

PUBMED 2014 - Search criteria e.g.: (TITLE-ABS-KEY("irritable bowel syndrome")) AND (psychological intervention or hypnosis or relaxation or "behavior therapy" or "behaviour therapy" or "cognitive therapy" or "stress management" or "interpersonal therapy" or psychoanalysis or psychodynamic or CBT or mindful* or mind or hypnosis, or "psychological intervention" or biofeedback). References also attained through screening of source references.

Levels of evidence (I-IV) assessed in accordance with National Health and Medical Research Council (1999) guidelines [1]

FGID condition and diagnostic criteria		Demographics aspects of the condition		Medical treatment	Psychological aspects of the FGID			
FGID Condition:	Diagnostic criteria:	Prevalence:	Demographic characteristics:	Common medical treatment method:	Incidence of psychological conditions	Psychological predictors	Psychological intervention type	Efficacy of psychological and biofeedback interventions
C. Functional Bowel Disorders	<i>Review [2]</i>	<ul style="list-style-type: none"> •25.6% in Israel [3] •41.6% (95% CI: 38.8-44.5) in Canada [4] •44.1% diagnosed after excluding self-report; national average was 44.3% [5] 	<ul style="list-style-type: none"> •Significantly more prevalent in the female gender [3] 			<ul style="list-style-type: none"> • Absenteeism (III-2) [5] 		

