enormously depending on the employed diagnostic**

criteria: comparison of Rome II versus previous criteria in a general population. Scand J Gastroenterol. 2001, **36**:1155-1161.

60. Sperber AD, Shvartzman P, Friger M, Fich A. **A comparative reappraisal of the Rome II and Rome III diagnostic criteria: are we getting closer to the 'true' prevalence of irritable bowel syndrome?** Eur J Gastroenterol Hepatol. 2007, 19:441-447.

61. Vandvik PO, Aabakken L, Farup PG. **Diagnosing irritable bowel syndrome: poor agreement between general practitioners and the Rome II criteria.** Scand J Gastroenterol. 2004, 39:448-453.

62. Spiegel MR, **Do physicians follow evidence-based guidelines in the diagnostic work-up of IBS?** Nat Clin Pract Gastroenterol Hepatol. 2007, 4:296-297.

63. Seifert B, Rubin G, de Wit N, Lionis C, Hall N, Hungin P, Jones R, Palka M, Mendive J. **The management of common gastrointestinal disorders in general practice A survey by the European Society for Primary Care Gastroenterology (ESPCG) in six European countries.** Dig Liver Dis. 2008 Apr 10 [Epub ahead of print]

64. Rubin G, De Wit N, Meineche-Schmidt V, Seifert B, Hall N, Hugin P, **The diagnosis of IBS in primary care: consensus development using nominal group technique.** Family Practice Fam Pract. 2006, 23:687-692.

65. Agreus L. **Rome? Manning? Who cares?** Am j Gastroenterol. 2000, 95:2816-2824

66. van der Horst HE, van Dulmen AM, Schellevis FG, van Eijk JT, Fennis JF, Bleijenberg G. **Do patients with irritable bowel syndrome in primary care really differ from outpatients with irritable bowel syndrome?** Gut. 1997; 41(5):669-674.

67. ten Berg MJ, Goettsch WG, van den Boom G, Smout AJ, Herings RM. **Quality of life of patients with irritable bowel syndrome is low compared to others with chronic diseases.** Eur J Gastroenterol Hepatol. 2006; 18(5):475-481.

68. Simrén M, Abrahamsson H, Svedlund J, Björnsson ES. **Quality of life in patients with irritable bowel syndrome seen in referral centers versus primary care: the impact of gender and predominant bowel patter**n. Scand J Gastroenterol. 2001;36(5):545-552.

69. Lee V, Guthrie E, Robinson A, Kennedy A, Tomenson B, Rogers A, Thompson D. **Functional bowel disorders in primary care: factors associated with health-related quality of life and doctor consultation.** J Psychosom Res. 2008; 64(2):129-138.

70. El-Serag HB. **Impact of irritable bowel syndrome: prevalence and effect on health-related quality of life.** Rev Gastroenterol Disord. 2003; 3 Suppl 2:S3-11.

71. Amouretti M, Le Pen C, Gaudin AF, Bommelaer G, Frexinos J, Ruszniewski P, Poynard T, Maurel F, Priol G, El Hasnaoui A**. Impact of irritable bowel syndrome (IBS) on health-related quality of life(HRQOL).** Gastroenterol Clin Biol. 2006; 30(2):241-246.

72. Fraser A, Delaney BC, Ford AC, Qume M, Moayyedi P. **The Short-Form Leeds Dyspepsia Questionnaire validation study.** Aliment Pharmacol Ther. 2007; 15; 25(4):477-486.

73. Ford AC, Forman D, Bailey AG, Axon AT, Moayyedi P. **Initial poor quality of life and new onset of dyspepsia: results from a longitudinal 10-year follow-up study.** Gut. 2007; 56(3):321-327.

74. Groll D, Vanner S, Depew W, DaCosta L, Simon J, Groll A, Roblin N, Paterson W: **The IBS-36: A new quality of life measure for irritable bowel syndrome.** *Am J Gastroenterol* 2002, 97:962-971.

75. Wiklund IK, Fullerton S, Hawkey CJ, Jones RH, Longstreth GF, Mayer EA, Peacock RA, Wilson IK, Naesdal J: **An irritable bowel syndrome- specific questionnaire: development and validation.** *Scand J Gastroenterol* 2003, 38:947-954.

76. Patrick DL, Wild DJ, Johnson ES, Wagner TH, Martin MA: **Cross-Cultural Validation of Quality of Life Measures.** In *Quality of Life Assessment: International Perspectives* Edited by: Orley J, Kuyken W.Berlin Heidelberg: Springer- Verlag; 1994:19-32.

77. Manousos ON, Giannadaki E, Mouzas IA, Tzardi M, Koutroubakis I, Skordilis P,Vassilakis S, Kouroumalis E, Vlachonikolis IG. **Ulcerative colitis is as common in Crete as in northern Europe: a 5-year prospective study.** Eur J Gastroenterol Hepatol. 1996; 8(9):893-898.

78. Koutroubakis IE, Sfiridaki A, Tsiolakidou G, Theodoropoulou A, Livadiotaki A, Paspatis G, Kouroumalis EA. **Genetic risk factors in patients with inflammatory bowel disease and vascular complications: case-control study. Inflamm Bowel Dis.** 2007; 13(4):410-415.

79. Koutroubakis IE, Drygiannakis D, Karmiris K, Drygiannakis I, Makreas S, Kouroumalis EA. **Pancreatic autoantibodies in Greek patients with inflammatory bowel disease.** Dig Dis Sci. 2005; 50(12):2330-2334.

80. Pallis AG, Vlachonikolis IG, Mouzas IA. **Validation of a reliable instrument (QUOTE-IBD) for assessing the quality of health care in Greek patients with inflammatory bowel disease.** Digestion. 2003; 68(2-3):153-160.

81. Pallis AG, Vlachonikolis IG, Mouzas IA. **Assessing health-related quality of life in patients with inflammatory bowel disease, in Crete, Greece**. BMC Gastroenterol. 2002; 2:1.

82. Katsanos KH, Christodoulou DK, Michael M, Ioachim E, Tsianos GV, Agnantis N,Tsianos EV. **Inflammatory bowel disease-related dysplasia and cancer: A referral center study in northwestern Greece.** Eur J Intern Med. 2005; 16(3):170-175.

83. Mouzas IA, Fragkiadakis N, Moschandreas J, Karachristos A, Skordilis P, Kouroumalis E, Manousos ON. **Validation and results of a questionnaire for functional bowel disease in out-patients.** BMC Public Health. 2002; 21:2:8.

84. Papatheodoridis GV, Karamanolis DG**. Prevalence and impact of upper and lower gastrointestinal symptoms in the Greek urban general population.** Scand J Gastroenterol. 2005; 40(4):412-421.

85. Archimandritis A, Sipsas N, Tryphonos M, Tsirantonaki M, Tjivras: **Significance of various factors in patients with functional dyspepsia and peptic ulcer disease in Greece. A comparative prospective study.** M. Ann Med Interne 1995; 146:299-303.

