

**Controlled Trial of a Multicomponent Cognitive-Behavioral Group Treatment  
for Irritable Bowel Syndrome**

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**A Dissertation submitted in partial fulfillment of the requirements for the Degree of Doctor  
of Philosophy**

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**CONTROLLED TRIAL OF A MULTICOMPONENT COGNITIVE-BEHAVIORAL GROUP  
TREATMENT FOR IRRITABLE BOWEL SYNDROME**

**BY**

**GREGG A. TKACHUK**

**A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University of  
Manitoba in partial fulfillment of the requirement of the degree  
of  
DOCTOR OF PHILOSOPHY**

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## **Acknowledgements**

Many people deserve mention for their contribution to this research. First, I would like to graciously acknowledge Dr. Lesley Graff for her dedication, commitment, and support of this project and for her role in my development as a scientist-practitioner. I would also like to honor Dr. Garry Martin, my mentor, for whom mere words cannot adequately express my profound gratitude. His warmth, humor, flexibility, and expertise make him an exemplary role model. I am truly fortunate, and a better person, for having known him.

I would also like to acknowledge the other members of the dissertation committee, Drs. Charles Bernstein, Michael Thomas, and Joseph Pear. A special thank you to the external examiner, Dr. Edward Blanchard, for agreeing to take time out of his extremely busy schedule to review the manuscript, his helpful suggestions, and his attendance at the defense in Winnipeg.

Special thanks also go to Drs. Patricia Dubbert, Donald Penzien, and the rest of the University of Mississippi Medical Center/VAMC Clinical Psychology Residency Program faculty for their commitment to the scientist-practitioner model and encouragement to complete the data analysis and writing of this manuscript during my residency.

Finally, I save the most important acknowledgement for the last. To my wonderful wife, Joanna Chen, for her never-ending encouragement and support, and for her flawless contribution as research assistant, I offer my profound love and gratitude.

This dissertation is dedicated to the memory of my parents.

**ABSTRACT**

**Background:** Standard medical treatments have not been consistently effective for IBS patients. Psychological interventions, targeting symptom reduction and improved daily functioning, have empirical support as a viable treatment option, with individual cognitive behavioral therapy (CBT) emerging as efficacious in clinical trials. This study compared the efficacy of cost-efficient Group CBT with a home-based symptom monitoring with weekly telephone contact (SMTC) treatment, extending previous uncontrolled research in this area. **Methods:** The study participants were refractory IBS patients recruited exclusively through gastroenterologists and family physicians. After receiving a diagnosis by GI specialists based on the Rome I criteria, they were assessed for psychiatric comorbidity, matched on Axis I diagnosis and IBS subtype, and randomly assigned to the treatment conditions. The 10-session Group CBT treatment protocol was based on components identified by Blanchard (1993) and Toner, Segal, et al. (1998) including education, relaxation, cognitive restructuring, and assertiveness training. In the comparison (SMTC) condition, participants monitored symptoms daily and were contacted weekly by phone to provide support and discussion of symptom patterns. Outcome measures included IBS symptom reduction scores (13 wks of daily monitoring; 4 wk global assessments), as well as psychological functioning (depression: BDI II; bowel-related cognitive-emotional distress: CSFBD; trait anxiety: STAI-T; discomfort with assertion: AQ, and quality of life: SF36), all assessed pre-, post- and, for Group CBT, at three month follow-up. **Results:** Twenty-eight patients (96% female, mean age 39.5, range 18-68, mean symptom duration 9 yrs) took part. Data were analyzed based on change scores for matched pairs. Based on daily symptom measures, a third of patients had significant improvement ( $\geq 50\%$  reduction) in pain from pre to post treatment, equally across treatment conditions. Group CBT participants reported

significantly higher global ratings of pain relief and GI symptom improvement than SMTC participants. There was a significant reduction in daily pain scores for Group CBT at three-month follow-up. Based on MANOVA, there was significant improvement in psychological functioning and quality of life for the Group CBT participants in comparison to the SMTC participants, with changes in bowel-related cognitive-emotional distress contributing the largest variance ( $R^2 = 0.33$ ). These improvements were maintained at the three-month follow-up. At post-treatment, Group CBT patients had significantly lower scores on the *Precontemplation* scale, and significantly higher scores on the *Action* and *Maintenance* scales, of the Pain Stages of Change Questionnaire than SMTC patients. Percentage completion of Group CBT homework exercises was significantly related to post-treatment GI symptom reduction. **Conclusions:** Group CBT was more effective in reducing IBS-related psychological morbidity and enhancing quality of life, with improvements maintained three months later. Group CBT patients reported better overall relief of pain and general GI symptoms, and daily symptom tracking revealed that significant pain reduction was achieved at 3-month follow-up. Patients' motivational readiness for change and completion of homework assignments were significantly related to treatment outcome. Future research should include specific measures of behavioral avoidance and coping, as well as, data on health-care utilization as additional indices of outcome.

## **Controlled Trial of a Multicomponent Cognitive-Behavioral Group Treatment for Irritable Bowel Syndrome**

Irritable bowel syndrome (IBS) is a widespread functional disorder of the lower gastrointestinal (GI) tract, characterized by abdominal pain or extreme abdominal tenderness, as well as altered bowel habits (diarrhea, constipation, or alternating diarrhea and constipation) for which no structural or other physiological explanation can readily be identified. Since there are no biological markers to define IBS and it has typically been a diagnosis of exclusion, investigators developed a consensus definition and diagnostic criteria, known as the Rome criteria (Thompson, Creed, Drossman, Heaton, & Mazzacca, 1992) for IBS and other functional GI disorders. Irritable bowel syndrome was defined as a combination of chronic or recurrent gastrointestinal symptoms not explained by structural or biochemical abnormalities within the gastrointestinal tract and associated with symptoms of pain and disturbed defecation and/or symptoms of bloatedness and distension. It is believed to result from dysregulation of the coordinated sensory and motor functioning of the intestinal or enteric nervous system (ENS) and the central nervous system (CNS); (also called the Brain-Gut Axis).

### **Epidemiology of IBS**

Epidemiological surveys have shown IBS to be one of the most frequently seen disorders in medical settings. Its prevalence is estimated to be 14% - 24% of women and 5% - 19% of men (Drossman, Whitehead, & Camilleri, 1997). It accounts for 12% of primary care and 30%-50% of gastroenterology practice (Mitchell & Drossman, 1987). Individuals with IBS correspondingly account for a large proportion of health care spending. A U. S. survey found that IBS patients incurred average annual health care costs over \$300 greater than individuals without IBS, making it a multi-billion dollar health care problem (Talley, Gabriel, Harmsen, Zinsmeister, &

Evans, 1995). In Canada, IBS has been estimated to account for \$352 million in direct, and over \$1 billion in indirect costs – which translates to 0.5% of total Canadian national health expenditures (Bentkover, Field, Greene, Plourde, & Casciano, 1999).

IBS has had a further significant societal impact. The U. S. Householder study (Drossman, Li, Andruzzi, Temple, & Talley, 1993) revealed that people with symptoms of IBS had missed three times as many work days in the year before the survey than those without bowel symptoms. Finally, IBS takes a significant toll on patients' health-related quality of life (HRQOL) (Guyatt, Feeny, & Patrick, 1993). IBS patients have reported significant impairments in functional status (Whitehead, Burnett, Cook, & Taub, 1996), higher levels of disability, and an increased frequency of doctor visits (Drossman et al., 1993), compared to control groups.

### **Physiological Mechanisms in IBS**

A previous review of research concluded that IBS symptoms appear to be due to both disturbances in intestinal motility and enhanced visceral sensitivity (Drossman, et al., 1997). Further investigation provided additional evidence that patients with IBS have a greater propensity to label visceral sensations negatively and display a lower tolerance for rectal balloon distension, relative to normal controls (Naliboff et al., 1997). Munkata et al. (1997) were able to induce rectal hypersensitivity in normosensitive IBS patients, but not controls, using repetitive stimulation of the sigmoid colon. A third study used positron emission tomography (PET) to demonstrate that IBS patients, relative to controls, had an absence of activation in the perigenual anterior cingulate cortex (ACC) and an activation of the left prefrontal cortex (PFC) in response to both actual and anticipated rectal balloon stimulation (Silverman et al., 1997). The ACC and PFC are thought to play respective roles in emotional and cognitive responding to aversive events (Naliboff, Munkata, Chang, & Mayer, 1998).



### **Psychosocial Factors in IBS**

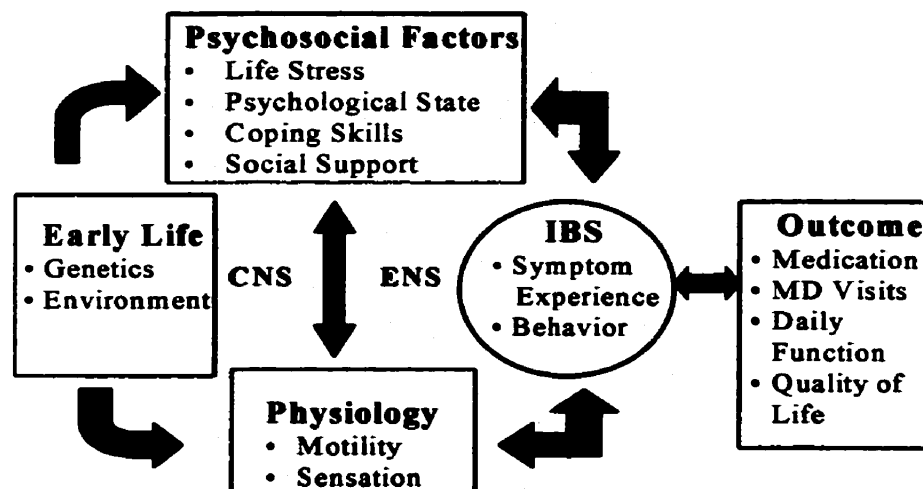
Psychosocial factors such as stress and psychological disturbances have been found to have a modulating affect on the IBS illness experience and subsequent behavior of those afflicted. Studies examining the relationship between daily stress and gastrointestinal symptoms suggest that daily stress is significantly related to gastrointestinal symptoms in IBS sufferers (Dancey, Taghavi, & Fox, 1998; Drossman, Sandler, McKee, & Lovitz, 1982; Levy, Cain, Jarrett, & Heitkemper, 1997; Whitehead, Crowell, Robinson, Heller, & Schuster, 1992). Despite experiencing similar levels of potentially stressful life events, IBS patients and non-patients (IBS non-treatment seekers) showed higher levels of gastrointestinal symptoms and perceived stress than did non-IBS controls (Levy et al., 1997). Further, a time series analysis of daily symptoms revealed that IBS symptomatology tended to occur in predictable clusters rather than randomly (Stevens, Wan, & Blanchard, 1997).

Survey studies have found that IBS sufferers who present to physicians tend to be more frequently diagnosed with psychiatric disorders than other medical patients, healthy controls, or those with IBS who do not seek medical attention for their symptoms (Blanchard, Scharff, Schwartz, Suls, & Barlow, 1990; Drossman et al., 1988; Whitehead, Bosmajian, Zonderman, Costa, & Schuster, 1988; Whitehead et al., 1992). In recent treatment studies (Greene & Blanchard, 1994; Payne & Blanchard, 1995; Vollmer & Blanchard, 1998), 80% - 90% of patients were diagnosed with at least one DSM Axis I disorder; most frequently an anxiety or mood disorder. Furthermore, IBS patients often report having suffered a major trauma such as physical or sexual abuse, or a major loss - such as the recent death of a loved one (Drossman, Creed, et al., 1995). However, similar traumatic experiences are also highly reported in other medical syndromes such as somatization, chronic pain, headache, eating disorders, and alcohol

and substance abuse, thus complicating interpretations for any unique relationship between traumatic experiences and IBS (Drossman, Talley, Leserman, Olden, & Barreiro, 1995).

### **Biopsychosocial Model of IBS**

There is now widespread acceptance that the etiology and course of IBS is best understood through a biopsychosocial perspective (Drossman, 2000). Drossman et al. (1997) proposed a biopsychosocial model of irritable bowel syndrome to integrate the various factors thought to play a role in the disorder (See Figure 1). Early life factors (e.g., genetic predisposition and environmental factors) influence later psychosocial factors, physiological functioning, their interaction via the central nervous system (CNS) / enteric nervous system (ENS) axis and susceptibility to developing IBS. The combined and integrated effects of altered physiology and psychosocial status will affect how symptoms are experienced, behavior in relation to symptoms, and ultimately the outcome (e.g., taking medications, physician visits, daily functioning, quality of life). Furthermore, the clinical outcome will, in turn, affect the severity of the disorder.