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<p>C1. Irritable bowel syndrome (IBS) 1/3</p>	<p><i>Diagnostic criterion*</i></p> <p>Recurrent abdominal pain or discomfort** at least 3 days/month in last 3 months associated with <i>two or more</i> of the following:</p> <ol style="list-style-type: none"> Improvement with defecation Onset associated with a change in frequency of stool Onset associated with a change in form (appearance) of stool <p>* Criterion fulfilled for the last 3 months with symptom onset at least 6 months prior to diagnosis</p> <p>***"Discomfort" means an uncomfortable sensation not described as pain.</p> <p>In pathophysiology research and clinical trials, a pain/discomfort frequency of at least 2 days a week during the screening evaluation is recommended for subject eligibility. [6]</p> <p>Other papers:</p> <ul style="list-style-type: none"> IBS vs IBD, similar QoL but IBS more stress [7] IBS QoL and illness-cost review [8-11] IBS Symptom model [12] IBS CBT Model [13] IBS Questionnaire [14-16] HRQOL-4 item validity [17] Therapist vs no therapist [18] Phone vs in person [19] Subgroups [20-24] Symptom overlap with GERD and FD [25] Review [9, 12, 26-198] Competency level of CBT [199] Endocannabinoid (eCB) system etiology [200] Qualitative research [201-209] Case study [45, 133, 210-221] Complementary and Alternative Medicine (CAM) review [195, 222-226] Behavioural model [138] 	<ul style="list-style-type: none"> 2.9% in Israel [3] 4.4% in AU [227, 228] 8.9% (95% CI: 6.8-10.9) in AU (RII criteria; 4.4% [95% CI:3.6-5.1] RI criteria) [229] 10.1% in Korea [230] 11.2% diagnosed after excluding self-report; national US average was 9.4% [5] 11.8% in AU (95% CI: 9.3-14.3) [231] 12.1% (95% CI: 10.2-14.0) in Canada [4] 12.5% (95% CI: 10.6-14.4) in Sweden [232] 13.6% (Manning criteria), 4.4% (RI), 6.9% (RII) in Australia [233] 13.6% in UK [234, 235] 16.0% (95% CI: 12.9-19.5) in Mexico [236] 17.3% in AU [237] 19.5% in US [238] 22% in UK [239] 31.8% in Saudi Arabia [240] 33% among medical students in Beijing [241] 34% among US nurses [242] 87.5% of IBS patients also had FD [232] 	<ul style="list-style-type: none"> Significantly more prevalent in the female gender [24, 57, 236, 243-249] Female gender was a predictor with <ul style="list-style-type: none"> OR = 2.89 (95.0% CI: 1.65-5.05) [240] OR = 1.39 (95% CI: 1.24-1.57) [250] OR = 2.14 (99% CI: 1.56-2.94) [251] Women significantly more than men in IBS, IBS-C, IBS-A/M, but not IBS-D [236] Men score differently on the Manning criteria [252] Symptoms increase during pre-menstrual distress [253] Six months of living in a school dorm [240] IBS baseline severity independent of sexual dysfunction, but intervention reduce the impact of IBS on sexual function [254] Significant correlation with urolithiasis [255] Primary and secondary care both affected [256] 	<ul style="list-style-type: none"> 5HT3/5HT4 receptor antagonists (I) [257, 258], (II) [259-264] Acupuncture (CAM) (III-2) [265] Antibiotics (IV) [266] Antispasmodics (I) [267-269], (II) [270], (IV) [271] Bile acid malabsorption (IV) [272, 273] Complementary and Alternative Medicine (CAM) (I) [274], (II) [275-277] Duloxetine (I) [278] Fibre (I) [279] Loperamide (III-1) [280], (III-2) [281] Low FODMAPS diet (II) [282-285], (III-2) [286, 287] Medical management (III-2) [288] Pharmacology (I) [289] Probiotics (I) [290, 291], (IV) [292] Rifaximin (I) [293], (II) [294] Tricyclic antidepressants (I) [38, 295], (II) [296-299], (III-2) [300] 	<ul style="list-style-type: none"> GAD & MDD found in 50-94% of clinical samples (I) [301] 47.5% CES-D depression (IV) [236]; 50.0% IBS-D; 60.6% IBS-C; 40.0% IBS-A/M (IV) [236] 63% HADS anxiety, 25% HADS depression (IV) [249] HADS 15.4% morbid depression (27.1% borderline) and 36.1% morbid anxiety (31.1% borderline) (IV) [240] Significantly more likely to have a lifetime diagnosis than control (also GAD), and also significantly higher SCL-90-R scores for GSI, phobic anxiety, obsessive-compulsive, somatisation, interpersonal sensitivity, and hostility (III-2) [302] Significantly higher lifetime prevalence of depression (13.4%), panic (5.2%), or agoraphobia (17.8%) than controls (III-2) [303] 61% experience fatigue (IV) [304] 	<ul style="list-style-type: none"> Abdominal symptoms (IV) [305] Absenteeism (III-2) [5] Abuse history (II) [306], (III-2) [307], (IV) [238] Increased pain (III-2) [308] Anxiety (III-2) [309-313], (IV) [240, 314-317] Bodily attributions as opposed to psychological (III-2) [318, 319] <ul style="list-style-type: none"> Psychological attribution (IV) [320] Bullying history (III-2) [313] Coping <ul style="list-style-type: none"> Catastrophising coping (II) [321-323], (IV) [314, 324] Emotion-focused coping (III-2) [325] Passive coping (III-2) [312, 326, 327] Lower instrumental coping (III-1) [328] Ineffective coping (II) [329] Problems (IV) [244] No difference (IV) [330] No difference to controls in coping (III-2) [312] 	<ul style="list-style-type: none"> Cognitive-behavioural therapy (CBT) (I) [46, 331, 332], (II) [37, 321-323, 333-350], (III-1) [328], (IV) [351-353] Mindfulness (I) [354], (II) [336, 355-358], (IV) [359] Behavioural therapy (BT) (II) [360-362], (III-3) [363] 	<ul style="list-style-type: none"> Cognitive Behavioural Therapy (CBT) <ul style="list-style-type: none"> Superior to control (I) [46, 331, 332] Superior to control (II) [37, 321, 323, 333-341, 343] Superior to stress management and attentional control (II) [342] No difference (II) [345] Acts indirectly through mood (II) [346] Improvement dependent on coping style (II) [337] Superior to TAU with IBS-D (II) [339] Group CBT superior to TAU (II) [344] Superior to control (III-1) [328] Significant improvement (IV) [351, 352] Group hypnotherapy with CBT improvement (IV) [353] Internet CBT (ICBT) <ul style="list-style-type: none"> Superior to WLC (II) [322, 348] Superior to Internet-delivered stress management (II) [349] Superior with systematic exposure (II) [347] Works by directly targeting GSA rather than stress reactivity (II) [350] Mindfulness <ul style="list-style-type: none"> Superior to control (I) [354] Superior to control (II) [336, 355-358] Superior to CBT (II) [336] Mindfulness-based stress reduction (MBSR) improvement (IV) [359] Behavioural Therapy (BT) <ul style="list-style-type: none"> Superior to control (II) [360, 362] No difference (II) [361] Superior to control (III-3) [363]