86. Archimandritis A, Bitsikas J, Tjivras M, Fertakis A, Anastasakou E, Pitsouni E, Marinis E, Davaris P: **Helicobacter pylori infection in Greece in healthy people and in patients with peptic ulcer and with dyspepsia without ulcer.** Clin Gastroenterol 1993; 16:257-258.

87. Hungin APS, Whorwell P, Tack J, Mearin F. **The prevalence, patterns and impact of irritable bowel syndrome: an international survey of 40 000 subjects.** Aliment Pharmacology and Therapeutics 2003; 17: 643-650.

88. Vlachonikolis IG, Koutroubakis IE, Manousos ON. **Epidemiology of inflammatory bowel disease in Heraklion, Crete.** Scand J Gastroenterol. 2001; 36(9):1008.

89. LJ Slikkerveer. "**Theoritical orientation and Analytical Model"** in the: *Plural medical systems in the horn of Africa*. Keganh Paul International London and New York. 1990; 37- 78.

90. Malamas M, Marselos M. **The tradition of medicinal plants in Zagori, Epirus (northwestern Greece).** J Ethnopharmacol. 1992; 37(3):197-203.

91. Evelyn Dijkstra. **Herbs in Treating Dyspepsia. (The Use of Herbs in the Overall Treatment of Dyspepsia In Anogia, Crete)** Erasmus/Socrates exchange program, Supervisor professors: LJ Slikkerrveer, C Lionis.

92. Lionis C, Faresjö A, Skoula M, Kapsokefalou M, Faresjö T. **Antioxidant effects of herbs in Crete.** Lancet. 1998; 352(9145):1987-1988.
93. Bennett G, Talley NJ. **Irritable bowel syndrome in the elderly**. Best Practice in Research Clinical Gastroenterology. 2002; 1: 63-76.
94. Minocha A, Johnson WD, Abell TL, Wigington WC. **Prevalence, sociodemography, and quality of life of older versus younger patients with irritable bowel syndrome: a population-based study**. Dig Dis Sci. 2006; 51(3):446-453.
95. Mearin F, Badía X, Balboa A, Baró E, Caldwell E, Cucala M, Díaz-Rubio M, Fueyo A,Ponce J, Roset M, Talley NJ. **Irritable bowel syndrome prevalence varies enormously depending on the employed diagnostic criteria: comparison of Rome II versus previous criteria in a general population.** Scand J Gastroenterol. 2001; **36**:1155-1161.
96. Boyce PM, Koloski NA, Talley NJ. **Irritable bowel syndrome according to varying diagnostic criteria: are the new Rome II criteria unnecessarily restrictive for research and practice?** Am J Gastroenterol. 2000; **95**:3176-3183.
97. Gwee KA. **Irritable bowel syndrome and the Rome III criteria: for better or for worse?** Eur J Gastroenterol Hepatol. 2007; **19**:437-439.
98. Sperber AD, Shvartzman P, Friger M, Fich A. **A comparative reappraisal of the Rome II and Rome III diagnostic criteria: are we getting closer to the 'true' prevalence of irritable bowel syndrome?** Eur J Gastroenterol Hepatol. 2007; **19**:441-447.
99. Mikocka-Walus A, Turnbull D, Moulding N, Wilson I, Andrews JM, Holtmann G. **Psychological comorbidity and complexity of gastrointestinal symptoms in clinically diagnosed irritable bowel syndrome patients.** J Gastroenterol Hepatol. 2007 Dec 5. [Epub ahead of print]
100. Wang AJ, Liao XH, Hu PJ, Liu SC, Xiong LS, Chen MH. **[A comparison between Rome III and Rome II criteria in diagnosing irritable bowel syndrome]** Zhonghua Nei Ke Za Zhi. 2007; 46(8):644-647. **[Article in Chinese]**
101. Hahn B, Yan S, Strassels S: **Impact of irritable bowel syndrome on quality of life and resource use in the United States and United Kingdom.** Digestion 1999; 60:77-81
102. Minocha A, Chad W, Do W, Johnson WD. **Racial differences in epidemiology of irritable bowel syndrome alone, un-investigated dyspepsia alone, and "overlap syndrome" among african Americans**

compared to Caucasians: a population-based study. Dig Dis Sci. 2006; 51(1):218-226.

103. Gralnek IM, Hays RD, Kilbourne AM, Chang L, Mayer EA. **Racial differences in the impact of irritable bowel syndrome on health-related quality of life.** J Clin Gastroenterol. 2004; 38(9):782-789.

104. Wigington WC, Johnson WD, Minocha A. **Epidemiology of irritable bowel syndrome among African Americans as compared with whites: a population-based study.** Clin Gastroenterol Hepatol. 2005; 3(7):647-653.

105. Trichopoulou A: **Traditional Mediterranean diet and longevity in the elderly: a review**. Public Health Nutr. 2004; 7:943-947.

106. Papadopoulos VP, Vlachos O, Isidoriou E, Kasmeridis C, Pappa Z, Goutzouvelidis A, Filippou F. **A gastroenteritis outbreak due to Norovirus infection in Xanthi, Northern Greece: management and public health consequences.** J Gastrointestin Liver Dis. 2006; 15(1):27-30.

107. Jousilahti P, Salomaa V, Kuulasmaa K, Niemelä M, Vartiainen E. **Total and cause specific mortality among participants and non-participants of population based health surveys: a comprehensive follow up of 54 372 Finnish men and women**. J Epidemiol Community Health. 2005; 59(4):310-315.

108. Οικονομίδου Ε, **Μελέτη της διαχείρισης ασθενών με συμπτώματα του ανώτερου πεπτικού στην ΠΦΥ**. Διδακτορική διατριβή (σε εξέλιξη), Κλινική Κοινωνικής και Οικογενειακής Ιατρικής, Τομέας Κοινωνικής Ιατρικής, ιατρικής Σχολή, Πανεπιστημίου Κρήτης.

109. Vasilopoulos T, Efthymiou C, Zagora E. **A further exploration of patients with IBS in rural Crete.** Rural Remote Health. 2006; 6(4):626.

7.ΠΑΡΑΡΤΗΜΑ

7.1. Φόρμα προοπτικής μελέτης

7.2. Κριτήρια διάγνωσης αναδρομικής μελέτης

7.3. Γενικό ερωτηματολόγιο συνεντεύξεων

7.4. Ερωτηματολόγιο Δυσπεψίας (Ελληνική έκδοση)

7.5. Ερωτηματολόγιο Δυσπεψίας (Αγγλική έκδοση)

7.6. Ερωτηματολόγιο ΛΔΠ

7.7. Ερωτηματολόγιο ποιότητας ζωής SF-36 (Ελληνική έκδοση)

7.1. Φόρμα προοπτικής

ΔΕΛΤΙΟ ΚΑΤΑΓΡΑΦΗΣ ΠΡΟΟΠΤΙΚΗΣ ΜΕΛΕΤΗΣ ΛΕΙΤΟΥΡΓΙΚΩΝ ΔΙΑΤΑΡΑΧΩΝ ΤΟΥ ΠΕΠΤΙΚΟΥ ΣΥΣΤΗΜΑΤΟΣ

(Ιανουάριος- Δεκέμβριος 2001)

Ιατρείο:

Ημερομηνία:……...