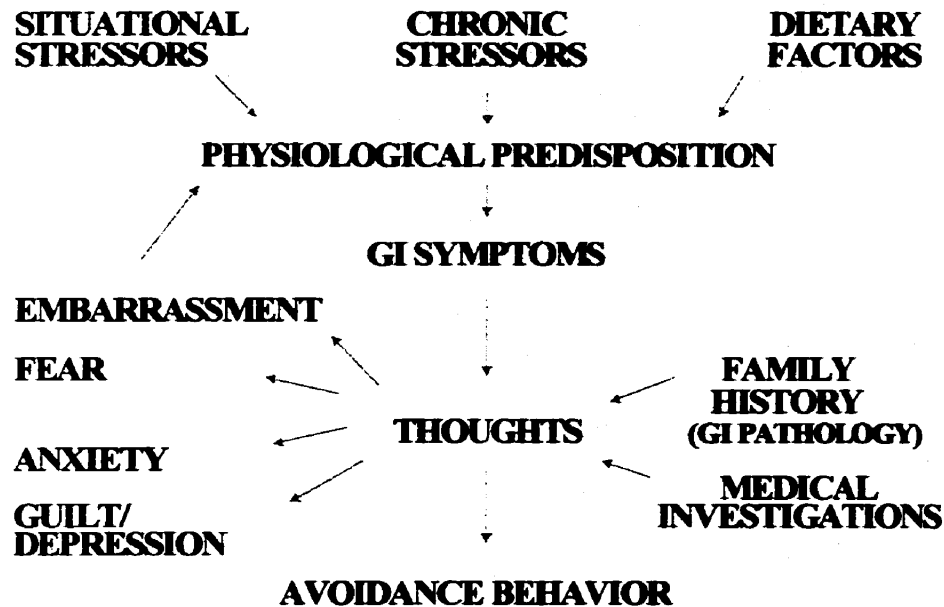


**Figure 1.** *Biopsychosocial Model of Irritable Bowel Syndrome* (Drossman et al., 1997)

### **Cognitive-Behavioral Model of IBS**

To account for psychosocial and illness behavior factors involved in IBS, Toner, Segal, et al. (1998) proposed a specific, comprehensive cognitive-behavioral model. According to the model, IBS symptoms and distress are perpetuated by an interaction between psychological, social, and physiological factors. Cognitions such as “there must be a medical explanation for this pain” lead to certain behaviors (further medical consultations), hypervigilance of bodily sensations, and increased anxiety and arousal, which may increase symptoms and sensitivity to pain. Sensations are experienced as more noxious and intense, leading to further thoughts that something must have been overlooked, and increased physiological arousal and self-scrutiny, which amplifies other bodily sensations. These new sensations are often interpreted as confirmatory evidence of a purely physical cause. Independent of the original cause of the symptoms, cognitions about the illness and the associated emotional reaction serve to maintain and amplify the symptoms. Other contributing factors may include degree of situational and chronic stress; level of preexisting psychological distress; interpersonal conflict; emotional, physical, or sexual abuse; or loss. The manner in which an individual psychologically approaches IBS (i.e., hypervigilance, worry, serious disease attributions) and life events more generally, affects emotional response (e.g., anxiety, fear, embarrassment, shame, guilt, depression), gastrointestinal symptoms, behavioral coping, and quality of life.

A schematic model incorporating elements identified in previously proposed behavioral (Latimer, 1983) and cognitive-behavioral (Toner, Segal, et al., 1998) models was adapted for this study and can be seen in Figure 2.



**Figure 2.** *Cognitive-Behavioral Model of IBS*

Situational stressors, chronic stressors, and dietary factors (i.e., response to food and parameters of eating behavior such as frequency, quantity, and rate) may lead to episodic or chronic arousal of the sympathetic division of the CNS. For an individual already prone to experiencing visceral hypersensitivity and altered motility in response to sympathetic activation, gastrointestinal symptoms may result. Additional factors such as family history of GI pathology and previous medical investigations can also contribute to attributions concerning symptomatology. Thoughts such as “I might have cancer” may provoke fear. Other thoughts such as “I should be able to control my bowels” may provoke frustration or a depressive reaction. These emotional reactions maintain or further increase already elevated levels of sympathetic arousal, which can serve to prolong or exacerbate symptoms. Anxiety provoking thoughts

surrounding a bowel accident or near miss often lead to avoidance of social opportunities, travel, restaurants, or certain foods that may otherwise provide anxiety-reducing contrary evidence, positive reinforcement, and increased self-efficacy for approaching similar opportunities in the future. For a functional description of how behavioral principles may be operating for patients with IBS, and a selected review of research, refer to Appendix 1.

### **Standard Medical Treatment for IBS**

Standard medical treatment has routinely consisted of individualized trials of bulking agents, antispasmodics, and, more recently, tricyclic antidepressants. Conventional pharmacotherapy approaches have been disappointing in their effectiveness. Klein (1988) concluded that there were no scientifically adequate trials showing consistent advantage for one medication, or class of medications, over another or over placebo. More recently, Drossman et al. (1999) reported that at least five controlled outcome studies clearly support the continued use of antidepressants as agents of pain relief for functional gastrointestinal disorders. A new class of drugs, the 5HT<sub>3</sub> antagonists, has been problematic. One promising medication, alosetron, was recently withdrawn from the market amid controversy regarding serious adverse side effects.

In this context of inadequate pharmacotherapy interventions, there has recently been increased attention given, within medical treatment guidelines, to the importance of the therapeutic relationship, the need to provide education and reassurance, and the value of training patients to monitor their symptoms and associated factors (Drossman et al., 1997). With the recognition that psychosocial factors have a modulating impact on the course and outcome of IBS, and the inconsistent patient response to medical treatment alone, clinical health psychologists have collaborated with gastroenterologists and primary care physicians in providing multidisciplinary treatment to IBS patients.

### **Psychological Treatments for Irritable Bowel Syndrome**

Four main types of psychological treatment for Irritable Bowel Syndrome (IBS) have been investigated in efficacy studies: multicomponent cognitive-behavioral treatments, individual components of behavior therapy, short-term dynamic psychotherapy, and hypnotherapy. Although a few uncontrolled treatment outcome studies have been done (see Table 1), only controlled studies are reviewed in the text to evaluate findings and draw conclusions based on Chambless and Hollon's (1998) criteria (see Appendix 2) for evaluating the effectiveness of psychological treatments. Detailed information concerning experimental design, treatment groups, and dependent measures for the reviewed studies can be found in Table 1. It is important to note that in the treatment studies cited, IBS patients were variously recruited through a combination of primary physician referral, specialist physician referral, and self-referral through advertisements. Therefore, in these studies, the participants reflect a somewhat heterogeneous set of primary and tertiary care IBS patients. Patients recruited from these various populations are likely to have different patterns of response to treatment, with more refractory patients being encountered in tertiary care settings (Veldhuyzen van Zanten et al., 1999).

**Table 1**  
**Summary of Psychological Treatment Research for Irritable Bowel Syndrome**

Study	Design	Treatment	Measures	Results
<b>Cognitive-Behavior Therapy</b>				
Wise et al. (1982)	One Group Pre-Post (n=20)	6-90 min weekly sessions of Group CBT (Educ/ Stress Coping/Relax)	Pre-Post: IBS Symptoms, SCL, Locus of Control	30% of Patients had Reduced Gas/29% Cramps/ 15% Constip/25% Diarrhea/
Bennett & Wilkinson (1985)	Randomized Between Group with Pre-Post Measures (n=33)	1) 8-1 hr sessions (Educ/Relax/Cog) 2) Medical Treatment	Pre-Post: IBS Quest., Relatives Quest., STAI	CBT=Med / IBS Reduced in both Treatments
Lynch & Zamble (1987)	Single-Subject A-B with replication (n=6)	8 sessions (Educ/Relax/ Assertion/Cog)	Daily Symptom Diary, Pre-Post: BDI, EPI, IBS Quest., LES, STAI	5 of 6 Subjects Improved on Symptom Measures
Neff & Blanchard (1987)	Single-Subject A-B with replication (n=4)	12-1 hr sessions over 8 wks (Educ/Relax/Biofeed/ Cog)	Daily Symptom Diary, CPSSR: 50% Criterion	2 Subjects Improved, 2 Moderately Improved
Blanchard & Schwarz (1987)	Randomized Between Group with Pre-Post Measures (n=19)	1) Same as above 2) Symptom Monitoring	Daily Symptom Diary, CPSSR: 50% Criterion	CBT>SM / 60% of CBT Improved 11% of SM Improved
Lynch & Zamble (1989)	One Group Pre-Post Design (n=14)	12 Session Small Group CBT (n=3-6) (Educ/ Relax/Biofeed/Cog)	Daily Symptom Diary, CPSSR: 50% Criterion	64% of Subjects Improved
Lynch & Zamble (1989)	Randomized Between Group with Pre-Post	1) 8-2 hr Sessions (Educ/ Relax/Cog/Assertion)	Daily Symptom Diary, CPSSR: 50% Criterion	CBT>Wait / 64% of CBT Improved

Corney et al. (1991)	Measures (n=21) Randomized Between Group with Pre-Post Measures (n=42)	2) Wait List Control 1) 6 to 15-1hr weekly sessions (Educ/Cog/Beh Rehearsal/Bowel Retraining/Pain Mgmt) conducted by nurse 2) Medical Treatment	BDI, STAI, EPI, PSC GHQ, SPQ, Pain Rating Scales, Clinical Interview, Pre-Post GI Symptoms	0% of SM Improved CBT=Medical / IBS Reduced in both Treatments
Shaw et al. (1991)	Randomized Between Group with Pre-Post Measures (n=35)	1) 40 min sessions weekly for 6 months with physiotherapist (Educ/Breathing/Cog) 2) Medical Treatment	Pre-Post Symptom Rating Scales	CBT>Conventional
Blanchard et al. (1992)	Randomized Between Group with Pre-Post Measures (n=30)	1) 12-1hr sessions over 8 weeks (Educ/Relax/ Biofeed/Cog) 2) Attention Placebo 3) Symptom Monitoring	Daily Symptom Diary, CPSR: 50% Criterion, BDI, STAI, PSC, MMPI	CBT=ATP=SM / 60% of CBT Improved 50% of ATP Improved 20% of SM Improved
	Randomized Between Group with Pre-Post Measures (n=92)	1) 12-1hr sessions over 8 weeks (Educ/Relax/ Biofeed/Cog) 2) Attention Placebo 3) Symptom Monitoring	Daily Symptom Diary, CPSR: 50% Criterion, BDI, STAI, PSC, MMPI	CBT=ATP>SM / 52% of CBT Improved 47% of ATP Improved 32% of SM Improved
van Dulman et al. (1996)	Nonrandomized Between Group with Pre-Post Measures (n=45)	1) 8-2 hr sessions over 3 months of Group CBT (Educ/Cog/Relax) 2) Waiting List	Pre-Post: Symptom Diary, 50% Symptom Reduction Criterion, SCL, Self-Rated Avoidance and Coping	CBT>Wait List 44% of CBT Improved 11% of Wait List Improved



**Relaxation and Biofeedback**

<p><b>Radnitz &amp; Blanchard (1988)</b></p>	<p>Multiple-Baseline across Subjects (n=5)</p>	<p>10 sessions over 5 weeks (Educ/Bowel Sound Biofeedback)</p>	<p>Daily Symptom Diary, CPSSR: 50% Criterion</p>	<p>3 of 5 Subjects (60%) Improved</p>
<p><b>Blanchard et al. (1993)</b></p>	<p>Randomized Between Group with Pre-Post Measures (n=16)</p>	<p>1) 10 sessions over 8 weeks (Educ/Relaxation) 2) Symptom Monitoring</p>	<p>Daily Symptom Diary, CPSSR: 50% Criterion, ADIS-R</p>	<p>Relax&gt;SM / 50% of Relax Improved 12.5% of SM Improved</p>

**Cognitive Therapy**

<p><b>Green &amp; Blanchard (1994)</b></p>	<p>Randomized Between Group with Pre-Post Measures (n=20)</p>	<p>1) 10-1hr sessions over 8 weeks (Educ/Cognitive Therapy) 2) Symptom Monitoring</p>	<p>GI Symptom Diary, CPSSR: 50% Criterion, ADIS-R, BDI, STAI, DAS, ATQ</p>	<p>Cognitive&gt;SM / 80% of Cognitive Improved 10% of SM Improved</p>
<p><b>Payne &amp; Blanchard (1995)</b></p>	<p>Randomized Between Group with Pre-Post Measures (n=34)</p>	<p>1) 10-1hr sessions over 8 weeks (Educ/Cognitive Therapy) 2) Self-Help Group 3) Symptom Monitoring</p>	<p>Daily Symptom Diary, CPSSR: 50% Criterion, ADIS-R, BDI, STAI, DAS, ATQ</p>	<p>Cog&gt;Self-Help=SM / 75% of Cognitive Improved 25% of Self-Help Improved 10% of SM Improved</p>
<p><b>Vollmer &amp; Blanchard (1998)</b></p>	<p>Randomized Between Group with Pre-Post Measures (n=32)</p>	<p>1) 10-90 min weekly sessions (Small Group n=3-5 Cognitive Therapy) 2) 10-60 min weekly sessions (Ind. Cognitive</p>	<p>Daily Symptom Diary, CPSSR: 50% Criterion, ADIS-R, Group Attitude Scale</p>	<p>Group Cog=Ind Cog&gt;SM / 64% of Grp Cog Improved 55% of Indiv. Cog Improved 10% of SM Improved</p>

Therapy)  
3) Symptom Monitoring

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**Brief Dynamic/Interpersonal Psychotherapy**

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Svedlund et al. (1983)	Randomized Between Group with Pre-Post Measures (n=101)	1) 10-1hr sessions over 3 months (Short-Term Dynamically-Oriented Psychotherapy + Medical Therapy) 2) Medical Therapy	Semi-Structured Interview, Psychopathology Rating Scale, Pre-Post GI Symptoms	Psychotherapy + Med> Medical for Reduced Abdominal Pain and Bowel Dysfunction
Guthrie et al. (1991)	Randomized Between Group with Pre-Post Measures (n=102)	1) 6 sessions over 12 weeks (Short-Term Dynamically-Oriented Psychotherapy + Medical Therapy) 2) Medical Therapy	Daily Symptom Diary, Psychiatric Assessment Scale, Hamilton Depression Rating Scale, Clinical Anxiety Scale	Psychotherapy + Med> Medical for Reduced Abdominal Pain and Diarrhea

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**Hypnotherapy**

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Whorwell et al. (1984)	Randomized Between Group with Pre-Post Measures (n=30)	1) 7-30 min sessions over 3 months (Hypnotherapy Directed at Relaxation and Intestinal Motility) 2) 7-30 min sessions over 3 months (Supportive Psychotherapy + Placebo)	Daily Symptom Diary, General Health Questionnaire	Hypnotherapy>Control for Changes in Abdominal Pain, Bowel Habit, and Well-Being
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Harvey et al (1989)	Randomized Between Group with Pre-Post Measures (n=33)	1) 4-40 min sessions over 7 weeks (Group Hypno- therapy n=5-7 Directed at Relaxation and Intestinal Motility) 2) 4-40 min sessions over 7 weeks (Ind. Hypno- therapy Directed at Re- laxation and Intestinal Motility)	Daily Symptom Diary, General Health Questionnaire	Group=Individual / Group: 35% Symptom- Free, 35% Reduced Symptoms, 30% Not Improved Indiv.: 31% Symptom- Free, 19% Reduced Symptoms, 50% Not Improved
Galovski & Blanchard (1998)	Multiple Baseline across subjects (n=6)	12-60 min weekly sessions (Hypnotherapy directed at Relaxation and Gut Motility)	Daily Symptom Diary; CPSR 50% Criterion; BDI; STAI;	Hypnotherapy > SM; 60% of Hypnotherapy Improved vs. 0% of SM

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Note: Educ = Psychoeducation; Relax = Relaxation Training; Cog = Cognitive Therapy; Biofeed = Biofeedback; Beh = Behavior; Mgmt = Management; SCL = Symptom Checklist 90; STAI = State Trait Anxiety Inventory; BDI = Beck Depression Inventory; EPI = Eysenck Personality Inventory; LES = Life Events Survey; GHQ = General Health Questionnaire; PSC = Psychosomatic Symptom Checklist; SPQ = Social Problem Questionnaire; MMPI = Minnesota Multiphasic Personality Inventory; ADIS-R = Anxiety Disorders Interview Schedule-Revised; DAS = Dysfunctional Attitudes Scale; ATQ = Automatic Thoughts Questionnaire; CPSR: 50% criterion = Percentage of patients who reduce IBS symptoms by at least 50% from baseline levels.