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C1. Irritable bowel syndrome (IBS) 2/3	<ul style="list-style-type: none"> • IBS vs migraine [364] • IBS-C Review [365-367] • IP-IBS Review [368] • IBS watery/hard episodes [369] • IBS in women review [245, 248] • Clinician vs self CBT [370] • IBS CBT Nurse perspective [61, 121] • Comparison of outcome measures [371] • Maternal separation etiology [372] • Cross-cultural [318, 373] • Diagnostics and management of IBS [374, 375] • Book [376] • Brain imaging review [377] • Medical and lay views of IBS [378] • Psychological food allergy [379] • Intelligence [380] • Hand temperature [381] • Comparison with other chronic illnesses [382] • Medication choice [383] • Protocol for trial [370, 384-389] 	<ul style="list-style-type: none"> • Subtypes: <ul style="list-style-type: none"> ○ IBS-D 0.9% in Israel [3] ○ IBS-D 2.4% (95% CI: 1.2-4.2) in Mexico [236] ○ IBS-D 5.0% (95% CI: 3.7-6.3) in Canada [4] ○ IBS-D 17.9% (95% CI: 15.3-20.5) in USA [390] ○ IBS-C 1.6% in Israel [3] ○ IBS-C 5.4 (95% CI: 4.1-6.7) in Canada [4] ○ IBS-C 6.6% (95% CI: 4.6-9.1) in Mexico [236] ○ IBS-C 17.4% (95% CI: 14.8-20.0) in USA [390] ○ IBS-A 0.4% in Israel [3] ○ IBS-A/M 7.0% (95% CI: 4.9-9.6) in Mexico [236] 			<ul style="list-style-type: none"> • Significantly more anxiety and depression than controls (III-2) [391] • 60% comorbidity (III-2) [392] • 41.54% comorbidity, significantly higher than controls (III-2) [228] • 72.4% comorbid chronic gastritis (III-2) [393] • Over 50% had comorbid anxiety or depression (III-2) [327] 	<ul style="list-style-type: none"> • Comorbidity (III-2) [310, 311] <ul style="list-style-type: none"> ○ lowers likelihood of recovery (II) [394] • Depression (III-2) [309, 310, 312, 313, 366], (IV) [244, 316] • Dyspepsia symptoms (IV) [251] • External locus of control (III-2) [310, 395] • Family affluence (II) [306] • Family conflict (III-2) [318, 319] • Family history of constipation (III-2) [366] • Future despair (III-2) [396] • Grey matter reduction (III-2) [397] • H. pylori infection (IV) [251] • Hereditary but social learning greater influence (III-2) [398] • Illness perceptions (II) [399, 400], (III-2) [401-403], (IV) [317, 320, 330, 404-407] • Neuroticism (III-2) [310, 408, 409] • Obsessive Compulsive Disorder symptoms (III-2) [313] • Other symptoms such as lethargy, backache, nausea (IV) [410] • Pain (IV) [411, 412] <ul style="list-style-type: none"> ○ Neurocognitive response to visceral pain (III-2) [413-415] 	<ul style="list-style-type: none"> • Cognitive therapy (II) [416-419], (III-1) [420, 421], (IV) [316, 371, 422-425] • Hypnotherapy (I) [66], (II) [426-432], (III-2) [433-435], (III-3) [436], (IV) [249, 353, 437-445] • Relaxation therapy (I) [446], (II) [429-432, 447-451], (III-1) [452, 453], (III-2) [454], (IV) [217, 316, 423, 424, 445, 455] 	<ul style="list-style-type: none"> • Cognitive Therapy (CT) <ul style="list-style-type: none"> ○ Superior to self-help and WLC (II) [416] ○ Group CT superior to WLC (II) [418] ○ As efficacious as progressive relaxation (II) [417] ○ No difference (II) [419] ○ Superior to control (III-1) [420] ○ Improved neural function (III-1) [421] ○ Improvement (IV) [316, 371, 422-425] • Hypnotherapy <ul style="list-style-type: none"> ○ Superior to control (II) [426] [427, 430-432] ○ Audiotape slightly less effective (II) [428] ○ Only superior if in specialised research centres (II) [429] ○ Superior to control through visceral hypersensitivity (III-2) [433, 435] ○ Superior to education (III-2) [434] ○ Superior to TAU (III-3) [436] ○ Improvement (IV) [249, 437-440, 442, 444, 445] ○ Improvement enhanced by positive mood colours [443] ○ Group hypnotherapy improvement (IV) [353, 441] • Relaxation <ul style="list-style-type: none"> ○ Superior to control (I) [446] ○ Superior to control (II) [429-431, 447-451] ○ Superior to psychotherapy (II) [432] ○ Superior to control (III-1) [452, 453] ○ Superior to control (III-2) [454] ○ Improvement (IV) [217, 316, 423, 424, 455]