1. Κοινωνικο-δημογραφικά δεδομένα

Όνομα:……(Κωδ.αρ)……..
Έτος Γεννήσεως:……..
Τόπος διαμονής:……Τηλέφωνο…….
……
Εργασία:……...

Εκπαίδευση: Ανώτατη ☐ Μέση ☐ Βασική ☐ ία ☐

2. Στοιχεία από τις επισκέψεις στο Κέντρο Υγείας

Διάγνωση

Ημερομηνία Διάγνωσης

(ή υποψία)

1. ☐ Λειτουργική Δυσπεψία……
2. ☐ Σύνδρομο Ευερεθίστου Εντέρου……
3. ☐ Οξεία Γαστρεντερίτιδα……

Διάγνωση από:

1. Γενικό Γιατρό ☐
2. Αγροτικό ☐
3. Γαστρεντερολόγο ☐
4. Άλλον Ειδικευμένο ☐

Θεραπεία/Φάρμακα:

(Παρακαλώ συμπληρώστε τα κριτήρια τις επόμενης σελίδας και αν συνυπάρχει κάποιο από τα νοσήματα που αναφέρονται στο οπισθόφυλλο)

Ατομικό Αναμνηστικό

Νοσήματα	**Παρελθόν**	**Παρόν**
☐ Ρευματοειδής αρθρίτις	☐	☐ Διαγνωσμένο από……..
☐ Άσθμα	☐	☐ Διαγνωσμένο από……
☐ Νοσήματα των νεφρών Διευκρινίστε…….	☐	☐ Διαγνωσμένο από…….
☐ Νοσήματα του Ουροποιητικού Διευκρινίστε…….	☐	☐ Διαγνωσμένο από…….
☐ Πεπτικό έλκος Διευκρινίστε…….	☐	☐ Διαγνωσμένο από…….
☐ Γαστροοισοφαγική Παλινδρόμηση	☐	☐ Διαγνωσμένο από…….
☐ Χολοκυστίτις	☐	☐ Διαγνωσμένο από…….
☐ Παγκρεατίτις	☐	☐ Διαγνωσμένο από…….
☐ Ψυχικές Διαταραχές Διευκρινίστε…….	☐	☐ Διαγνωσμένο από…….
☐ Καρκίνος Διευκρινίστε…….	☐	☐ Διαγνωσμένο από…….
☐ Λήψη αλκοόλ Διευκρινίστε…….	☐	☐ Διαγνωσμένο από…….

7.2. Κριτήρια διάγνωσης αναδρομικής μελέτης

ΟΞΕΙΑΣ ΓΑΣΤΡΕΝΤΕΡΙΤΙΔΑΣ

1. Οξεία διάρροια μέτρια ή σοβαρή, με ή χωρίς έμετο, με ή χωρίς πυρετό. ☐

2. Ευρήματα από το πρόσφατο ιστορικό (ταξίδια στο εξωτερικό, παραμονή στο ύπαιθρο, κατανάλωση οστρακοειδών, φύλαξη μωρού κ.τ.λ.) ☐

3. Εξέταση κοπράνων και αίματος με ευρήματα σχετικά με ιογενή ή μικροβιακή γαστρεντερίτιδα όπως: ☐
Αίμα και/ή λευκοκύτταρα στα κόπρανα
Απομόνωση βακτηριδίων στην καλλιέργεια κοπράνων. ☐

ΛΕΙΤΟΥΡΓΙΚΗΣ ΔΥΣΠΕΨΙΑΣ
(Talley et al, Gut 1999)

1. Επιμένον ή διαλείπον άλγος (ή δυσφορία οποιασδήποτε μορφής: π.χ. ερυγές, μετεωρισμός, αίσθημα καύσους ή βάρους) στην άνω κοιλία. ☐

2. Απουσία ευρημάτων οργανικής νόσου που θα μπορούσε να ερμηνεύσει τα συμπτώματα και μετά από ενδοσκόπηση του ανώτερου γαστρεντερικού. ☐

ΣΥΝΔΡΟΜΟΥ ΕΥΕΡΕΘΙΣΤΟΥ ΕΝΤΕΡΟΥ
(Rome II, 1998)

1. Κοιλιακό άλγος ή δυσφορία σχετιζόμενα με αλλαγές στη συχνότητα της αφόδευσης ☐

2. Κοιλιακό άλγος ή δυσφορία που ανακουφίζεται με την αφόδευση ☐

3. Κοιλιακό άλγος σχετιζόμενο με αλλαγές στη σύσταση των κοπράνων ☐

4. Αλλαγές στη συχνότητα της αφόδευσης ☐

5. Αλλαγές στη μορφή των κοπράνων ☐

6. Αλλαγές στη δίοδο των κοπράνων ☐

7. Δίοδος βλέννης από το ορθό ☐

8. Αίσθημα φουσκώματος ή ορατή διάταση ☐

(Απαιτούνται 2 από τα 3 πρώτα για να τεθεί η διάγνωση ενώ τα υπόλοιπα σαν υποστηρικτικά βοηθούν την περαιτέρω κατάταξη σχετικά με το αν το κυρίαρχο σύμπτωμα είναι η δυσκοιλιότητα.)

7.3. Γενικό ερωτηματολόγιο συνεντεύξεων

ΙΣΤΟΡΙΚΟ

(Συμπληρωματικά)

Ονοματεπώνυμο : _____ ηλικία: φύλο: Άρρεν Θήλυ ☐ ☐
Διεύθυνση: _____

Ασφαλιστικό ταμείο: Επάγγελμα
Εκπαίδευση;
Είστε παντρεμένος/ η;

1. Οι γονείς σας είχαν κάποιο πρόβλημα υγείας;
2. Πόσα αδέλφια έχετε;
3. Είναι όλα εν ζωή;
4. Έχουν κάποιο πρόβλημα υγείας;
5. Έχετε παιδιά; Πόσα; Έχουν κάποιο πρόβλημα υγείας;
6. Είχατε περάσει κάποια νόσο στο παρελθόν που να σας ανάγκασε να ζητήσετε ιατρική βοήθεια;

……

7. Νοσηλευτήκατε ποτέ σε νοσοκομείο;
8. Σας έγινε ποτέ μετάγγιση αίματος; Αν Ναι πότε;
9. Για ποιο λόγο;
10. Έχετε αλλεργία σε φάρμακα, τροφές ή περιβαλλοντικούς παράγοντες;
11. Τι ακριβώς;
12. Είχατε ποτέ στο παρελθόν κάποιο επεισόδιο οξείας γαστρεντερίτιδας (διάρροια με ή χωρίς έμετο, με ή χωρίς πυρετό);
13. Ζητήσατε ιατρική βοήθεια γι αυτό το λόγο;
14. Αν Ναι τι ακριβώς; (νοσηλευτήκατε σε νοσοκομείο, παραμείνατε σε Κ.Υ. για κάποιες ώρες, σας επισκέφτηκαν στο σπίτι, πήρατε φάρμακα, έγινε καλλιέργεια κοπράνων)