### **Controlled Studies of Multicomponent Cognitive-Behavioral Treatments**

Multicomponent cognitive-behavioral treatment packages have uniformly included education about normal bowel functioning and the reciprocal relationship between the central nervous system and gut functioning, gastrointestinal symptom monitoring, relaxation training, and various cognitive strategies for coping with stress. Some researchers have included additional treatment components such as thermal biofeedback (Neff & Blanchard, 1987; Blanchard, Schwarz, et al., 1992), behavioral contracting and assertion training (Lynch & Zamble, 1989), and pain management strategies and behavioral rehearsal of stress coping responses (Corney, Stanton, Newell, Clare, & Fairclough, 1991). See Table 1 for specific details of the studies reviewed below.

Multicomponent cognitive-behavior therapy conducted in an individualized format is more effective than symptom monitoring or wait list control conditions in significantly reducing gastrointestinal symptoms based on daily symptom ratings and psychological distress as measured by self-report questionnaires (Blanchard, Schwarz, et al., 1992: Study 2; Lynch & Zamble, 1989; Neff & Blanchard, 1987). Multicomponent cognitive-behavior therapy appears to be as effective (Bennett & Wilkinson, 1985; Corney et al., 1991), or more effective (Shaw et al., 1991), than conventional medical treatments for IBS consisting of bulking agents, antispasmodics, and antidepressants in reducing gastrointestinal symptoms based on global ratings. In contrast, multicomponent cognitive-behavior therapy failed to distinguish itself as a uniquely effective treatment for IBS when it was compared with a credible attention placebo condition consisting of "pseudomeditation" and EEG alpha wave biofeedback in two separate studies (Blanchard, Schwarz, et al., 1992). However, the researchers reported anecdotal evidence that many patients in the placebo control condition of these studies actually used their meditation

procedures as a form of relaxation or mental imagery to calm or distract themselves from stress and gastrointestinal symptoms. This suggests that the placebo control condition may have inadvertently included active rather than placebo elements.

Multicomponent cognitive-behavior therapy has also been assessed in a more cost-efficient group format. The group intervention approach has shown promise in several uncontrolled studies (Blanchard & Schwarz, 1987; van Dulmen, Fennis, & Bleijenberg, 1998; Wise, Cooper, & Ahmed, 1982), but to date there have been no controlled investigations reported in the literature.

In summary, based on Chambless and Hollon's (1998) criteria for empirically supported treatments, the following can be concluded regarding multicomponent cognitive-behavior therapy:

1. Individualized multicomponent cognitive-behavior therapy can be considered an efficacious treatment for IBS
2. Group multicomponent cognitive-behavior therapy has yet to be demonstrated as an efficacious treatment for IBS. There have been no randomized, controlled studies reported.

### **Controlled Studies of Single Component Interventions**

Two components typically found in multicomponent cognitive-behavioral treatment packages, relaxation training and cognitive therapy have been investigated individually as treatments for IBS. The relaxation treatment protocol consisted of progressive muscle relaxation training beginning with 16 muscle groups, reducing to 8 muscle groups, and then four. Training in relaxation-by-recall and cue-controlled relaxation using deep diaphragmatic breathing and pleasant relaxing imagery techniques completed the protocol. Cognitive therapy protocols were

based on various strategies introduced by Meichenbaum (1985), Beck (1976), Burns (1980), and Persons (1989). See Table 1 for specific details of the studies reviewed below.

The only study to investigate relaxation training alone as a treatment for IBS found it to be more effective than symptom monitoring in reducing gastrointestinal symptoms based on daily ratings (Blanchard, Greene, Scharff, & Schwarz-McMorris, 1993). Cognitive therapy was also more effective than symptom monitoring (Green & Blanchard, 1994; Payne & Blanchard, 1995; Vollmer & Blanchard, 1998), and a self-help support group (Payne & Blanchard, 1995), in reducing gastrointestinal symptoms based on daily ratings and psychological distress based on self-report questionnaires. Further, group cognitive therapy was found to be as effective as individualized cognitive therapy in significantly reducing IBS symptoms based on daily ratings (Vollmer & Blanchard, 1998). However, the percentage of patients reducing their IBS symptoms by 50% or more on the composite primary symptom reduction score (CPRS) (64% of group cognitive therapy patients and 55% of individual cognitive patients) was less than that found for individual cognitive therapy (80% and 75%) in previous studies.

In summary, based on Chambless and Hollon's (1998) criteria for empirically supported treatments, the individual components that have been investigated show promise as effective interventions, but require additional evidence from controlled studies before concluding they are efficacious. That is:

1. Relaxation training can be considered a possibly efficacious treatment for IBS. A replication study in a different laboratory is required.
2. Individualized cognitive therapy can be considered a possibly efficacious treatment for IBS. A replication study in a different laboratory is required.
3. Group cognitive therapy can be considered a possibly efficacious treatment for IBS. A

replication study in a different laboratory is required.

### **Controlled Studies of Other Psychological Treatments for IBS**

Two other types of psychological treatment for IBS, short-term dynamic psychotherapy and hypnotherapy, have been investigated. Specific details of the studies reviewed below can be seen in Table 1. Short-term dynamic psychotherapy, in combination with standard medical treatment, appears to be more effective than standard medical treatment alone for IBS (Guthrie, Creed, Dawson, & Tomenson, 1991; Svedlund, Sjodin, Ottosson, & Dotevall, 1983). Short-term dynamic psychotherapy typically focuses on interpersonal relationship dynamics outside of therapy, within the therapy relationship, and within the individual. However, incomplete descriptions of the treatment protocols used in both reviewed studies present a problem for interpreting their results and reaching a firm conclusion regarding the effectiveness of short-term dynamic psychotherapy as a treatment for IBS (Compas, Haaga, Keefe, Leitenberg, & Williams, 1998).

Individualized hypnotherapy, directed at relaxation and modifying intestinal motility, was more effective than a control condition consisting of supportive psychotherapy and a placebo medication in significantly reducing IBS symptoms based on daily ratings and self-reported psychological well-being in a British sample (Whorwell, Prior, & Faragher, 1984). Group hypnotherapy, using the same protocol, was demonstrated to be as effective as individualized hypnotherapy in the only such comparison conducted to date (Harvey, Hinton, Gunary, & Barry, 1989). More recently, the Whorwell et al. (1984) hypnotherapy protocol was successfully replicated using a multiple baseline across subjects design in the United States (Galovski & Blanchard, 1998) (See Table 1).

In summary, based on Chambless and Hollon's (1998) criteria for empirically supported

treatments, the following can be concluded regarding dynamic therapy and hypnotherapy:

1. Compas et al. (1998) concluded that short-term dynamic psychotherapy has yet to be demonstrated as an effective treatment for IBS because of an incomplete specification of the treatment protocols employed in both studies reported to date.
2. Individualized hypnotherapy has been demonstrated to be an efficacious treatment for IBS.
3. Group hypnotherapy has yet to be demonstrated as an efficacious treatment for IBS.

### **The Impact of Clinical Health Psychology Interventions on the Chronic Illness Experience**

In this era of managed health care and responsible health care spending, two trends seem to be emerging for the continued survival of scientist-practitioners in health care settings: (1) Empirically demonstrate the efficacy of treatments that are provided; and (2) Develop methods of treatment delivery that are increasingly cost-effective. Psychological interventions that help patients to self-manage symptoms and cope with chronic illness have been implemented in the service of these two trends.

Health problems, in addition to IBS, that have successfully responded to psychological intervention include chronic pain syndromes, headache, chronic fatigue syndrome, cancer, eating disorders, psychosomatic complaints, post-surgical recovery, and fear of invasive medical tests (Friedman, Sobel, Myers, Caudill, & Benson, 1995; Groth-Marnat & Edkins, 1996; Sobel, 1995). In addition, some clinician-researchers have delivered health-related interventions in a more cost-efficient group format. Effective group treatments have been reported for post-surgical cancer patients (Fawzy et al., 1990), chronic low back pain sufferers (Turner, 1982; Turner & Clancy, 1988; Turner, Clancy, McQuade, & Cardenas, 1990), patients with atopic dermatitis (Ehlers Stangier, & Gieler, 1995), and primary care HMO patients with various psychosomatic



complaints (Hellman, Budd, Borysenko, McClelland, & Benson, 1990), to name a few.

Irritable bowel syndrome treatment researchers have also examined the effectiveness of psychological treatment delivered in a group format. As reviewed in the previous section, only two controlled studies of group therapy for IBS have been reported to date. Harvey et al. (1989) found group hypnotherapy to be as effective as individualized hypnotherapy for IBS. Vollmer and Blanchard (1998) reported that group cognitive therapy was as effective as individualized cognitive therapy, with both being more effective than a symptom monitoring control group, in significantly reducing IBS symptoms.

### **Statement of the Problem**

The purpose of this study was to replicate and extend previous research in five ways. First, since few IBS treatment studies have recruited patients strictly through physician-based referrals, we sought to recruit patients exclusively through consecutive specialist-physician referral in order to determine the *effectiveness* of our treatments with a specialist-referred population of IBS patients. Second, we hoped to improve upon previous uncontrolled studies of multicomponent cognitive-behavioral group therapy for IBS (Blanchard & Schwarz, 1987; van Dulmen et al., 1998; Wise et al., 1982) by conducting a randomized, controlled investigation. Because of concerns raised regarding large placebo effects in IBS treatment studies (Veldhuyzen van Zanten et al., 1999; Klein, 1988), a Symptom Monitoring with Weekly Telephone Contact (SMTC) intervention was utilized as an alternative credible treatment rather than a symptom monitoring alone or wait-list control condition.

Third, we examined the impact of the two treatments on the psychological functioning and quality of life of IBS patients, given the high levels of psychological comorbidity frequently reported in gastroenterologist-referred IBS patients. Fourth, because of methodological concerns

raised regarding previous psychological intervention research for IBS (Toner, 1994), and recommendations made by the *Committee on Design of Treatment Trials for Functional Gastrointestinal Disorders* (Veldhuyzen van Zanten et al., 1999), we designed a treatment protocol and therapist manual and data were collected on treatment process variables such as treatment credibility, treatment integrity, motivational readiness for change, treatment adherence, and social validity (client satisfaction). No previous IBS treatment study has reported analyses conducted on all of these variables.

Fifth, we ventured to improve upon the effectiveness of the group treatment by adding an assertion training component as outlined in Toner, Segal, et al. (1998). Clinical experience suggests that a significant portion of IBS patients fail to adequately assert their health care and well-being needs to others, particularly family members, who may be in a position to offer increased social support and understanding. Research conducted by Ali, Richardson, and Toner (1998) suggested that the presence of certain feminine gender role traits such as a tendency for nurturing others before oneself was significantly linked to IBS illness conviction. Other empirical evidence suggested that interpersonal stress is significantly related to expressions of pain behavior by patients with chronic pain (Schwartz, Slater, & Birchler, 1994), another functional somatic syndrome.

Assertion training consists of helping individuals to communicate their needs more effectively to family, friends, co-workers, and health care providers. It also helps them to manage their time more effectively and understand that they have the first right of refusal to certain requests of others, particularly if such environmental demands are impacting negatively on their health. Only one other study (Lynch & Zamble, 1989) included an assertion training component in an individualized behavioral treatment package. That study yielded the highest

rate of improvement of any of the previous individualized multicomponent cognitive-behavioral treatments. Thus, it seemed a logical extension to empirically evaluate the effectiveness of this treatment package when delivered in a more cost-efficient group format.

It was hypothesized that (a) Group CBT patients would experience a significantly greater reduction in gastrointestinal symptoms than patients in the Symptom Monitoring with Weekly Telephone Contact (SMTC) condition; (b) Significantly more Group CBT patients would report a 50% or greater gastrointestinal symptom reduction (i.e., a clinically significant treatment response) than patients in the SMTC condition; and (c) Group CBT patients would experience a significantly greater improvement in psychological functioning and health-related quality of life than SMTC patients. Consistent with the view that the SMTC condition was a less active comparison treatment, it was also anticipated that SMTC patients would experience mild improvements in GI symptoms and psychological functioning.

