

Appendix A

Example of Terms Used to Search the Literature

- 1 ((ROME and (Classification or criteria or I or II or III or IV)) or ((Kruis or Manning) and criteria)).mp.
- 2 functional gastrointestinal.mp. or exp Colonic Diseases, Functional/ or FGID.mp.
- 3 exp Irritable Bowel Syndrome/ or (Irritable and (colon or bowel)).mp. or IBS.mp.
- 4 aerophagy/ or eructation/ or flatulence/ or (Bloating or Abdominal distension).mp. or exp Constipation/ or constipat*.mp. or diarrhea/
- 5 (spas* and (colon or stricture)).mp.
- 6 Dyspepsia.mp. or exp Dyspepsia/ or heartburn.mp. or exp Heartburn/ or (functional and (chest pain or heartburn or heart burn)).mp.
- 7 (esophageal disorder or (Dysphagia or Globus) or "Reflux hypersensitivity").mp.
- 8 (Functional and (bowel dis* or gastroduodenal or "fecal incontinence" or "anorectal pain")).mp.
- 9 (("Epigastric pain" or hyperemesis or rumination) and syndrome).mp.
- 10 ("Postprandial distress" or Nausea or Vomiting).mp. or exp Vomiting/
- 11 ((altered or disordered or abnormal or derang*) and (digest* or bowel)).mp.
- 12 (pain adj4 abdom*).mp. or exp Abdominal Pain/
- 13 (incomplete adj3 evacuation).mp.
- 14 (mucus adj3 (stool or feces or colitis)).mp.
- 15 (((strain or urge) adj4 bowel) or stool or feces).mp.
- 16 (((loose or watery or hard or lumpy) adj3 stool) or feces).mp.
- 17 (Levator ani syndrome or ((Chronic or fugax) and proctalgia)).mp.
- 18 (Dyssynerg* adj3 (defec* or "Pelvic floor")).mp.
- 19 Inadequate defecatory propulsion.mp.
- 20 (("Opioid-induced" and constipation) or hyperalgesia or Narcotic bowel).mp.

- 21 ((functional or dysfunction) and (gall bladder or gallbladder or biliary or pancreatic or "sphincter of oddi")).mp. or "Sphincter of Oddi Dysfunction"/
- 22 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21
- 23 fibromyalgia.mp. or exp fibromyalgia/
- 24 (muscular rheumatism or "diffuse myofascial pain syndrome").mp.
- 25 (fibrofascitis or fibrositis or fibromyositis).mp.
- 26 23 or 24 or 25
- 27 22 and 26
- 28 limit 27 to (English language and humans and yr="1976 - current")

Appendix B

Research Objectives of 14 Included Studies

Author	Primary Research Question
Triadafilopoulos 1991 ²⁴	Survey the range of bowel patterns and to determine the prevalence of gastrointestinal symptoms suggestive of IBS in a population of FMS patients
Veale et al., 1991 ³⁹	Examine the prevalence IBS in patients with primary fibromyalgia and vice-versa, compared to normal and disease control populations
Sivri et.al., 1996 ⁴⁰	Survey the range of bowel patterns and determine the prevalence of gastrointestinal symptoms suggestive of IBS in fibromyalgia patients c.f. normal controls.
Sperber et.al., 1999 ³⁷	To determine prevalence of fibromyalgia in IBS patients and matched controls, and of IBS in fibromyalgia patients & evaluate impact on QOL
Yunus et.al., 2000 ³⁸	Describe differences between males and females with fibromyalgia
Choudhury et.al., 2001 ⁴¹	Describe various clinical features of fibromyalgia in a Bangladeshi population seen at a rheumatology clinic
Pace et.al., 2001 ⁴²	Compare visceral hyperalgesia in patients with fibromyalgia and IBS patients
Pimentel et.al., 2004 ⁴³	Determine whether abnormal lactulose breath test is associated with IBS and fibromyalgia and to determine correlation between hydrogen gas production and pain in fibromyalgia
Kurland et.al., 2006 ⁴⁴	Determine the point prevalence of depressive symptoms and IBS in fibromyalgia and rheumatologic controls
Zoppi et.al., 2008 ⁴⁵	Evaluate relationship between the severity of spontaneous and provoked pain in patients with fibromyalgia and to observe the frequency of associated disturbances
Almansa et.al., 2009 ⁴⁶	evaluate the prevalence of FGID in patients with fibromyalgia and the role of psychologic factors
Akkaya et.al., 2011 ³⁵	Determine the seroprevalence of H. pylori in patients with fibromyalgia and investigate the association between H. pylori and clinical characteristics of fibromyalgia
Okumus et.al., 2011 ⁴⁷	Determine the frequency of fibromyalgia in patients on peritoneal dialysis
Marum et.al., 2017 ³⁶	Study the effects of low fodmap diet on fibromyalgia symptoms and weight



PRISMA 2009 Checklist: A systematic review of the association between fibromyalgia and functional gastrointestinal disorders

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	1
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	1-2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	2-4
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	4
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	4
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	4
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	4
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	Appx A
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	4 & 7 (PRISMA)
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	4
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	N/A
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	N/A
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	4
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	N/A



Section/topic	#	Checklist item	Reported on page #
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies). Research objectives of the included studies	Appx B
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified. Quality assessment based on Joanna Briggs criteria	6
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	7 (PRISMA)
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	7-8 (Table 2)
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	N/A
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	8-10 (Tables 3-4)
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	N/A
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	N/A
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]) Results of quality assessment based on Joanna Briggs criteria	7-8 (Table 2)
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	11-17
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	18-19
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	19
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	20

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097