……

15. Μετά το επεισόδιο αυτό είχατε κοιλιακές ενοχλήσεις;
16. Είχατε άλλα προβλήματα με το έντερο σας στο παρελθόν;
17. Αν Ναι τι ακριβώς σας ενοχλούσε;
18. Πότε ξεκίνησαν αυτά τα ενοχλήματα;
19. Είστε γενικά αγχώδες άτομο; Στενοχωριέστε εύκολα με προβλήματα της καθημερινής ζωής;
20. Έχετε προβλήματα με τον ύπνο σας;
21. Αν Ναι τι ακριβώς;
22. Έχετε κάποια πρόσφατη εξέταση αίματος; (ΤΚΕ, γεν.αίματος)
23. Έχετε παρατηρήσει να έχετε (Manning criteria)

    Πόνο στην κοιλιά που ανακουφίζεται με την αφόδευση;
    Χαλαρότερα κόπρανα κατά την έναρξη του πόνου;
    Πιο συχνή κινητικότητα εντέρου κατά την έναρξη του πόνου;
    Κοιλιακή διάταση (ορατή);
    Βλέννη από το ορθό;
    Αίσθημα ατελούς κένωσης του ορθού;

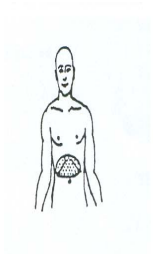
7.4. Ερωτηματολόγιο Δυσπεψίας (Ελληνική έκδοση)

ΕΥΧΑΡΙΣΤΟΥΜΕ ΓΙΑ ΤΗΝ ΣΥΓΚΑΤΑΘΕΣΗ ΣΑΣ ΝΑ ΒΟΗΘΗΣΕΤΕ.
ΓΙΑ ΝΑ ΑΠΑΝΤΗΣΕΤΕ ΤΙΣ ΕΡΩΤΗΣΕΙΣ ΤΟΠΟΘΕΤΗΣΤΕ ΕΝΑ Χ ΣΤΟ ΚΑΤΑΛΛΗΛΟ ΤΕΤΡΑΓΩΝΑΚΙ ΕΑΝ ΔΕΝ ΕΙΣΤΕ ΣΙΓΟΥΡΟΙ ΓΙΑ ΤΙΣ ΑΠΑΝΤΗΣΕΙΣ ΣΗΜΕΙΩΣΤΕ ΤΟ "ΟΧΙ"
Επιστρέψτε το ερωτηματολόγιο με τον φάκελο που εσωκλείεται. Δεν απαιτείται γραμματόσημο.

Παρακαλώ συμπληρώστε τα στοιχεία σας:
Ονοματεπώνυμο : _____ ηλικία: _____ φύλο: Άρρεν ☐ Θήλυ ☐
Διεύθυνση: _____
Ταχ.Κωδ. _____ Αριθ.Τηλ. _____
Ποιο είναι/ ήταν το επάγγελμα σας; _____
Ποια είναι η εκπαίδευση σας; _____
Ποιο είναι/ ήταν το επάγγελμα του συντρόφου σας; _____
Είστε εργαζόμενος /η :

Πλήρους απασχόλησης;	☐ Νοικοκυρά;	Ελεύθερος επαγγελματίας;	☐
Μερικής απασχόλησης;	☐ Συνταξιοδοτημένος;	☐ Υπάλληλος;	☐
Άνεργος/ η;	☐ Μαθητής/ Φοιτητής;	☐	

ΘΥΜΗΘΕΙΤΕ ΟΤΙ ΕΑΝ ΔΕΝ ΕΙΣΤΕ ΣΙΓΟΥΡΟΙ ΓΙΑ ΤΗΝ ΑΠΑΝΤΗΣΗ ΣΕ ΟΠΟΙΑΔΗΠΟΤΕ ΑΠΟ ΤΙΣ ΠΑΡΑΚΑΤΩ ΕΡΩΤΗΣΕΙΣ ΤΟΤΕ ΣΗΜΕΙΩΣΤΕ ΤΟ "ΟΧΙ"



Είχατε πόνο ή δυσφορία/ ενόχληση στις περιοχές που υποδεικνύονται στην εικόνα (άνω κοιλία-στομάχι), τους τελευταίους 12 μήνες; ΝΑΙ ☐ ΟΧΙ ☐
Αν Ναι στην τελευταία ερώτηση τότε:
Είχατε αυτόν τον πόνο ή δυσφορία περισσότερο από έξι φορές τους τελευταίους 12 μήνες; ΝΑΙ ☐ ΟΧΙ ☐
Είδατε κάποιο γιατρό για το λόγο αυτό; ΝΑΙ ☐ ΟΧΙ ☐

Είχατε ποτέ, ένα αίσθημα φουσκώματος ή πληρότητας στις περιοχές που υποδεικνύονται στην εικόνα, μετά τη λήψη τροφής ή ποτού, τους τελευταίους 12 μήνες; ΝΑΙ ☐ ΟΧΙ ☐
Αν Ναι στην τελευταία ερώτηση τότε:
Είχατε αυτό το αίσθημα περισσότερο από έξι φορές τους τελευταίους 12 μήνες; ΝΑΙ ☐ ΟΧΙ ☐
Είδατε κάποιο γιατρό για το λόγο αυτό; ΝΑΙ ☐ ΟΧΙ ☐

Οπισθοστερνικό καύσος είναι ένα αίσθημα καψίματος ή πόνου πίσω από το στήθος, που δεν οφείλεται σε στηθάγχη ή σε καρδιακή διαταραχή.
Είχατε οπισθοστερνικό καύσος τους τελευταίους 12 μήνες; ΝΑΙ ☐ ΟΧΙ ☐
Αν Ναι στην τελευταία ερώτηση τότε:
Είχατε αυτό το αίσθημα περισσότερο από έξι φορές τους τελευταίους 12 μήνες; ΝΑΙ ☐ ΟΧΙ ☐
Είδατε κάποιο γιατρό για το λόγο αυτό; ΝΑΙ ☐ ΟΧΙ ☐

Όταν ξαπλώνετε στο κρεβάτι είχατε ποτέ οπισθοστερνικό καύσος, κατά τη διάρκεια των τελευταίων 12 μηνών; ΝΑΙ ☐ ΟΧΙ ☐

Αν Ναι τότε:

Συνέβη αυτό περισσότερο από έξι φορές τους τελευταίους 12 μήνες; ΝΑΙ ☐ ΟΧΙ ☐

Είδατε κάποιο γιατρό για το λόγο αυτό; ΝΑΙ ☐ ΟΧΙ ☐

Έχετε οπισθοστερνικό καύσος **μόνο** όταν ξαπλώνετε στο κρεβάτι; ΝΑΙ ☐ ΟΧΙ ☐

Σας ξυπνάει το οπισθοστερνικό καύσος όταν κοιμάστε; ΝΑΙ ☐ ΟΧΙ ☐

Είχατε ξινίλα ή γεύση όξινου υγρού στο πίσω τμήμα του λαιμού σας τους τελευταίους 12 μήνες; ΝΑΙ ☐ ΟΧΙ ☐