## **Method**

### **Participants and Experimental Design**

One hundred and four patients diagnosed with Irritable Bowel Syndrome (IBS) based on the Rome I criteria (Thompson et al., 1992), were consecutively referred over a two year period by six Winnipeg gastroenterologists (3 University-based and 3 Community-based). The Rome I diagnostic criteria consist of:

At least 3 months of continuous or recurrent symptoms of the following:

Abdominal pain or discomfort

Relieved with defecation, or

Associated with a change in frequency of stool, or

**Associated with a change in consistency of stool; and**

**Two or more of the following, at least on one fourth of occasions  
or days:**

**Altered stool frequency (more than 3 bowel movements/  
day or less than 3 bowel movements/week), or**

**Altered stool form (lumpy/hard or loose/watery stool), or**

**Altered stool passage (straining, urgency, or feeling of  
incomplete evacuation), or**

**Bloating or feeling of abdominal distension**

At the initial screening stage, patients were evaluated by their gastroenterologist for evidence of inflammatory bowel disease (IBD), intestinal parasites, other organic pathology, or pregnancy based on interview, physical examination, and laboratory test findings. Any patient found to be positive for any of these conditions was not referred. Additional psychiatric exclusion criteria, assessed after this initial phase of recruitment, will be described later.

If a patient was not excluded at the initial screen, the collaborating gastroenterologist briefly introduced the study by informing patients that cognitive-behavioral group therapy - a structured, educational, self-management program - was a promising treatment approach and that the present study would be conducted to evaluate its effectiveness in reducing IBS symptoms. Patients were also informed that some form of multidisciplinary case management was not uncommon for chronic health problems such as IBS. As an aid to prompt and facilitate this introduction, the gastroenterologists were provided with a laminated desk reference, summarizing study criteria and the information to be discussed with the patient (See Appendix 3). If a patient wished to be considered for the study based on this introductory information, the

gastroenterologist obtained written consent for subsequent contact by the principal investigator.

At the initial meeting, patients were informed fully about the nature of the treatment, what would be required of them, and the benefits and risks of participation. They were told they would have a 50% chance of receiving either treatment during the next treatment wave. In each case, all participants were asked to monitor their IBS symptoms daily for two weeks prior to the study, for nine weeks during the study, and two weeks after the study. The same instructions were given to each of the three waves of participants. They were asked to read and sign a consent form indicating that they understood the conditions of participation, that any questions were adequately answered, and that they had the right to withdraw from the study at any time, for any reason, without prejudice (see Consent Form in Appendix 4).

Since presence of a co-morbid DSM-IV Axis I disorder in an IBS patient has been found to predict poor response to cognitive-behavioral treatments (Blanchard, Scharff, et al., 1992), patients were administered the structured clinical interview for *DSM-IV* (SCID) to determine whether the treatment being offered could best meet their needs. A second purpose of the structured interview was that presence of an Axis I disorder was a primary matching variable for randomizing participants to experimental conditions, along with IBS subtype.

At this stage, patients were evaluated for diagnoses of severe mental disorders including schizophrenia, bipolar disorder, current drug or alcohol abuse, or organic mental disorder (e.g. dementia). No patients were excluded because of ongoing drug treatments for their IBS. However, all patients were requested to maintain their current medication regimen throughout participation in the study unless their physician deemed it medically necessary to change.

Participants were matched into dyads based on presence of a *DSM* Axis I disorder and IBS subtype (i. e., diarrhea predominant, constipation predominant, or mixed type). Secondary

matching variables included duration of IBS symptoms, age, and gender. After being matched into dyads, participants were randomly assigned to one of two experimental conditions: multicomponent group cognitive-behavioral therapy (Group CBT) or a Symptom Monitoring with Weekly Telephone Contact (SMTC) condition in this randomized, controlled clinical trial.

Of the 104 referred patients, 60 either chose not to be interviewed for the study or withdrew after the initial interview. The majority of patients who did not proceed indicated practical issues as barriers to participating, including (a) attending the treatment would take too much of their time, (b) the group treatment was not offered at a convenient time for them, (c) participation would interfere with work or family responsibilities, and (d) it would be too far to travel to the clinic on a weekly basis. Others declined to participate because the IBS symptoms had improved, IBS was not their primary health problem, or they were not certain that the treatment would be helpful. In addition, fourteen patients were excluded. Of these 14, one was excluded and promptly referred for psychiatric treatment of severe major depression with comorbid somatization disorder, one was subsequently diagnosed with inflammatory bowel disease (IBD), two indicated no current symptoms of diarrhea or constipation, and two subsequently became pregnant during the course of the study. Another eight patients completed treatment but were excluded from the data analyses because the patients they were matched with prior to random assignment either withdrew or provided incomplete data needed to conduct the a priori statistical analyses. One final pair was subsequently removed because one member of the pair was a statistically significant outlier on one measure ( $p < 0.001$ ), provided data that were excessively skewed (greater than two standard deviations) across two other measures, and provided incomplete data for another measure. Therefore, data are reported for 14 matched dyads. For the reader interested in viewing the results of an independent samples analyses that

includes the patients who completed treatment but were excluded because their matched dyad members were excluded or withdrew (Group CBT  $n = 17$ ; SMTC  $n = 19$ ), see Appendix 5.

### **Assessment Procedures**

During the assessment interview, a brief history of the patients' IBS symptoms, as well as of current and past psychological functioning, was taken. In addition, all patients were screened for psychiatric diagnoses using the Structured Clinical Interview for the Diagnostic and Statistical Manual of Mental Disorders – Fourth Edition (SCID) (APA, 1994).

Participants were trained to self-monitor their IBS symptoms on a daily GI symptom diary similar to that described by Blanchard and Schwarz (1988). On this diary, patients recorded the severity of six GI symptoms (abdominal pain, diarrhea, constipation, bloating, flatulence, and nausea) on a 5-point scale ranging from 0 (not a problem) to 4 (symptom intense and incapacitating) once per day in the evening. Patients were contacted by telephone prior to the pretreatment baseline period to insure that there were no difficulties with the symptom monitoring task. Thereafter, patients in both treatment conditions were asked to keep the diary for a 2-week pretreatment baseline period, throughout treatment, and for a 2-week post-treatment period. Group CBT patients were also asked to keep symptom diaries for 2-weeks during the three-month follow-up assessment. The daily GI symptom diary, which has become the standard outcome measure for the Albany IBS treatment studies (Blanchard, Schwarz, et al, 1992; Greene & Blanchard, 1994; Payne & Blanchard, 1995; Vollmer & Blanchard, 1998) served as the primary assessment tool of GI symptoms for this study (See Appendix 6). However, patients were also asked to provide global ratings of overall GI symptom and abdominal pain reduction at post-treatment and three-month follow-up as suggested in the *Rome II* Consensus Recommendations (Whitehead, 1999).

**Measures.** During the pre-treatment, post-treatment, and three-month follow-up assessments, participants were asked to complete a battery of self-report instruments that measured the effects of treatment on psychosocial functioning and health-related quality of life. The measures included the *Beck Depression Inventory - II* (BDI-II; Beck, Steer, & Brown, 1996), the *State-Trait Anxiety Inventory – Trait Scale* (STAI-T; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1970), the *Medical Outcomes Short-Form-36 Health Survey* (SF-36; Ware & Sherbourne, 1992), the *Cognitive Scale for Functional Bowel Disorders* (CSFBD; Toner, Stuckless, et al., 1998), and the *Assertiveness Questionnaire* (AQ; Davis, Eshelman, & McKay, 1988) (See Appendix 7). These measures will be briefly described.

The BDI-II was adapted from the original Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1979) to increase its compatibility with *DSM* criteria. In total, there were 23 item changes made in the revised edition of the BDI. Two items were moved to another location in the new inventory; four items (Body Image Change, Work Difficulty, Weight Loss, and Somatic Preoccupation) were dropped, and the wording of 17 response options was altered. In addition, each of the 21 BDI-II items contains a header to focus the examinee on the overall purpose of the statement. Finally, the time frame within the instructions was changed from 1 week to 2 weeks to increase temporal compatibility with the *DSM-IV* (American Psychiatric Association). The BDI-II has been found to have high internal consistency, adequate validity, and good diagnostic discrimination. Diagnostic scoring categories for the BDI-II are: 0-13 minimal depression, 14-19 mild depression, 20-28 moderate depression, and 29-63 severe depression.

The STAI-T is a well-established, 20-item, normed measure of generalized trait anxiety featuring acceptable levels of reliability and validity. On this measure, larger scores reflect



greater levels of generalized trait anxiety.

The SF-36 Health Survey was designed as a generic indicator of health status that has been recommended for use as a clinical outcome measure in conjunction with disease-specific measures. It includes multi-item scales to measure the following eight dimensions: physical functioning, role limitations due to physical health problems, bodily pain, social functioning, general mental health, role limitations due to emotional problems, vitality, and perceptions of general health. The scoring system orients all items so that higher scores represent better health. Scale scores are produced and linearly transformed to a 0-to-100 scale. Finally, two summary indicators, one reflecting overall physical health, and the other, overall mental health, are calculated and linearly transformed to T scores. The authors report acceptable indices of reliability and validity for the SF-36 scales (McHorney, Ware, & Lu, 1994; McHorney, Ware, & Raczek, 1993).

The CSFBD was specifically designed to assess the cognitions of patients with IBS and similar functional bowel disorders. The initial items were derived from the *Automatic Thought Diaries* of 39 patients who received cognitive-behavioral group therapy for functional bowel disorders. A multidisciplinary team of health care professionals then categorized the initial items into themes that included bowel performance anxiety, control, pain, perfectionism, anger/frustration, self-efficacy, social approval, embarrassment/shame, heightened sensitivity to social rules and norms, and self-nurturance. Five additional items were developed by the researchers, based on their clinical experience. This new set of items was then administered to a different sample of 75 functional bowel disorders patients (72 were diagnosed with IBS). Psychometric analyses produced a 25-item scale with high reliability and validity and minimal social desirability contamination. On this measure, larger scores indicate greater levels of

gastrointestinal symptom-related cognitive-emotional distress

The AQ is a 52-item behavioral checklist of interpersonal situations that evoke varying degrees of emotional discomfort. It was designed based on the clinical experience of the authors in helping individuals to identify situations in which, and particular people with whom, they lack assertiveness, and measure improvements as a result of attempts to change their behavior. No psychometric data are available for this measure. On this measure, *larger scores indicate greater levels of general discomfort* during interactions with various people in a variety of interpersonal situations.

### **Experimental Conditions**

A summary of the Group Cognitive-Behavioral and Symptom Monitoring with Weekly Telephone Contact conditions appears in Table 2.

**Table 2.**  
*Summary of Treatment Conditions*

<b>TREATMENTS</b>	
Group CBT	SMTC
<ul style="list-style-type: none"> <li>- 10, 90 min sessions</li> <li>- 3-8 per group</li> <li>- 2 therapists: 1 male / 1 female</li> <li>- Structured</li> <li>- Coping Skills Training</li> </ul>	<ul style="list-style-type: none"> <li>- Daily Symptom Monitoring</li> <li>- Weekly Phone Contact (10-20 min)</li> <li>- Scripted Questions</li> <li>- Supportive</li> <li>- No Coping Skills Training</li> </ul>

**Multicomponent Cognitive-Behavioral Group Therapy (Group CBT)**. Two therapists with advanced training in cognitive-behavioral treatments co-facilitated groups of three to eight IBS patients. Treatment consisted of ten, 90-minute sessions held over nine weeks. There were two sessions held during the first week of treatment and one per week for the final eight weeks. An overview of the Multicomponent Cognitive-Behavioral Group Therapy Protocol and the session-by-session treatment manual can be found in Appendix 8. Treatment components included:

- 1) Provision of educational information regarding (a) the Biopsychosocial Model of IBS (Drossman, 2000; Whitehead & Schuster, 1985); (b) the Gate Control Theory of pain perception and transmission as it applies to functional abdominal pain (Drossman, 1996); and (c) a Cognitive-Behavioral Model of IBS adapted from previous work (Latimer, 1983; Toner, Segal, et al., 1998). The Biopsychosocial and Gate Control Models were introduced during the first group session. During the second session, patients were introduced to information regarding the effects of stress on human physiology, the Cognitive-Behavioral Model of IBS maintenance, and the importance of goal setting and behavioral contracting for change. After the second session, all patients were asked to complete a behavioral self-management contract outlining their goals for change and willingness to complete homework assignments throughout the course of treatment. Behavioral contracting has been demonstrated to be an effective procedure for enhancing commitment to behavioral change for a variety of health and lifestyle interventions (Martin & Pear, 1999) and improving adherence to a medical regimen in particular (Putnam, Finney, Barkley, & Bonner, 1994).
- 2) Relaxation training adapted from the programs described by Bernstein and Borkovec (1973) and Blanchard and Andrasik (1985). Patients were initially taught relaxed diaphragmatic

breathing. Training in progressive muscle relaxation (PMR), pleasant relaxing imagery, and a shortened combination procedure completed this component. Regular home practice was emphasized and an audiotape of the relaxed diaphragmatic breathing and PMR procedure was provided. Relaxation training began during the third group session and continued through the sixth session.

3) Assertion training adapted from the writings and materials provided by Catalano and Hardin (1996), Caudill (1995), and Linehan (1979). Special emphasis was placed on adapting information and materials intended for individuals with chronic pain and other chronic health problems (Catalano & Hardin, 1996; Caudill, 1995). Presenting didactic information and written exercises, group facilitators helped patients to identify situations in which they tended to behave nonassertively and helped them to formulate appropriately assertive responses to better serve their long-term adjustment. Patients were also introduced to concepts of time management, activity pacing, and time urgency and techniques for improving their pacing of activities and reducing sensations of time urgency. The assertion training component began in session six and continued through session nine.

4) Cognitive therapy adapted from the models and techniques of Beck (1976), Blanchard and Andrasik (1985), and Meichenbaum (1985). Clinical experience suggested that some IBS patients readily respond to a cognitive stress management approach, while others respond better to a pain or symptom management approach. Both of these conceptualizations were provided for in order to serve the needs of the majority of patients. Beginning during the third group session, patients were introduced to daily stress monitoring and asked to record stressful situations along with any physical, emotional, cognitive, or behavioral reactions in these situations. The concept of dysfunctional automatic thoughts was presented and the link to resultant behavioral avoidance

was drawn. The long-term negative consequences of such avoidance were emphasized. Patients were asked to identify instances of dysfunctional automatic thinking both in terms of contributing to, and as a result of, stress and bowel symptoms. Cognitive restructuring techniques were then used to help patients change dysfunctional automatic thinking to more adaptive thinking; thus allowing them to take advantage of the wider array of positive contingencies available to them. Homework to facilitate these tasks was assigned and reviewed regularly. The cognitive therapy component continued throughout the remainder of treatment.