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C1. Irritable bowel syndrome (IBS) 3/3						<ul style="list-style-type: none"> • Perceived food intolerance (IV) [456] • Pessimism (III-2) [396] • Psychological distress (III-2) [457], (IV) [305] • QoL lower (IV) [251] • Relaxed less (III-2) [458] • Sleeping problems (III-2) [459], (IV) [244] • Somatisation (III-2) [310, 311, 396], (IV) [305, 317] • Stress (III-2) [327, 396, 460], (IV) [238, 461] <ul style="list-style-type: none"> ○ High MMIF and MCP-1 proinflammatory (III-2) [462] ○ Cortisol level not reflective of subjective stress (II) [463] ○ Increased proinflammatory cytokine in IBS-D (III-2) [464] ○ Reduced level of activated NK and T cells (III-2) [309] ○ Reduced level of monocyte derived β-endorphin levels and microphage numbers (III-2) [465] • Substance abuse (IV) [238, 244] • Tryptophan depletion (III-2) [466] • Visceral hypersensitivity (II) [321], (III-2) [460, 467-469], (IV) [411, 470] 	<ul style="list-style-type: none"> • Psychodynamic interpersonal therapy (II) [471-476], (IV) [477] • Psychological therapies (I) [152, 478-480] • Psychoeducation (II) [481], (IV) [424, 482, 483] • Biofeedback (III-1) [420], (IV) [316, 423, 424, 484] • Multidisciplinary approach (III-2) [485] • Comprehensive self-management (CSM; psychoeducation, diet, relaxation, CBT) (II) [19, 463, 486] • Stress control training (III-1) [487] • Body awareness therapy (III-2) [488] • Self-regulatory treatment (relaxation, thermal biofeedback, cognitive therapy) (II) [219], (III-1) [316, 424], (IV) [315] 	<ul style="list-style-type: none"> • Psychodynamic Interpersonal <ul style="list-style-type: none"> ○ Superior to control (II) [471-476] ○ Improvement with or without comorbidity (IV) [477] • Psychological therapies <ul style="list-style-type: none"> ○ Superior to control (I) [152, 478-480] • Psychoeducation <ul style="list-style-type: none"> ○ Superior to control (II) [481] ○ Improvement (IV) [424, 482, 483] • Biofeedback <ul style="list-style-type: none"> ○ Superior to control (III-1) [420] ○ Improvement (IV) [316, 423, 424, 484] • Multidisciplinary approach superior to control (III-2) [485] • CSM superior to control (II) [19, 463, 486] • Stress control training not effective (III-1) [487] • Body awareness therapy superior to control [488] • Self-regulatory treatment superior to control (II) [219], (III-1) [316, 424], improvement (IV) [315]