Αν Ναι: Συνέβη αυτό περισσότερο από έξι φορές τους τελευταίους 12 μήνες; ΝΑΙ ☐ ΟΧΙ ☐

Είδατε κάποιο γιατρό για το λόγο αυτό; ΝΑΙ ☐ ΟΧΙ ☐

Είχατε ποτέ κατά τους τελευταίους μήνες το αίσθημα ότι θέλετε να κάνετε έμετο (ναυτία); ΝΑΙ ☐ ΟΧΙ ☐

Αν Ναι: Συνέβη αυτό περισσότερο από έξι φορές τους τελευταίους 12 μήνες; ΝΑΙ ☐ ΟΧΙ ☐

Είδατε κάποιο γιατρό για το λόγο αυτό; ΝΑΙ ☐ ΟΧΙ ☐

Έχετε πραγματική εξαγωγή (έμετο) τους τελευταίους 12 μήνες; ΝΑΙ ☐ ΟΧΙ ☐

Αν Ναι: Συνέβη αυτό περισσότερο από έξι φορές τους τελευταίους 12 μήνες; ΝΑΙ ☐ ΟΧΙ ☐

Είδατε κάποιο γιατρό για το λόγο αυτό; ΝΑΙ ☐ ΟΧΙ ☐

Είχατε δυσκολία να καταπιείτε (τροφή να κολλάει στο λαιμό σας) τους τελευταίους 12 μήνες; ΝΑΙ ☐ ΟΧΙ ☐

Αν Ναι: Συνέβη αυτό περισσότερο από έξι φορές τους τελευταίους 12 μήνες; ΝΑΙ ☐ ΟΧΙ ☐

Είδατε κάποιο γιατρό για το λόγο αυτό; ΝΑΙ ☐ ΟΧΙ ☐

Είχατε ποτέ διαγνωσθεί ότι έχετε στομαχικό ή δωδεκαδακτυλικό έλκος; ΝΑΙ ☐ ΟΧΙ ☐

Υποβληθήκατε ποτέ σε εξέταση με βαριούχο γεύμα; ΝΑΙ ☐ ΟΧΙ ☐

(Πίνετε ένα λευκό υγρό πριν να βγουν οι ακτινογραφίες) ΝΑΙ ☐ ΟΧΙ ☐

Υποβληθήκατε ποτέ σε ενδοσκόπηση ή γαστροσκόπηση; (Ένας σωλήνας με ένα φως καταπίνεται για να εξετάσει το εσωτερικό του στομάχου) ΝΑΙ ☐ ΟΧΙ ☐

Υπάρχει κάτι για το οποίο δε σας ρωτήσαμε και νομίζετε ότι θα ήταν σημαντικό να μας το πείτε;

ΕΥΧΑΡΙΣΤΟΥΜΕ ΚΑΙ ΠΑΛΙ ΓΙΑ ΤΗΝ ΠΟΛΥΤΙΜΗ ΒΟΗΘΕΙΑ ΣΑΣ
ΠΑΡΑΚΑΛΟΥΜΕ ΝΑ ΕΛΕΓΞΕΤΕ ΑΛΛΗ ΜΙΑ ΦΟΡΑ ΟΤΙ ΕΧΟΥΝ ΑΠΑΝΤΗΘΕΙ ΟΛΕΣ ΟΙ ΕΡΩΤΗΣΕΙΣ ΑΚΟΜΑ ΚΑΙ ΕΚΕΙΝΕΣ ΜΕ "ΟΧΙ" ΚΑΙ ΜΕΤΑ ΕΠΙΣΤΡΕΨΕΤΕ ΤΟ ΕΡΩΤΗΜΑΤΟΛΟΓΙΟ ΣΤΟ ΦΑΚΕΛΟ ΕΛΕΥΘΕΡΟΥ ΤΑΧΥΔΡΟΜΕΙΟΥ ΠΟΥ ΕΣΩΚΛΕΙΕΤΑΙ
Το ερωτηματολόγιο χρησιμοποιείτε μετά από άδεια των συγγραφέων T. Kennedy και R. Jones.

7.5. Ερωτηματολόγιο Δυσπεψίας (Αγγλική έκδοση)

THANK YOU FOR YOUR WILLINGNESS TO HELP
TO ANSWER THE QUESTIONS PLACE A TICK IN THE APPROPRIATE BOX
IF YOU ARE UNSURE OF THE ANSWERS TICK "NO".
Kindly return the questionnaire in the FREEPOST envelope. No stamp is required.

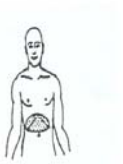
What is your…?
Name: _____ Age: _____ Sex: Male ☐ ☐Female

Address: _____
_____
Post code: _____ Telephone number: _____

What is/was your occupation: _____
What is your education: _____
What is/was your partner's occupation: _____
Are you:

Employed full time?	☐	Housewife?	☐
Part time?	☐	Retired?	☐
Unemployed?	☐	Student?	☐

REMEMBER, IF YOU UNSURE OF THE ANSWER TO ANY OF THE QUESTION BELOW,
THEN TICK "NO"



Have you had pain or discomfort in the place shown in the picture in the last year?	Yes	No	☐	☐
☐ If Yes to the last question then:				
Have you had this pain or discomfort?				
On more than six occasions in the last year?	Yes	No	☐	☐
Did you see a doctor about it?	Yes	No	☐	☐
Have you had a feeling of excess wind or fullness in the place shown in the picture after eating or drinking in the last year?	Yes	No	☐	☐
If Yes to the last question then:				
Have you had this feeling on more than six occasions in the last year?	Yes	No	☐	☐
Did you see a doctor about it?	Yes	No	☐	☐
Heartburn is a burning or ache behind the breast bone in the chest, that is not due to angina or heart trouble.				
Have you had heartburn in the last year?	Yes	No	☐	☐
If Yes to the last question then:				
Have you had this feeling on more than six occasions in the last year?	Yes	No	☐	☐
Did you see a doctor about it?	Yes	No	☐	☐

When lying in bed have you had heartburn during the last year? Yes ☐ No ☐
If Yes then:
Has this happened on more than six occasions in the last year? Yes ☐ No ☐
Did you see a doctor about it? Yes ☐ No ☐
Do you get heartburn **only** when lying in bed? Yes ☐ No ☐
Does this heartburn waken you from your sleep? Yes ☐ No ☐

Have you had a very sour or acid tasting fluid at the back of your throat in the last year? Yes ☐ No ☐
If Yes:
Has this happened on more than six occasions in the last year? Yes ☐ No ☐
Did you see a doctor about it? Yes ☐ No ☐

Have you had a feeling of wanting to throw out (nausea), in the last year? Yes ☐ No ☐
If Yes:
Has this happened on more than six occasions in the last year? Yes ☐ No ☐
Did you see a doctor about it? Yes ☐ No ☐

Have you actually thrown up (vomited) in the last year? Yes ☐ No ☐
If Yes:
Has this happened on more than six occasions in the last year? Yes ☐ No ☐
Did you see a doctor about it? Yes ☐ No ☐

Have you had difficulty swallowing (food sticking in you throat) in the last year? Yes ☐ No ☐
If Yes:
Has this happened on more than six occasions in the last year? Yes ☐ No ☐
Did you see a doctor about it? Yes ☐ No ☐

Have you ever been diagnosed as having a gastric (stomach) or duodenal ulcer? Yes ☐ No ☐
Have you ever had a barium meal examination? Yes ☐ No ☐
(You have to drink a white liquid before the X-rays are taken)

Have you ever had an endoscopy or gastroscopy? Yes ☐ No ☐
(A tube with a light source is swallowed to look inside the stomach)

Is there anything, which we have not asked about, and which you think would be important for us to know?