5) Relapse prevention strategies were presented and, to consolidate learning, patients were asked to review newly acquired coping skills, identify future high-risk stress producing situations, and prepare coping alternatives they could use to minimize any negative effects on their bowel functioning. The complete set of patient materials used can be found in Appendix 9.

**Symptom Monitoring with Weekly Telephone Contact (SMTC) Condition** Patients assigned to the symptom monitoring with weekly telephone contact condition continued to monitor GI symptoms for 11 weeks (9 weeks to match the treatment duration and 2 more weeks, during the post-treatment observation period). This occurred during the same time frame as for each matched Group CBT participant. Weekly telephone contact was maintained in an effort to improve adherence to daily diary keeping, answer questions, and provide social support. Although no educational information or coping skills training was introduced, patients were encouraged to identify patterns in their particular symptoms as well as symptom triggers. The following scripted questions were developed to aid patients in this self-awareness exercise: “Have you noticed any pattern to your symptoms? Have you identified anything that triggers your symptoms? Do you notice any differences in your daily life between your good and bad symptom days? These weekly telephone contacts typically lasted between 15 and 20 minutes

(approximately the same amount of individual attention per week a participant in the Group CBT would receive). At the conclusion of the post-treatment assessment, these patients were given the opportunity to receive the multicomponent cognitive-behavioral group treatment condition, in keeping with the requirements of the Ethical Review Boards of both the Department of Psychology and Faculty of Medicine.

### **Process Variables**

**Treatment Credibility.** Patients in both conditions were asked to complete ratings of treatment credibility before and after treatment using the 5-item scale developed by Borkovec and Nau (1972) (See Appendix 10). On this scale, larger scores reflect ratings of greater credibility for the treatment.

**Treatment Integrity.** To maximize treatment integrity, Group CBT sessions were audiotaped for the purposes of rating therapist adherence to the protocol. Independent raters rated each session in its entirety for the presence of manualized therapist behaviors using checklists outlining aspects of the treatment protocol (Waltz, Addis, Koerner, & Jacobson, 1993) (See Appendix 11).

**Motivational Readiness for Change.** To assess motivational readiness for change, patients in both conditions completed the *Pain Stages of Change Questionnaire* (PSOCQ) before and after treatment (Kerns, Rosenberg, Jamison, Caudill, & Haythornthwaite, 1997) (See Appendix 12). The Pain Stages of Change Model, adapted from the transtheoretical model of behavioral change (Prochaska & DiClemente, 1984), proposes that patients vary in the degree to which they are “prepared” for adopting a self-management approach to chronic pain. Kerns et al. (1997) developed the Pain Stages of Change Questionnaire (PSOCQ) which yields four valid and reliable scales to measure this construct: *Precontemplation* (individual expresses little or no

interest in changing behavior); *Contemplation* (individual expresses some interest in changing behavior but may remain somewhat ambivalent about taking action); *Action* (individual actively works toward changing health behavior); and *Maintenance* (individual actively works toward maintaining changes in health behavior). Larger scale scores reflect greater endorsement of attitudes associated with that particular stage. In this model, patients may be conceived of as being in one or more of these stages to greater or lesser degrees at any given time for selected health-promoting behaviors.

Two recent investigations involving chronic pain patients revealed that lower baseline PSOCQ *Precontemplation* scale scores predicted patient completion of a cognitive-behavioral treatment program (Biller, Arnstein, Caudill, Federman, & Guberman, 2000) and that treatment completers had significantly lower mean *Precontemplation* scale scores than noncompleters (Kerns & Rosenberg, 2000). Furthermore, *Action* and *Maintenance* scale scores increased over the course of cognitive-behavioral treatment, and changes in these scales were associated with improved outcomes (Kerns & Rosenberg, 2000)

**Treatment Adherence.** Several recommendations for maximizing treatment adherence (Southam & Dunbar, 1986; Meichenbaum & Turk, 1987) were incorporated in the treatment protocol such as emphasizing the importance of regular attendance, using telephone reminders, encouraging patient understanding of the treatment model, patient goal-setting, behavior modification procedures such as behavioral contracting, self-monitoring, and self-management skills. In addition, homework exercises were collected and rated for the percentage of each assignment completed using an itemized checklist (Primakoff, Epstein, & Covi, 1986) (See Appendix 13).

**Social Validity.** To assess the social validity of the Group CBT intervention (Kazdin,

1977), the *Client Satisfaction Questionnaire - 8* (CSQ-8; Attkisson & Greenfield, 1995) (See Appendix 14) and *Group Attitude Scale* (GAS; Evans & Jarvis, 1986) (See Appendix 15) were administered following treatment. Both measures have acceptable psychometric properties and have been used with diverse populations in a variety of health care settings. In addition, Group CBT patients completed a global evaluation questionnaire at post-treatment and three-month follow-up developed to assess patients' attitudes regarding their effectiveness at using each component of treatment, how often they used each component, and how important each component was for coping with IBS (See Appendix 16).

**Medication Use.** Patients in both conditions were asked to report on their use of prescription and nonprescription medications at the baseline and post-treatment assessment periods (See Appendix 17). Patients in the Group CBT condition were also asked to do so at the three-month follow-up assessment.

## **Results**

### **Pretreatment Comparisons**

Basic demographic information for the two treatment conditions is summarized in Table 3. The sample was 96.4% female, with an age range of 18 to 68, and an average age of 39.5. Fifty-four point six percent of participants were married or living with a partner, 35.7% were single, and 10.7% were separated or divorced. Ninety-three percent of the sample had at least a high school education and 68% had education beyond the high school level. Seventy-five percent were employed, with 53.5% occupying professional positions. Participants began experiencing gastrointestinal symptoms an average of 9 years ago, with a range of 9 months to 45 years. Sixty-seven point nine percent of the sample was diagnosed with at least one *DSM-IV* Axis I diagnosis, with 39.3% receiving a primary diagnosis of Generalized Anxiety Disorder, 10.7% Major



Depressive Disorder, 10.7% Social Anxiety Disorder, 3.6% Post Traumatic Stress Disorder, and 3.6% Somatoform Disorder. Participants also reported relatively high levels of co-morbid medical diagnoses (78.6%), prescription medication use (57.1%), and over-the-counter medication use (82.1%). Co-morbid medical diagnoses most often consisted of migraine headache (14.3%), fibromyalgia (14.3%), COPD (10.7%), chronic fatigue (7.1%), chronic pain (7.1%), and chronic sinusitis (7.1%). A sampling of other diagnoses includes diabetes (3.6%), multiple sclerosis (3.6%), and atopic dermatitis (3.6%). No significant differences on demographic variables were found between the two conditions.

**Table 3.**

*Means (Standard Deviations) and Percentages of Continuous and Nominal Variable Demographics*

Variable	Treatment Condition		<i>t</i> -test
	Group CBT	SMTC	
Age	36.14 (15.80)	42.93 (14.15)	$p = 0.24$
Symptom Duration (Months)	98.07 (89.17)	118.00 (142.76)	$p = 0.66$
Number of Flareups in Previous 3 Months	12.86 (10.94)	9.07 (4.18)	$p = 0.24$

*Frequencies of Nominal Demographics*

Variable	Treatment Condition		Cramer's <i>V</i>
	Group CBT	SMTC	
IBS Subtype			$p = 0.70$
Diarrhea	43%	36%	
Constipation	14%	7%	
Mixed	43%	57%	

SCID Diagnosis			$p = 0.23$
Subthreshold	43%	21%	
Axis I Diagnosis	57%	79%	
Axis I Subtype			$p = 0.59$
None	43%	21%	
GAD	43%	36%	
Social Anxiety	7%	14%	
PTSD	0%	7%	
Depression	7%	14%	
Somatoform Disorder	0%	7%	
Gender			$p = 0.31$
Female	93%	100%	
Male	7%	0%	
Marital Status			$p = 0.21$
Never Married	43%	29%	
Married	36%	43%	
Separated/Divorced	0%	21%	
Common Law	21%	7%	
Education			$p = 0.75$
Some High School	7%	7%	
High School	21%	29%	
Community College	21%	29%	
Bachelor's Degree	43%	29%	
Some Graduate School	0%	7%	
MA/PhD	7%	0%	
Employment Status			$p = 0.38$
Full Time	57%	57%	
Part Time	14%	21%	
Unemployed	21%	7%	
Homemaker	0%	14%	
Full Time Student	7%	0%	
Occupation			$p = 0.92$
None	29%	21%	
Professional	29%	35%	
Managerial/Business	21%	21%	
Secretarial/Clerical	7%	14%	
Manual Labor	14%	7%	
Other Medical Diagnoses			$p = 0.36$
Yes	86%	71%	
No	14%	29%	

Prescribed Medications			$p = 0.13$
Yes	71%	43%	
No	29%	57%	
Over the Counter Medications			$p = 0.14$
Yes	93%	71%	
No	7%	29%	

Table 4 presents the pretreatment gastrointestinal symptom means for the two experimental conditions. In general, mean daily gastrointestinal symptoms ratings were in the mild range during the baseline period. However, large variability in daily symptom ratings occurred within both treatment conditions. There were no significant pretreatment differences between conditions for gastrointestinal symptoms.

**Table 4.**  
*Means (Standard Deviations) and t-tests for Individual Gastrointestinal Symptoms at Baseline.*

Gastrointestinal Symptom	GCBT	SMTc	$t(df)$	$p$ -value
<i>Pain</i>	0.97 (0.65)	1.21 (0.73)	$t(1, 26) = -0.94$	0.36
<i>Diarrhea</i>	0.54 (0.46)	0.75 (0.57)	$t(1, 26) = -1.05$	0.31
<i>Constipation</i>	0.69 (0.51)	0.64 (0.61)	$t(1, 26) = 0.22$	0.83
<i>Bloating</i>	1.27 (0.73)	1.43 (0.73)	$t(1, 26) = -0.57$	0.57
<i>Gas</i>	1.22 (0.70)	1.34 (0.67)	$t(1, 26) = -0.54$	0.65
<i>Nausea</i>	0.36 (0.44)	0.37 (0.55)	$t(1, 26) = -0.03$	0.98

Table 5 presents the pretreatment means for the measures of psychological functioning, health-related quality of life, and treatment process measures. In general, the sample exhibited what would appear to be a moderately severe level of gastrointestinal symptom-related distress,

mild depression, above average generalized trait anxiety, and problematic discomfort in situations requiring assertiveness. Participants' health-related quality of life scores fell in the average range for overall physical health and in the below average range for overall mental health. There were no significant pretreatment differences between conditions for these measures.

**Table 5.**  
*Means (Standard Deviations) and t-tests for Psychological/Quality of Life Measures at Baseline.*

Measure	GCBT	SMTC	<i>t</i> (df)	<i>p</i> -value
<i>CSFBD</i>	128.43 (22.23)	118.43 (23.63)	<i>t</i> (1, 26) = 1.15	0.81
<i>BDI</i>	15.21 (10.24)	16.43 (10.43)	<i>t</i> (1, 26) = -0.31	0.76
<i>STAI-T</i>	43.71 (9.62)	44.43 (11.75)	<i>t</i> (1, 26) = -0.18	0.86
<i>AQ</i>	108.14 (27.23)	95.86 (25.80)	<i>t</i> (1, 26) = 1.23	0.23
<i>SF36-PCS</i>	44.93 (7.88)	41.39 (12.82)	<i>t</i> (1, 26) = 0.881	0.39
<i>SF36-MCS</i>	38.39 (9.03)	37.40 (11.89)	<i>t</i> (1, 26) = 0.25	0.81
<i>PSOC-P</i>	2.31 (0.62)	2.74 (0.76)	<i>t</i> (1, 26) = -1.66	0.11
<i>PSOC-C</i>	4.28 (0.37)	4.14 (0.53)	<i>t</i> (1, 26) = 0.79	0.44
<i>PSOC-A</i>	3.12 (0.74)	3.24 (0.84)	<i>t</i> (1, 26) = -0.40	0.69
<i>PSOC-M</i>	3.03 (0.67)	3.10 (0.75)	<i>t</i> (1, 26) = -0.27	0.79

Note: *CSFBD* = Cognitive Scale for Functional Bowel Disorders; *BDI* = Beck Depression Inventory; *STAI-T* = State Trait Anxiety Inventory – Trait Scale; *AQ* = Assertiveness Questionnaire; *SF36-PCS* = Medical Outcomes Short Form 36 Health Survey - Physical Health Component Scale; *SF36-MCS* = Medical Outcomes Short Form 36 Health Survey – Mental Health Component Scale; *PSOC-P* = Pain Stages of Change Questionnaire – Precontemplation Scale; *PSOC-C* = Pain Stages of Change Questionnaire – Contemplation Scale; *PSOC-A* = Pain Stages of Change Questionnaire – Action Scale; *PSOC-M* = Pain Stages of Change Questionnaire – Maintenance Scale. For the *CSFBD*, *BDI*, *STAI-T*, and *AQ*, larger scores indicate poorer adjustment.

**Treatment Outcome Analyses**

The treatment outcome data analyses consisted of between treatment comparisons of (a) daily gastrointestinal (GI) symptom ratings, (b) the proportion of patients who were clinically improved based on daily ratings, (c) post-treatment global ratings of GI symptom and pain reduction, and (d) psychological functioning and health-related quality of life.