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C2. Functional bloating	<p><i>Diagnostic criteria*</i></p> <p><i>Must include both of the following:</i></p> <ol style="list-style-type: none"> 1. Recurrent feeling of bloating or visible distension at least 3 days/month in the last 3 months 2. Insufficient criteria for a diagnosis of functional dyspepsia, irritable bowel syndrome, or other functional GI disorder <p>* Criteria fulfilled for the last 3 months with symptom onset at least 6 months prior to diagnosis [6]</p> <p>Review [489]</p>	<ul style="list-style-type: none"> • 4.1% (95% CI: 2.7-5.5) in AU (RII criteria; 11.2% [95% CI:10.0-12.3] RI criteria) [229] • 10.8% (95% CI: 8.2-13.9)[236]. • 11.2% in AU [227, 228] • 13.1% (95% CI: 11.1-15.1) in Canada [4] • 17.7% in Israel [3] • 30.7% diagnosed after excluding self-report; national average was 32.1% [5] • 10-25% [489] 	<ul style="list-style-type: none"> • Significantly more prevalent in the female gender [3, 236] 	<ul style="list-style-type: none"> • Antispasmodics (II) [270, 490, 491], • Low FODMAPS diet (II) [492], (III-2) [493], (IV) [286] • Polyethylene Glycol (IV) [494] • Proton pump inhibitors (II) [495], (III-2) [496] 	<ul style="list-style-type: none"> • 24.1% CES-D depression (IV) [236] • 42.63% comorbidity, significantly higher than controls [228] 	<ul style="list-style-type: none"> • Absenteeism (III-2) [5] 		
C3. Functional constipation	<p><i>Diagnostic criteria*</i></p> <ol style="list-style-type: none"> 1. Must include <i>two or more</i> of the following: <ol style="list-style-type: none"> a. Straining during at least 25% of defecations b. Lumpy or hard stools in at least 25% of defecations c. Sensation of incomplete evacuation for at least 25% of defecations d. Sensation of anorectal obstruction/blockage for at least 25% of defecations e. Manual maneuvers to facilitate at least 25% of defecations (e.g., digital evacuation, support of the pelvic floor) f. Fewer than three defecations per week 2. Loose stools are rarely present without the use of laxatives 3. Insufficient criteria for irritable bowel syndrome <p>* Criteria fulfilled for the last 3 months with symptom onset at least 6 months prior to diagnosis [6]</p> <p>Review [497-503]</p>	<ul style="list-style-type: none"> • 2.8% (95% CI: 1.7-4.1) in AU (RII criteria; 7.8% [95% CI:6.8-7.8] RI criteria) [229] • 3.6% diagnosed after excluding self-report; national average was 3.0% [5] • 7.4% (95% CI: 5.3-10.1) in Mexico [236] • 7.5% in Israel [3] • 7.8% in AU [227, 228] • 14.9% (95% CI: 12.8-17.0) in Canada (RII criteria; 16.7% RI criteria) [4] • 32% of women, 22% of men in UK [504] 	<ul style="list-style-type: none"> • Significantly more prevalent in the female gender [3] • About 60% were overweight with a BMI above 25 [505] 	<ul style="list-style-type: none"> • Antidepressants (I) [332], (II) [473, 506-508], • Fibre (I) [509], • Lactulose and codeine (II) [510], (IV) [494] • Laxatives (I) [511], Laxatives (II) [512], • Linaclotide (II) [513-517], • Lubiprostone (II) [518, 519], • Medical management (III-2) [288] • Prucalopride (II) [263, 520-523], • Tegaserod (II) [524] 	<ul style="list-style-type: none"> • 24.3% CES-D depression (IV) [236] • 33.3% HADS anxiety (14.8% borderline), 22.2% depression (13.0% borderline); on MINI: 33.3% MDD, 31.5% GAD, 22.2% hypomania, 14.8% OCD, 14.8% suicidal ideation, 9.3% dysthymia, 5.6% agoraphobia, 3.7% social anxiety, 3.7% panic disorder, and 1.9% PTSD (IV) [525] • Significantly higher anxiety (SAS) and depression (SDS) scores than controls (III-2) [526] • 40.98% comorbidity, significantly higher than controls (III-2) [228] 	<ul style="list-style-type: none"> • Absenteeism (III-2) [5] 	<ul style="list-style-type: none"> • Biofeedback (II) [527-530], (IV) [531-537] 	<ul style="list-style-type: none"> • Biofeedback <ul style="list-style-type: none"> ○ Superior to Diazepam and placebo (II) [527] ○ Superior to sham and TAU (II) [528] ○ Superior to polyethylene glycol (II) [530] ○ Improvement (IV) [531-537] ○ No difference (II) [529]

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C4. Functional diarrhea	<p><i>Diagnostic criterion*</i></p> <p>Loose (mushy) or watery stools without pain occurring in at least 75% of stools</p> <p>* Criterion fulfilled for the last 3 months with symptom onset at least 6 months prior to diagnosis [6]</p> <p>Review [538, 539]</p>	<ul style="list-style-type: none"> • 0.1% (95% CI: -0.01-0.4) in AU (RII criteria; 8.1% [95% CI:7.2-9.1] RI criteria) [229] • 0.4% in Israel [3] • 1.4% (95% CI: 0.6-2.9) in Mexico [236] • 1.7% diagnosed after excluding self-report; national average was 1.6% [5] • 8.1% in AU [227, 228] • 8.5% (95% CI: 6.9-10.1) in Canada [4] 		<ul style="list-style-type: none"> • Antidepressants (I) [332] • Diet (III-2) [493] • Medical management (III-2) [288] • Probiotics (I) [540] 	<ul style="list-style-type: none"> • 42.9% CES-D depression (IV) [236] • 43.05% comorbidity, significantly higher than controls (III-2) [228] 			
C5. Unspecified functional bowel disorder	<p><i>Diagnostic criterion*</i></p> <p>Bowel symptoms not attributable to an organic etiology that do not meet criteria for the previously defined categories</p> <p>* Criterion fulfilled for the last 3 months with symptom onset at least 6 months prior to diagnosis [6]</p>	<ul style="list-style-type: none"> • 10.6% (95% CI: 8.0-13.6) [236]. 			<ul style="list-style-type: none"> • 13.2% CES-D depression (IV) [236] 			

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