THANK YOU ONCE AGAIN FOR YOUR GENEROUS ASSISTANCE.
KINDLY CHECK THAT ALL QUESTIONS ARE ANSWERED, EVEN THE "NO" ONES, THEN PLEASE RETURN THE QUESTIONNAIRE IN THE FREEPOST ENVELOPE.

7.6. Ερωτηματολόγιο για την αναγνώριση των ΛΔΠ γαστρεντερολογικής κλινικής ΠΑΓΝΗ

Όνομα:
Διεύθυνση: Πόλη: ή Χωριό: Από πόσο καιρό;
Ηλικία:
Φύλο: Άνδρας ☐ Γυναίκα ☐
Οικογενειακή κατάσταση: Άγαμος-η ☐ Έγγαμος-η ☐ Διαζευγμένος-η ☐ Χήρος-α ☐

Πόσα αδέλφια είστε; Ποια η σειρά γεννήσεως σας;
Επάγγελμα: Ασχολίες:

Μόρφωση: Χωρίς εκπαίδευση ☐ Δημοτικό ☐Γυμνάσιο ☐ Λύκειο ☐
Ανώτερη Σχόλη ☐ Ανώτατη Σχολή ☐

Ι. Ατομικό αναμνηστικό

1. Γνωρίζετε να πάσχετε από κάποια πάθηση; Ναι ☐ Όχι☐
   Αν Ναι ποια;

2. Έχετε χειρουργηθεί ποτέ; Ναι ☐ Όχι ☐
Αν Ναι τι είδους εγχείρηση έχετε υποστεί;(π.χ. στο στομάχι, χολή, έντερο, σκωληκοειδίτιδα κ.λ.π.) Αναφέρατε:
Πότε;
3. Παίρνετε φάρμακα; Ναι ☐ Όχι ☐
4. Αν Ναι για ποιο λόγο;(π.χ. υπέρταση, σακχαρώδη διαβήτη κ.λ.π.)
Αναφέρατε:
Ποια;

ΙΙ. Κοιλιακός πόνος

1. Είχατε επεισόδια κοιλιακού πόνου τον τελευταίο χρόνο; Ναι ☐ Όχι ☐
Αν Ναι τότε απαντήστε και στις παρακάτω ερωτήσεις

2. Ο πόνος είναι : σε όλη την κοιλιά; ☐ ή πάνω από τον αφαλό; ☐ κάτω από τον αφαλό; ☐

Περισσότερες από 6 φορές (διαφορετικές μέρες) τον τελευταίο χρόνο;
Ναι ☐ Όχι ☐

3. Πόσο καιρό έχετε τον πόνο: 1 χρόνο ☐ 2 χρόνια ☐ Πάνω από 5 ☐

4. Πόσο διαρκεί ο πόνος: Περισσότερο από 2 ώρες ☐ Λιγότερο από 2 ☐ ώρες

5. Πόσος συχνός είναι ο πόνος ☐
1 φορά την εβδομάδα; ☐ Λιγότερο συχνός; ☐ Περισσότερο συχνός;

6. Αντανακλά κάπου αλλού ο πόνος; Ναι ☐ Όχι ☐
Που;
7. Σας ξυπνά ο πόνος το βράδυ; Ναι ☐ Όχι ☐

8. Ανακουφίζεται ο πόνος με αντιόξινα;(π.χ. simeco, aludrox, maalox κ.λ.π.)
Ναι ☐ Όχι ☐ Δεν χρησιμοποιώ ☐

9. Σχέση με το φαγητό
Α) Ο πόνος έχει σχέση με τα γεύματα; Ναι ☐ Όχι ☐
Β) Ο πόνος εμφανίζεται μετά το γεύμα; Ναι ☐ Όχι ☐
Γ) Ο πόνος ανακουφίζεται με το γεύμα; Ναι ☐ Όχι ☐
Δ) Ο πόνος επιβαρύνεται με το γεύμα; Ναι ☐ Όχι ☐
10. Σχέση του πόνου με την αφόδευση(Κενώσεις)
Α) Ανακουφίζεται ο πόνος με την κένωση; ☐ Ναι Όχι ☐
Αν Ναι:Περιστασιακά ☐ Συχνά ☐ Συνήθως ☐ Πάντα ☐

Β) Όταν αρχίσει ο πόνος έχετε πιο πολλές κενώσεις; Ναι ☐ Όχι ☐
Αν Ναι: Περιστασιακά ☐ Συχνά ☐ Συνήθως ☐ Πάντα ☐
Γ) Όταν αρχίσει ο πόνος οι κενώσεις γίνονται πιο χαλαρές (υδαρείς);
Ναι ☐ Όχι ☐
Αν Ναι: Περιστασιακά ☐ Συχνά ☐ Συνήθως ☐ Πάντα ☐
Δ) Ο πόνος χειροτερεύει μετά την κένωση; Ναι ☐ Όχι ☐
Αν Ναι: Περιστασιακά ☐ Συχνά ☐ Συνήθως ☐ Πάντα ☐

III. Κενώσεις

1. Παρατηρήσατε αλλαγές στις συνήθειες του εντέρου σας τον τελευταίο χρόνο; Ναι ☐ Όχι ☐

2. Συνήθως έχετε περισσότερες από 3 κενώσεις την ημέρα;
Ναι ☐ Όχι ☐
3. Συνήθως έχετε λιγότερες από 3 κενώσεις την εβδομάδα;
Ναι ☐ Όχι ☐
4. Έχετε άλλοτε δυσκοιλιότητα και άλλοτε διάρροια; Ναι ☐ Όχι☐
Αυτές οι αλλαγές συμβαίνουν: Σπάνια ☐ Περιστασιακά ☐ Συχνά ☐
5. Τα κόπρανα σας συνήθως είναι σκληρά; Ναι ☐ Όχι
6. Έχετε δυσκολία κατά την κένωση; Ναι ☐ Όχι ☐
7. Χρησιμοποιείτε φάρμακα για δυσκοιλιότητα (Καθαρτικά, φυτικές ίνες κ.λ.π.) Ναι ☐ Όχι ☐
8. Τα κόπρανα σας είναι συνήθως χαλαρά (υδαρή);Ναι ☐ Όχι ☐
9. Νιώθετε ότι θέλετε να ξαναπάτε στην τουαλέτα μετά από κένωση;
Ναι ☐ Όχι ☐
10. Νιώθετε συχνά ότι δεν μπορείτε να κρατηθείτε και πρέπει να πάτε επειγόντως στην τουαλέτα; Ναι ☐ Όχι ☐
11. Βλέπετε βλέννη (μίξα) στα κόπρανα σας; Ναι ☐ Όχι ☐