**Daily GI symptom ratings.** First, a composite primary symptom reduction (CPSR) score was calculated for each participant following the recommendations of Blanchard and Schwarz (1988). For each of the primary GI symptoms (e. g., abdominal pain, diarrhea, constipation) that define IBS, a symptom reduction score was calculated for each participant as follows:

$$\text{Diarrhea symptom reduction score} = \frac{\text{Average pretreatment diarrhea} - \text{average posttreatment diarrhea}}{\text{Average pretreatment diarrhea}} \times 100$$

The symptom reduction scores for the two or three primary symptoms were averaged for each participant:

$$\text{CPSR score} = \frac{\text{Pain score} + \text{diarrhea score} + \text{constipation score}}{2 \text{ or } 3 \text{ (depending on number of primary symptoms)}}$$

To provide a statistically conservative test of the first hypothesis, a dependent samples t-test was conducted on CPSR scores. Differences between CPSR scores for each pair of matched participants were computed and analyzed. A summary of this analysis can be viewed in Table 6. There was no statistically significant difference between treatment conditions for CPSR scores,  $t(13) = -1.305, p = 0.214$ . Although nine of the 14 Group CBT patients had GI symptoms that were worse at post-treatment, only four demonstrated what could be considered clinically significant increases moving from the mild to moderate symptom category. Another four of these patients began and finished in the mild symptom category, while one began and finished in the moderate symptom category. Although GI symptom intensity levels fluctuated somewhat, for most patients, symptoms remained in the mild range (in terms of the 0 – 4 intensity scale) throughout the course of the study. The relative merits of using CPSR scores to evaluate clinically significant changes in GI symptoms are addressed in the discussion section.

**Table 6.**

*Composite Primary Symptom Reduction (CPSR) Scores and Dependent Samples t-test Result for Matched Dyads*

Dyads	GCBT	SMTC	DIFF		
1	44.98	34.06	10.92		
2	71.04	24.92	46.12		
3	70.83	84.84	-14.01		
4	-17.74	-13.57	-4.17		
5	-16.11	23.61	-39.72		
6	-43.33	-2.66	-40.67		
7	-10.64	-22.96	12.32		
8	-11.08	3.31	-14.39		
9	25.53	-13.64	39.37		
10	-36.01	21.44	-57.45		
11	58.35	10.03	48.32		
12	-74.60	-43.96	-30.64		
13	-44.96	21.30	-66.26		
14	-100.00	23.69	-123.69		
<i>M(SD) =</i>	-6.01 (53.54)	10.74 (30.82)	-16.75 (48.03)	<i>t(13) = -1.31</i>	<i>p = 0.21</i>

A summary of analyses conducted on the six individual GI symptoms is displayed in Table 7. There were no significant differences between the two conditions on change scores for individual GI symptoms. Mild symptom levels at baseline and high variability in daily symptom change scores likely rendered treatment effects based on group averages less meaningful.

**Table 7.**  
*Means (Standard Deviations) of Paired Difference Scores and Dependent Samples t-tests for Individual Gastrointestinal Symptom Percentage Reductions*

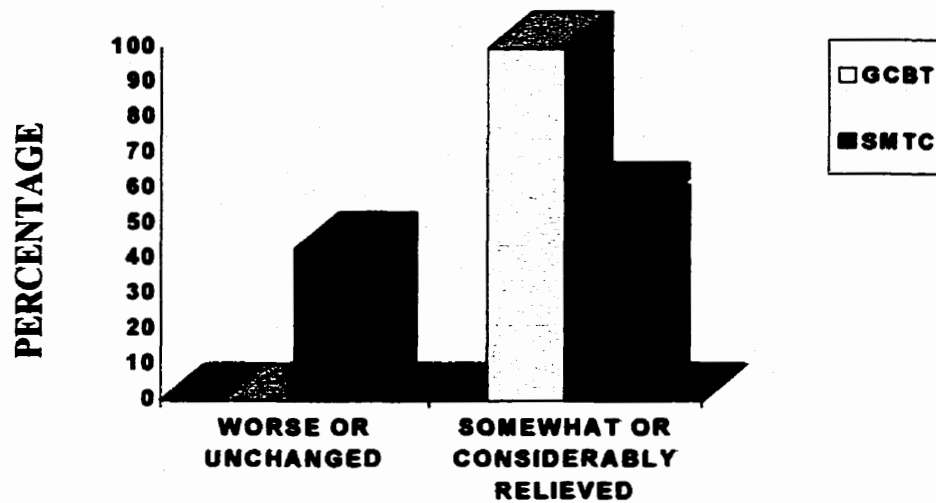
Gastrointestinal Symptom	GCBT	SMTC	Mean diff	t(df)	p-value
<i>Pain</i>	-5.64 (72.66)	14.82 (57.28)	-20.46 (88.11)	t(13) = -0.87	0.40
<i>Diarrhea</i>	-19.48 (65.19)	-5.61 (52.85)	-13.87 (96.33)	t(11) = -0.50	0.63
<i>Constipation</i>	0.87 (62.72)	36.21 (56.58)	-35.34 (70.04)	t(9) = -1.60	0.15
<i>Bloating</i>	-8.98 (51.30)	8.25 (54.27)	-17.23 (72.94)	t(12) = -0.85	0.41
<i>Gas</i>	12.30 (47.33)	3.46 (46.75)	8.84 (62.02)	t(13) = 0.53	0.60
<i>Nausea</i>	-20.56 (57.40)	28.62 (37.38)	-49.17 (66.71)	t(4) = -1.65	0.18

**Clinically significant change.** In order to assess clinically significant GI symptom reduction for each patient based on daily ratings, an *a priori* criterion of 50% symptom reduction was established. Subsequently, the two experimental groups were statistically compared on the proportion of individuals reaching this clinically significant standard of change. Three of 14 Group CBT patients (21.4%) vs. one of 14 SMTC patients (7.1%) met criteria for clinically significant GI symptom reduction. This difference was not statistically significant,  $\chi^2(1) = 1.167$ ,  $p = 0.280$ . For daily pain ratings, five of 14 Group CBT patients (35.7%) vs. four of 14 SMTC patients (28.6%) met criteria for clinically significant pain reduction. This difference was also not statistically significant,  $\chi^2(1) = 0.164$ ,  $p = 0.686$ .

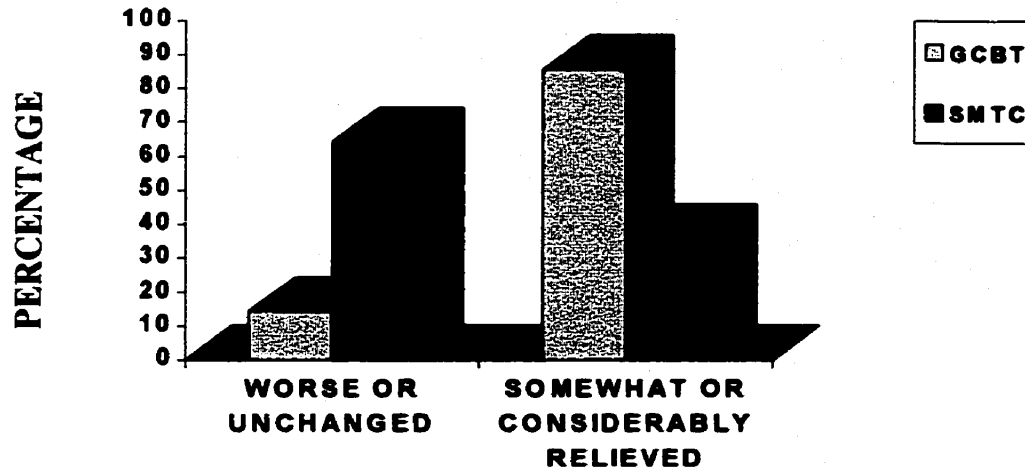
**Post-treatment global ratings of GI symptom reduction.** At post-treatment, patients were asked to rate their overall GI symptoms and abdominal pain over the previous 4 weeks as compared to the same symptoms prior to beginning their respective treatments. The proportion



of patients in each condition reporting either a worsening or no change and some or considerable relief of symptoms can be observed in Figure 4. Patients in the Group CBT condition reported experiencing more overall GI symptom relief than patients in the SMTC condition,  $X^2(1) = 7.636, p = 0.006$ . Similarly, for pain (as displayed in Figure 5), Group CBT patients reported experiencing more relief than patients in the SMTC condition,  $X^2(1) = 7.337, p = 0.007$ .



**Figure 4. POSTTREATMENT GLOBAL SYMPTOM REDUCTION RATINGS**



**Figure 5. POSTTREATMENT GLOBAL PAIN REDUCTION RATINGS**

**Psychological Functioning and Health-Related Quality of Life.** A multivariate analysis of variance (MANOVA) was conducted on pre- to post-treatment change scores for the CSFBD, BDI, STAI-T, AQ, SF-36 Physical Health Component Scale (SF36-PCS), and SF-36 Mental Health Component Scale (SF36-MCS). Patients in the Group CBT condition experienced significantly more improvement than SMTC patients on these measures of psychological functioning and health-related quality of life, *Hotelling's*  $T^2 = 1.296$ ,  $F(6, 21) = 4.536$ ,  $p = 0.004$ , *effect size* = 0.56. Follow-up univariate analyses (ANOVA's) revealed that improvements in bowel-related cognitive-emotional distress (33%), assertiveness (16%), and physical health functioning (16%) contributed significantly to the explained variance of the overall model (see Table 8).

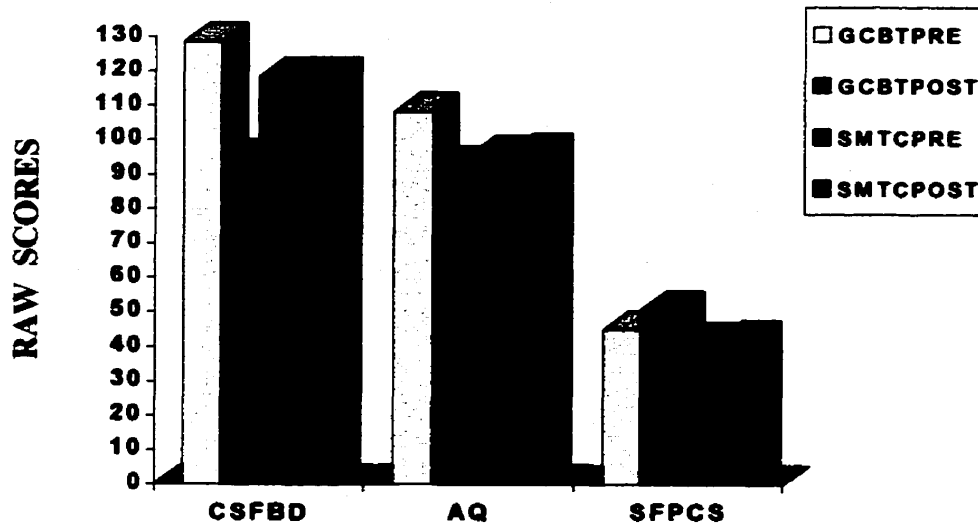
**Table 8.**

*Mean Change Scores and Univariate ANOVA's for Psychological/Health-Related Quality of Life Measures.*

Measure	GCBT	SMTC	SE	F(df)	p-value	R <sup>2</sup>	Power
CSFBD	33.86	-0.07	6.76	F(1, 26) = 12.59	<b>0.002</b>	0.33	0.93
BDI	6.57	3.07	1.64	F(1, 26) = 2.27	0.144	0.08	0.31
STAI-T	5.79	1.57	1.58	F(1, 26) = 3.57	0.070	0.12	0.44
AQ	15.43	-0.43	5.04	F(1, 26) = 4.95	<b>0.035</b>	0.16	0.57
SF36-PCS	-5.67	-0.77	1.57	F(1, 26) = 4.87	<b>0.036</b>	0.16	0.57
SF36-MCS	-4.43	0.85	2.60	F(1, 26) = 2.06	0.163	0.07	0.28

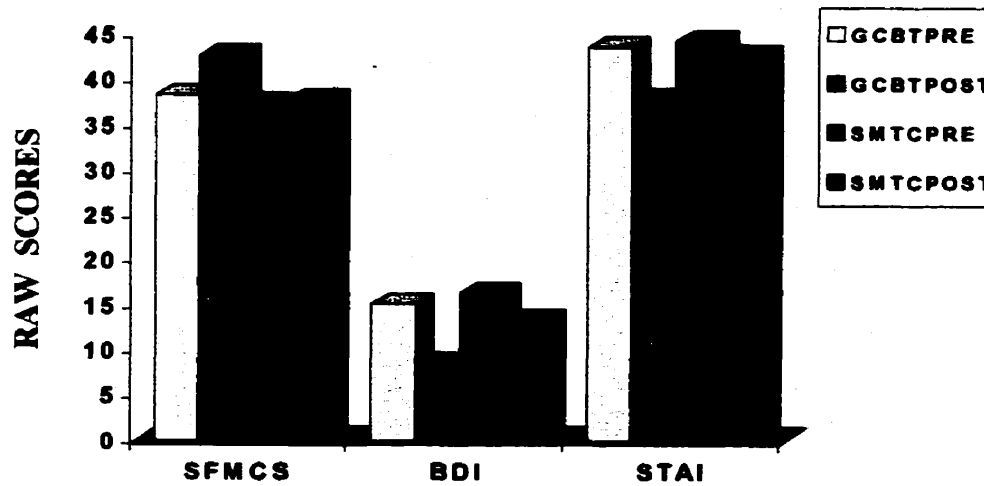
Note: CSFBD = Cognitive Scale for Functional Bowel Disorders; BDI = Beck Depression Inventory; STAI-T = State Trait Anxiety Inventory – Trait Scale; AQ = Assertiveness Questionnaire; SF36-PCS = Medical Outcomes Short Form 36 Health Survey - Physical Health Component Scale; SF36-MCS = Medical Outcomes Short Form 36 Health Survey – Mental Health Component Scale

Group CBT patients, but not SMTC patients, also improved clinically from the categories of mild to minimal depression on the BDI-II, above average to average generalized trait anxiety on the STAI-T, and below average to average overall mental health functioning on the SF36-MCS. Figures 6 and 7 display the raw score means for these measures at baseline and post-treatment for the two conditions in order to present the interested reader with additional context to interpret the change scores depicted in Table 8.