12. Βλέπετε αίμα κατά την κένωση; Ναι ☐ Όχι ☐
Αν Ναι απαντήστε στα παρακάτω:
Α) Στο σκούπισμα Ναι ☐ Όχι ☐
Β) Στα κόπρανα Ναι ☐ Όχι ☐
Γ) Από πόσο καιρό;
Δ) Πάσχετε από αιμορροΐδες; Ναι ☐ Όχι ☐
13. Σας ξυπνά το βράδυ η ανάγκη για κένωση; Ναι ☐ Όχι ☐
14. Έχετε απώλειες κοπράνων παρά την θέληση σας; Ναι ☐Όχι ☐
Αν Ναι πόσο συχνά; Κάθε μέρα ☐ 1 φορά τη βδομάδα ☐
Φοράτε προστατευτικό; Ναι ☐ Όχι ☐

IV. Νιώθετε φουσκώματα ή αίσθημα κοιλιακής διάτασης; Ναι ☐ Όχι ☐
Αν Ναι: Σπάνια ☐ Περιστασιακά ☐ Συχνά ☐

V. Άλλα συμπτώματα

1. Έχετε ναυτία (Ανακάτεμα); Ναι ☐ Όχι ☐
2. Έχετε τάση για έμετο; Ναι ☐ Όχι ☐
3. Κάνετε εμέτους; Ναι ☐ Όχι ☐
4. Έχετε καυσαλγίες (καούρα στο στομάχι); Ναι ☐ Όχι ☐
5. Έχετε δυσπεψία (βάρος μετά το φαγητό); Ναι ☐ Όχι ☐
6. Έχετε πονοκεφάλους; Ναι ☐ Όχι ☐

VI. Διατροφή και συνήθειες

1. Καπνίζετε; Ναι ☐ Όχι ☐
2. Πίνετε οινοπνευματώδη; Ναι ☐ Όχι ☐

Αν Ναι: Περιστασιακά ☐ Συχνά ☐ Πολύ ☐

3. Συνηθίζετε να πίνετε γάλα; Ναι ☐ Όχι ☐

Σας προκαλεί ενοχλήσεις; Ναι ☐ Όχι ☐

4. Έχετε τη γνώμη ότι η διατροφή σας συνίσταται περισσότερο σε:

Α) Λαχανικά, όσπρια, φρούτα, χορταρικά; ☐

Β) Κρέας; ☐

Γ) Γαλακτοκομικά; ☐

Δ) Τυποποιημένες τροφές; ☐ (κονσέρβες, fast-food κ.λ.π.)

5. Έχει σχέση με τα συμπτώματα σας από το έντερο η λήψη κάποιας τροφής; Ναι ☐ Όχι ☐

Αν Ναι ποιες; Χορταρικά ☐ Όσπρια ☐ Καφές ☐ άλλα ☐

VII. Ψυχολογική κατάσταση

1. Νομίζετε ότι είστε αγχώδες άτομο; Ναι ☐ Όχι ☐
2. Έχετε άλλα ψυχολογικά προβλήματα; Ναι ☐ Όχι ☐
3. Έχετε επισκεφτεί ποτέ ψυχίατρο; Ναι ☐ Όχι ☐
4. Παίρνετε ηρεμιστικά ή υπνωτικά; Ναι ☐ Όχι ☐
5. Νομίζετε ότι το άγχος ή η ψυχολογική σας κατάσταση σχετίζετε με τυχόν προβλήματα σας από το έντερο; Ναι ☐ Όχι ☐

VIII. Κληρονομικότητα

Υπάρχουν στην οικογένεια σας άτομα με προβλήματα από το έντερο;

Ναι ☐ Όχι ☐ Ποιος; Γνωρίζετε τι είδους;

IX. έχετε ποτέ επισκεφτεί ιατρό για κάποιο από τα παραπάνω προβλήματα σας (Αν έχετε) από την κοιλιά;

Ναι ☐ Όχι ☐

Το παραπάνω ερωτηματολόγιο συμπληρώθηκε από:

Ίδιο ☐

Τρίτο(συγγενή-φίλο) ☐

Γιατρό ☐

Το παρόν ερωτηματολόγιο δημιουργήθηκε από τους ιατρούς Ι. Μουζά και Ν. Φραγκιαδάκη et al της γαστρεντερολογικής κλινικής ΠΑΓΝ Ηρακλείου και η χρήση του γίνεται μετά από άδεια των συγγραφέων.

7.7. Ερωτηματολόγιο ποιότητας ζωής SF-36 (Ελληνική έκδοση)

GREEK (GREECE)

SF-36

12/96
VERSION 1.0

SF-36 ΕΡΕΥΝΑ ΥΓΕΙΑΣ

ΟΔΗΓΙΕΣ: Το ερωτηματολόγιο αυτό ζητά τις δικές σας απόψεις για την υγεία σας. Οι πληροφορίες σας θα μας βοηθήσουν να εξακριβώσουμε πως αισθάνεστε από πλευράς υγείας και πόσο καλά μπορείτε να ασχοληθείτε με τις συνηθισμένες δραστηριότητες σας.

Απαντήστε στις ερωτήσεις βαθμολογώντας κάθε απάντηση με τον τρόπο που σας δείχνουμε. Αν δεν είστε απόλυτα βέβαιο /βέβαιη για την απάντηση σας παρακαλούμε να δώσετε την απάντηση που νομίζετε ότι ταιριάζει καλύτερα στην περίπτωσή σας.

1. Γενικά θα λέγατε ότι η υγεία σας είναι

(βάλτε έναν κύκλο)

Εξαιρετική.....1

Πολύ καλή.....2

Καλή.....3

Μέτρια.....4

Κακή.....5

2. Σε σύγκριση με ένα χρόνο πριν πως θα αξιολογούσατε την υγεία σας <u>τώρα;</u>

(βάλτε έναν κύκλο)

Πολύ καλύτερη τώρα απ'οτι ένα χρόνο πριν.....1

Κάπως καλύτερη τώρα απ'οτι ένα χρόνο πριν.....2

Περίπου η ίδια όπως ένα χρόνο πριν.....3

Κάπως χειρότερη τώρα απ'ότι ένα χρόνο πριν 4

Πολύ χειρότερη τώρα απ'οτι ένα χρόνο πριν.....5

3. Οι παρακάτω προτάσεις περιέχουν δραστηριότητες που πιθανώς να κάνετε κατά τη διάρκεια μιας συνηθισμένης ημέρας. Η τωρινή κατάσταση της υγείας σας , σας περιορίζει σε αυτές τις δραστηριότητες;
Εάν ναι, πόσο;

(κυκλώστε έναν αριθμό σε κάθε σειρά)