**Figure 6. PSYCHOSOCIAL/HRQOL RAW SCORE MEANS**  
 Note: lower scores on the CSFBD and AQ indicate better adjustment.

Note: GCBT = Group CBT; SMTC = Symptom Monitoring with Telephone Contact; CSFBD = Cognitive Scale for Functional Bowel Disorders; AQ = Assertiveness Questionnaire; SFPCS = SF36 Physical Health Component Scale

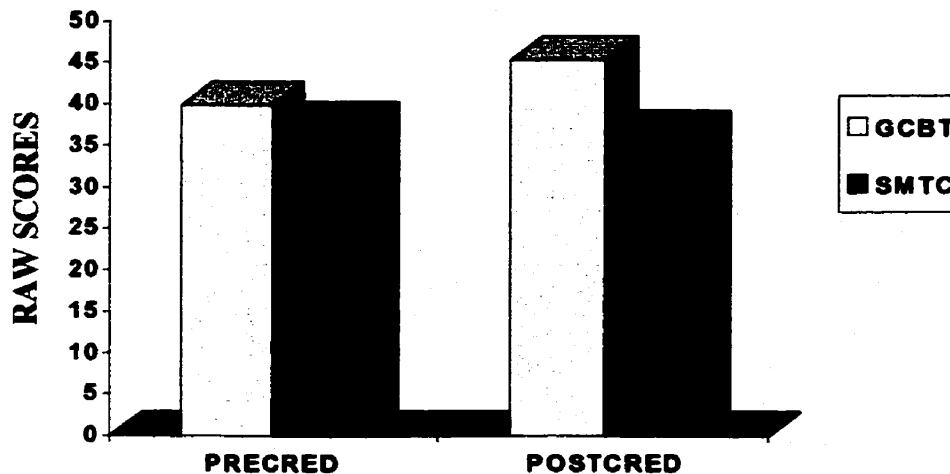


**Figure 7. PSYCHOSOCIAL/HRQOL RAW SCORE MEANS**  
 Note: Lower scores on the BDI and STAI indicate better adjustment.

Note: GCBT = Group CBT; SMTC = Symptom Monitoring with Telephone Contact; SFMCS = SF36 Mental Health Scale; BDI = Beck Depression Inventory-II; STAI = State Trait Anxiety Inventory – Trait Scale

### Process Variables

**Treatment credibility.** Treatment credibility ratings at baseline did not differ significantly between the Group CBT ( $M = 39.93$ ) and SMTC ( $M = 37.43$ ) conditions,  $t(1,26) = 0.82$ ,  $p = 0.42$ . Both groups endorsed relatively high levels of credibility for their respective treatments (Mean item scores: GCBT = 7.9/10; SMTC = 7.5/10). At post-treatment, the Group CBT patients ( $M = 45.29$ ) gave significantly higher ratings of credibility than did the SMTC patients ( $M = 36.43$ ),  $t(1,26) = 4.01$ ,  $p = 0.001$ . Note however that this significant difference in credibility ratings at post-treatment was the result of Group CBT patients increasing their ratings as a result of treatment,  $t(13) = -3.73$ ,  $p = 0.003$ , whereas SMTC patients remained stable in their perceptions of credibility throughout,  $t(13) = 0.521$ ,  $p = 0.611$ , (see Figure 8).



**Figure 8. PRE- AND POST-TREATMENT CREDIBILITY MEANS**

**Treatment integrity.** Independent ratings of therapist adherence to the treatment protocol were made by two trained raters who listened to audiotape recordings of each Group CBT session. Cohen's *Kappa* coefficient, a measure of inter-rater reliability over and above what

would be predicted due to chance, was calculated for each of three waves of the study and averaged to give an overall index. Additionally, the percentage of the treatment protocol adhered to based on inter-rater agreement was also calculated. As can be viewed in Table 9, *Kappa* for the three waves ranged from 0.80 to 0.93, with an overall coefficient of 0.88. This is well within traditional standards for acceptable rates of inter-observer reliability. The percentage of the treatment protocol adhered to ranges from 86% to 96%, with an overall study percentage of 91%. Thus, it appears that the treatment protocol was adhered to within acceptable limits as outlined in the therapist treatment manual.

**Table 9.**

*Independent Ratings of Therapist Adherence to Protocol  
(Audiotape Analysis: 2 Trained Raters)*

***Cohen's Kappa Coefficient***

*Wave 1: Kappa = .93      Wave 2: Kappa = .80*

*Wave 3: Kappa = .90      Overall Kappa = .88*

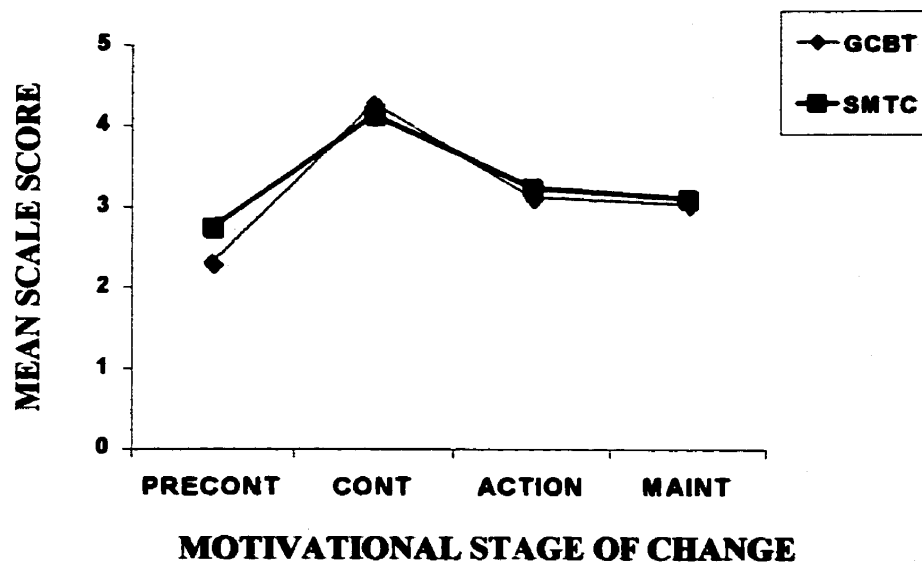
***Percentage of Treatment Protocol Adhered To***

*Wave 1: 96%                      Wave 2: 86%*

*Wave 3: 90%                      Overall: 91%*

**Motivational readiness for adopting a self-management approach.** Figure 9 depicts the results of the baseline analysis of motivational readiness for change as measured by the PSOCQ. Patients in the two treatment conditions did not significantly differ in their ratings of motivational readiness for change,  $F(1,26) = 0.825, p = 0.372$ . There was a significant stage of

change effect as patients in both conditions rated items on the *Contemplation* scale ( $M = 4.21$ ) significantly higher than items on the *Precontemplation* ( $M = 2.53$ ), *Action* ( $M = 3.18$ ), or *Maintenance* ( $M = 3.07$ ) scales,  $F(3,24) = 71.21$ ,  $p < 0.0001$ , which did not differ significantly from each other. Since patients in both treatment conditions more strongly endorsed *Contemplation* scale items, this would suggest that they were more likely at this stage of readiness prior to the commencement of their respective treatments.

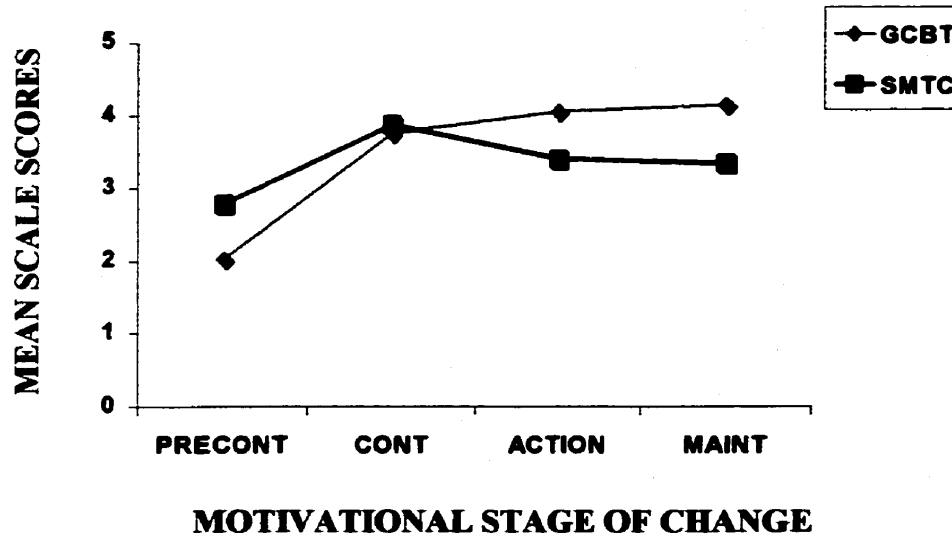


**Figure 9. PAIN STAGES OF CHANGE: PREINTERVENTION SCORES**

Note: Precont = Precontemplation Scale Score; Cont = Contemplation Scale Score; Action = Action Scale Score; Maint = Maintenance Scale Score

Figure 10 depicts the results of the post-treatment analysis of motivational readiness for change. There was a significant stage of change by treatment group interaction effect,  $F(3,24) = 5.29$ ,  $p = 0.006$ . Group CBT patients had significantly lower *Precontemplation* ( $M = 2.03$ ), and significantly higher *Action* ( $M = 4.05$ ) and *Maintenance* ( $M = 4.14$ ) scale scores than patients in the SMTC condition ( $M$ 's = 2.78, 3.41, and 3.34, respectively),  $p$ 's = 0.001, 0.022, and 0.004.

This suggests that Group CBT patients were less likely to be *Precontemplators* at post-treatment and more likely than SMTC patients to be actively working at IBS self-management and attempting to maintain any improvements they had already achieved.



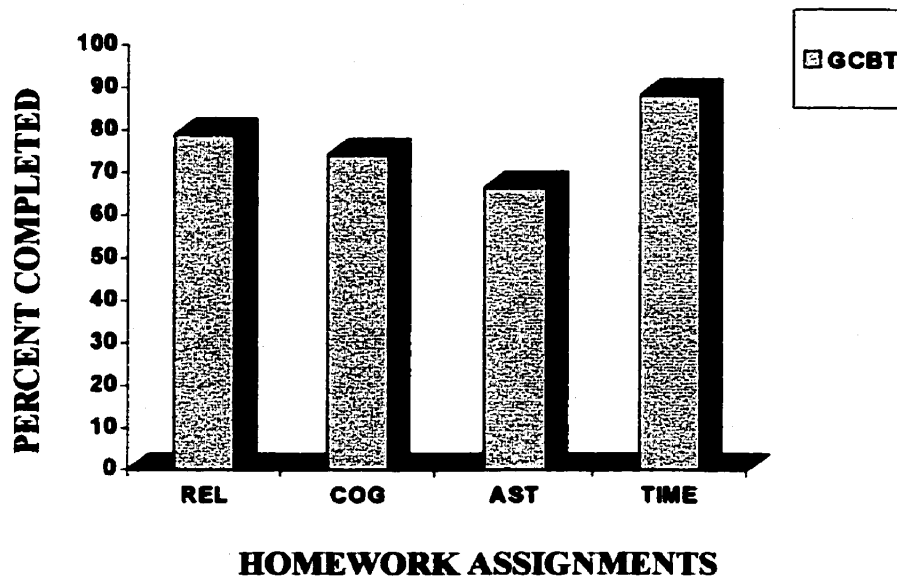
**Figure 10. PAIN STAGES OF CHANGE: POSTINTERVENTION SCORES**

Note: Precont = Precontemplation Scale Score; Cont = Contemplation Scale Score; Action = Action Scale Score; Maint = Maintenance Scale Score

**Treatment adherence.** Group CBT homework exercises were collected on a weekly basis and rated for degree of completion. Homework exercises were categorized according to the components of therapy (i. e., behavioral contracting/goal setting, relaxation training, cognitive retraining, assertion training, activity/time management, and relapse prevention). One point was awarded for each completed element of an assigned weekly exercise. For example, if patients were asked to track one stress-provoking situation each day, then one point was awarded for each situation tracked. This score was then divided by the total number of elements possible for that week and converted to a percentage. Weekly totals for exercises that were repeated across



weeks were added, averaged, and converted to percentages. Behavioral contracting/goal setting and relapse prevention exercises were both assigned as one time exercises in sessions two and nine, respectively. Relaxation training and assertion training were assigned over separate three-week periods. Cognitive retraining took place over six sessions. Activity/time management exercises were assigned for two sessions. The mean percentage of total homework completed was 78.25 (Range = 59.81% – 100%). The mean percentage of homework completed for the major components of therapy can be observed in Figure 11.



**Figure 11. HOMEWORK COMPLIANCE**

Note: REL = Relaxation Training; COG = Cognitive Therapy; AST = Assertiveness Training; TIME = Time Urgency Reduction Training

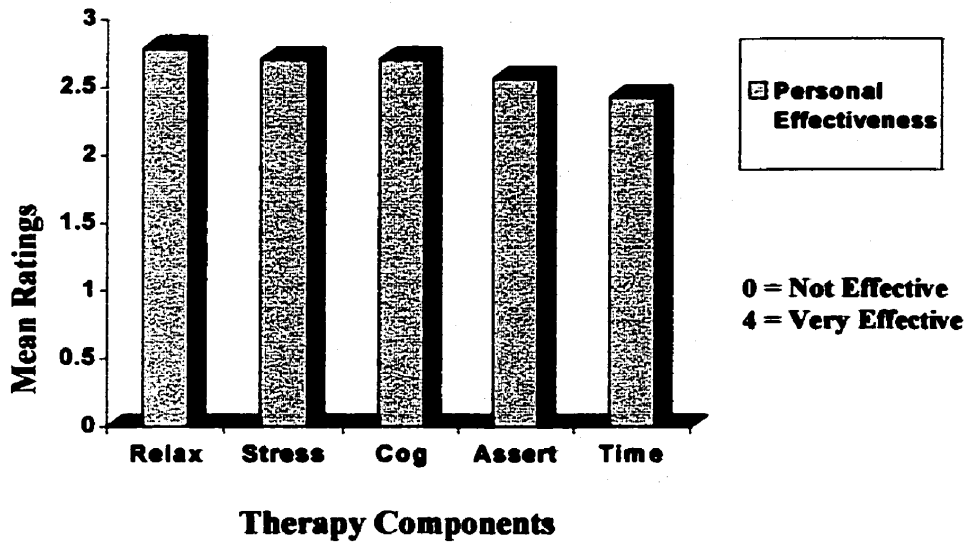
In a post-hoc analysis, a significant positive relationship emerged between the percentage of total homework completed and GI symptom reduction (CPSR),  $r(13) = 0.617, p = 0.019$ . A stepwise regression analysis including the individual components of the group therapy (i.e., relaxation training, cognitive retraining, assertion training and time urgency reduction training)

further revealed that the percentage of cognitive retraining homework completed was the only individual component predictive of GI symptom reduction (CPSR),  $B = 1.376$ ,  $SE = 0.592$ ,  $R^2 = 0.310$ ,  $p = 0.039$ .