ΔΡΑΣΤΗΡΙΟΤΗΤΕΣ	Ναι με περιορίζει Πολύ	Ναι με περιορίζει Λίγο	Όχι, δε με περιορίζει καθόλου
α. Σε κουραστικές δραστηριότητες, όπως τρέξιμο, σήκωμα	1	2	3
β. Σε μέτριας έντασης δραστηριότητες ,όπως μετακίνηση ενός τραπεζιού, το σπρώξιμο μιας ηλεκτρικής σκούπας, ο περίπατος στην εξοχή ή όταν παίζετε ρακέτες στην παραλία.	1	2	3
γ. Όταν σηκώνετε ή μεταφέρετε ψώνια από την αγορά	1	2	3
δ. Όταν ανεβαίνετε μερικές σκάλες	1	2	3
ε. Όταν ανεβαίνετε μία σκάλα	1	2	3
στ. Στο λύγισμα του σώματος, στο γονάτισμα ή στο σκύψιμο	1	2	3
ζ. Όταν περπατάτε περίπου ένα χιλιόμετρο	1	2	3
η. Όταν περπατάτε μεριές εκατοντάδες μέτρα	1	2	3
θ. Όταν περπατάτε εκατό μέτρα	1	2	3
ι. Όταν κάνετε μπάνιο ή όταν ντύνεστε	1	2	3

4. Τις τελευταίες 4 εβδομάδες σας παρουσιάστηκαν είτε στη δουλειά σας είτε σε κάποια άλλη συνηθισμένη καθημερινή σας δραστηριότητα- κάποια από τα παρακάτω προβλήματα, εξαιτίας της κατάστασης της σωματικής σας υγείας;

(κυκλώστε έναν αριθμό σε κάθε σειρά)

	ΝΑΙ	ΟΧΙ
Α. Μειώσατε το χρόνο που συνήθως ξοδεύετε στη δουλειά ή σε άλλες	1	2
Β. Επιτελέσατε λιγότερα από όσα θα θέλατε	1	2
Γ. Περιορίσατε τα είδη της δουλειάς ή τα είδη άλλων δραστηριοτήτων σας	1	2
Δ. Δυσκολευτήκατε να εκτελέσετε τη δουλειά ή άλλες δραστηριότητες σας	1	2

5. Τις τελευταίες 4 εβδομάδες σας παρουσιάστηκαν -είτε στη δουλειά σας είτε σε κάποια άλλη συνηθισμένη καθημερινή σας δραστηριότητα- κάποια από τα παρακάτω προβλήματα, εξαιτίας οποιουδήποτε συναισθηματικού προβλήματος (λ.χ. επειδή νιώσατε μελαγχολία ή άγχος):

	ΝΑΙ	ΟΧΙ
Α. Μειώσατε το χρόνο που συνήθως ξοδεύετε στη δουλειά ή σε άλλες	1	2
Β. Επιτελέσατε λιγότερα από όσα θα θέλατε	1	2
Γ. Κάνατε τη δουλειά ή και άλλες δραστηριότητες λιγότερο προσεκτικά απ'ότι συνήθως	1	2

6. Τις τελευταίες 4 εβδομάδες σε ποιό βαθμό επηρέασε η κατάσταση της σωματικής σας υγείας ή κάποια
συναισθηματικά προβλήματα τις συνηθισμένες κοινωνικές σας δραστηριότητες με την οικογένεια, τους φίλους, τους γείτονες σας ή με άλλες κοινωνικές ομάδες:

(βάλτε έναν κύκλο)

Καθόλου.....1

Ελάχιστα.....2

Μέτρια.....3

Αρκετά.....4

Πάρα πολύ.....5

7. Πόσο σωματικό πόνο νιώσατε τις 4 τελευταίες εβδομάδες;

(βάλτε έναν κύκλο)

Καθόλου.....1

Πολύ ήπιο.....2

Ήπιο.....3

Μέτριο.....4

Έντονο.....5

Πολύ έντονο.....6

8. Τις 4 τελευταίες εβδομάδες πόσο επηρέασε ο πόνος τη συνηθισμένη εργασία σας (τόσο την εργασία έξω από το σπίτι όσο και μέσα σε αυτό);

(βάλτε έναν κύκλο)

Καθόλου.....1

Ελάχιστα.....2

Μέτρια.....3

Αρκετά.....4

Πάρα πολύ.....5

9. Οι παρακάτω ερωτήσεις αναφέρονται στο πως αισθανόσαστε και στο πως ήταν γενικά η διάθεση σας τις τελευταίες 4 εβδομάδες Για κάθε ερώτηση, παρακαλείστε να δώσετε εκείνη την απάντηση που πλησιάζει περισσότερο σε ό,τι αισθανθήκατε. Τις τελευταίες 4 εβδομάδες, για πόσο χρονικό διάστημα-

(κυκλώστε έναν αριθμό σε κάθε σειρά)

	Συνεχώς	Το μεγαλύτερο διάστημα	Σημαντικό διάστημα	Μερικές φορές	Μικρό διάστημα	Καθόλου
α. Αισθανόσαστε γεμάτος/ γεμάτη ζωντάνια;	1	2	3	4	5	6
β. Είχατε πολύ εκνευρισμό;	1	2	3	4	5	6
γ. Αισθανόσαστε τόσο πολύ πεσμένος /πεσμένη ψυχολογικά που τίποτε δεν μπορούσε να σας φτιάξει το κέφι;	1	2	3	4	5	6
δ. Αισθανόσαστε ηρεμία και γαλήνη;	1	2	3	4	5	6
ε. Είχατε πολλή ενεργητικότητα;	1	2	3	4	5	6
στ. Αισθανόσαστε απελπισία και μελαγχολία;	1	2	3	4	5	6
ζ. Αισθανόσαστε εξάντληση;	1	2	3	4	5	6
η. Ήσαστε ευτυχισμένος/ ευτυχισμένη;	1	2	3	4	5	6
θ Αισθανόσαστε κούραση;	1	2	3	4	5	6

10. Τις τελευταίες 4 εβδομάδες για πόσο χρονικό διάστημα επηρέασν τις κοινωνικές σας δραστηριότητες (π.χ. επισκέψεις σε φίλους συγγενείς, κλπ) η κατάσταση της σωματικής σας υγείας ή κάποια συναισθηματικά προβλήματα;

(βάλτε έναν κύκλο)

Συνεχώς.....1

Το μεγαλύτερο διάστημα.....2

Μερικές φορές.....3

Μικρό διάστημα.....4

Καθόλου.....5

11. Πόσα ΑΛΗΘΙΝΕΣ ή ΨΕΥΔΕΙΣ είναι οι παρακάτω προτάσεις στη δική σας περίπτωση;
(κυκλώστε έναν αριθμό σε κάθε σειρά)

	Εντελώς Αλήθεια	Μάλλον Αλήθεια	Δεν ξέρω	Μάλλον Ψέμα	Εντελώς ψέμα
α. Μου φαίνεται ότι αρρωσταίνω λίγο ευκολότερα από τους άλλους ανθρώπους	1	2	3	4	5
β. Είμαι τόσο υγιής όσο όλοι οι γνωστοί μου	1	2	3	4	5
γ. Περιμένω ότι η υγεία μου θα χειροτερεύσει	1	2	3	4	5
δ. Η υγεία μου είναι εξαιρετική	1	2	3	4	5