**Social validity.** Group CBT patient ratings of overall satisfaction with treatment on the CSQ-8 ( $M = 28.93$ ,  $SD = 3.45$ ,  $Range = 21 - 32$ ) fell in the average range when compared with a large standardization sample of therapy consumers ( $M = 27.09$ ,  $SD = 4.01$ ) (Attkisson & Greenfield, 1994). On the Group Attitude Scale (GAS), Group CBT patients ( $M = 146.07$ ) reported a high degree of group satisfaction/cohesion (Mean item score = 7.3/9.0).

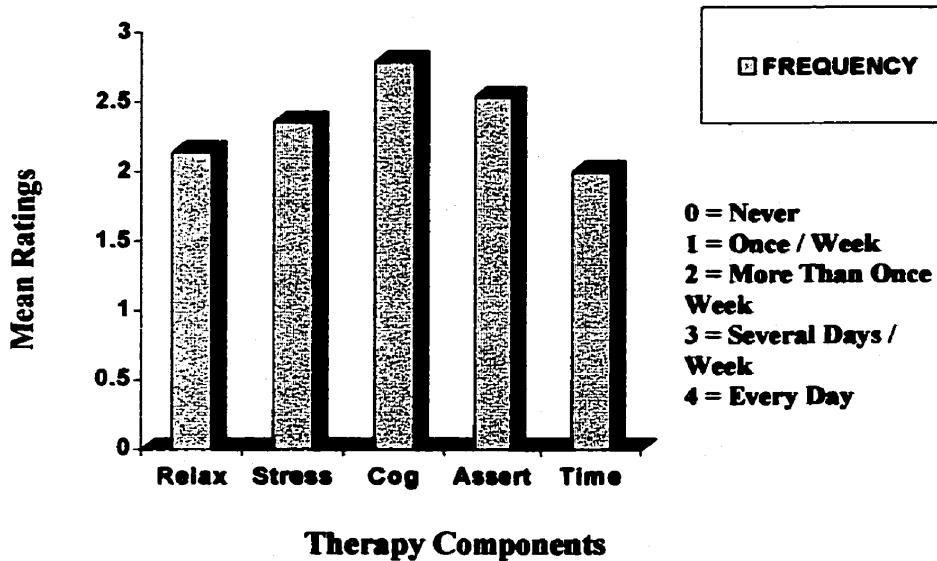
Group CBT patients' ratings of personal effectiveness with, frequency of use, and importance of individual therapy components are presented in Figures 12 - 14. At post-treatment, patients' mean ratings of personal effectiveness fell between being somewhat effective and effective for all components of therapy with highest to lowest orderings of relaxation, cognitive retraining, stress monitoring, assertion, and time management.

Patients' mean frequency-of-use ratings fell between two and five days per week for all components with most frequent to least frequent orderings of cognitive retraining, assertion, stress monitoring, relaxation, and time management. Patients' mean ratings of importance fell between somewhat important and very important for all components with highest to lowest orderings of cognitive retraining, stress monitoring, assertion, relaxation, and time management.



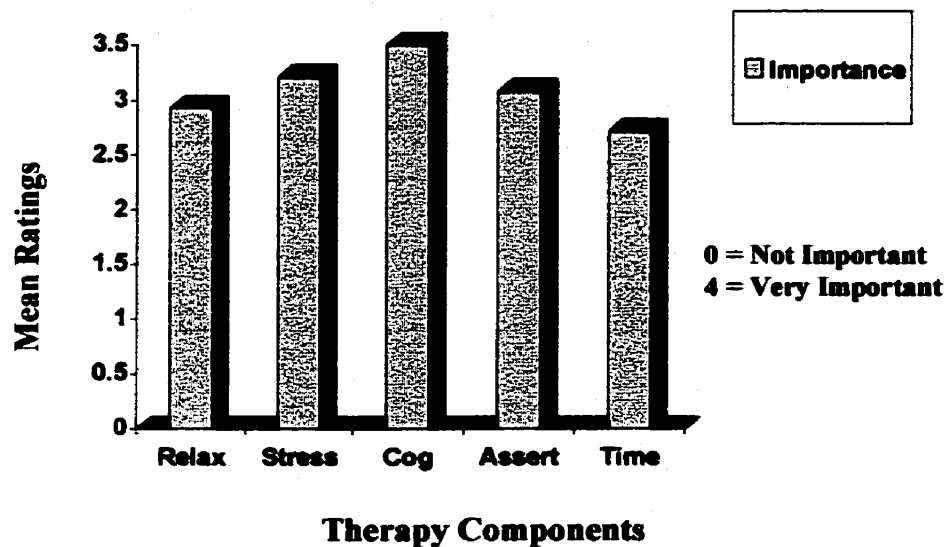
**Figure 12. How Effective are You at Using these Coping Strategies?**

Note: Relax = Relaxation Training; Stress = Stress Monitoring; Cog = Cognitive Therapy; Assert = Assertiveness Training; Time = Time Urgency Reduction Training



**Figure 13. How Often do You use these Coping Strategies?**

Note: Relax = Relaxation Training; Stress = Stress Monitoring; Cog = Cognitive Therapy; Assert = Assertiveness Training; Time = Time Urgency Reduction Training



**Figure 14.** *How Important are these Strategies for Coping with IBS?*

Note: Relax = Relaxation Training; Stress = Stress Monitoring; Cog = Cognitive Therapy; Assert = Assertiveness Training; Time = Time Urgency Reduction Training

At three-month follow up, patients' ratings of personal effectiveness were similar except for a reversal of ratings for relaxation and assertion. Ratings of frequency reduced to between once and several days per week for all components with time management becoming more frequent than relaxation. Ratings of importance increased overall with relative importance of components being rated precisely as they were at post-treatment.

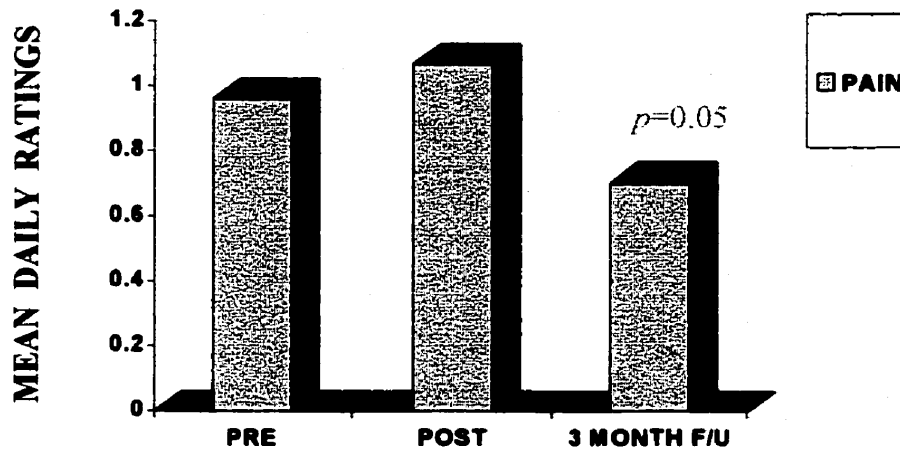
**Medication use.** At the post-treatment assessment of changes in prescription medication use, for the Group CBT condition ( $n = 14$ ), two patients (14.3%) reported an increase, and two patients (14.3%) a decrease, in usage during the course of treatment. No patient in the SMTC condition ( $n = 13$ ; 1 did not report) reported any changes from baseline in level of prescription medication usage. This difference between conditions was not statistically significant,  $X^2(1) = 4.360, p = 0.113$ . In assessing for changes in use of nonprescription medication, for the Group

CBT condition ( $n = 14$ ), one patient (7.1%) reported an increase, and two patients (14.3%) a decrease, in usage during treatment. Two patients (15.4%) in the SMTC condition ( $n = 13$ ; 1 did not report) reported a decrease in nonprescription medication usage. This difference between conditions was not statistically significant,  $\chi^2(1) = 0.964$ ,  $p = 0.617$ .

At the three-month follow-up assessment, 12 of the original 14 Group CBT patients provided data on prescription medication use, while only 11 did so for nonprescription medication use. One Group CBT patient (7.1%) reported a further increase in prescription medication use from the level reported at post-treatment assessment. None of the 11 patients reporting on nonprescription medication use indicated any changes from the level reported at post-treatment.

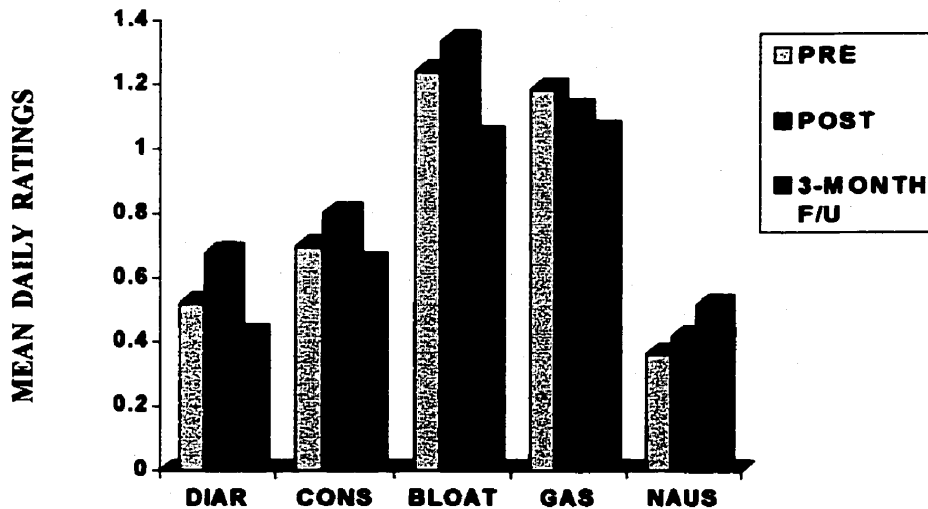
### **Three Month Follow-up Study**

Follow-up analyses consisted of multiple one-way repeated measures designs of pre-, post-, and 3-month follow-up scores for gastrointestinal symptoms, psychological measures, and health-related quality of life for patients treated with multicomponent cognitive-behavioral group therapy. Of the original 14 patients, 13 responded and provided data. The pre-, post-, and three-month follow-up GI symptom ratings are depicted in Figures 15 and 16. There was a significant reduction in daily ratings of pain from post-treatment to three-month follow-up,  $F(2,11) = 3.972$ ,  $p = 0.05$ .



**Figure 15. MEAN DAILY RATINGS OF PAIN FOR GROUP CBT AT BASELINE, POST-TREATMENT AND 3-MONTH FOLLOW-UP**

Although no other GI symptoms were significantly reduced at three-month follow-up, mean daily ratings for all symptoms, except nausea, were lower than those made at baseline.



**Figure 16. MEAN DAILY RATINGS OF GI SYMPTOMS FOR GROUP CBT AT BASELINE, POST-TREATMENT, AND 3-MONTH FOLLOW-UP**

Note: Diar = Diarrhea; Cons = Constipation; Bloat = Bloating; Naus = Nausea

Three-month follow-up data for measures of psychological functioning and health-related quality of life are shown in Figures 17 and 18. In general, Group CBT patients had significantly improved scores at the post-treatment assessment on all measures but overall mental health functioning (SF36-MCS). Group CBT patients remained improved on all measures at the three-month follow-up assessment.

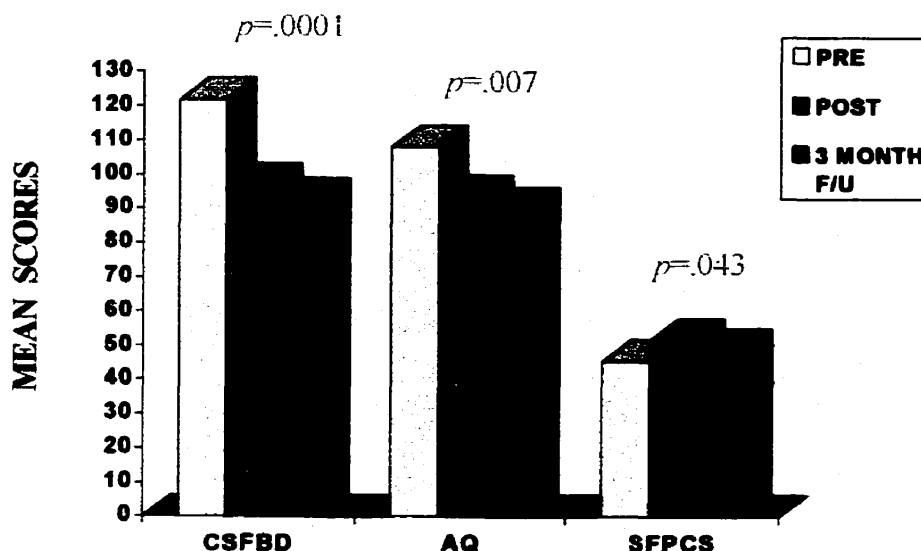
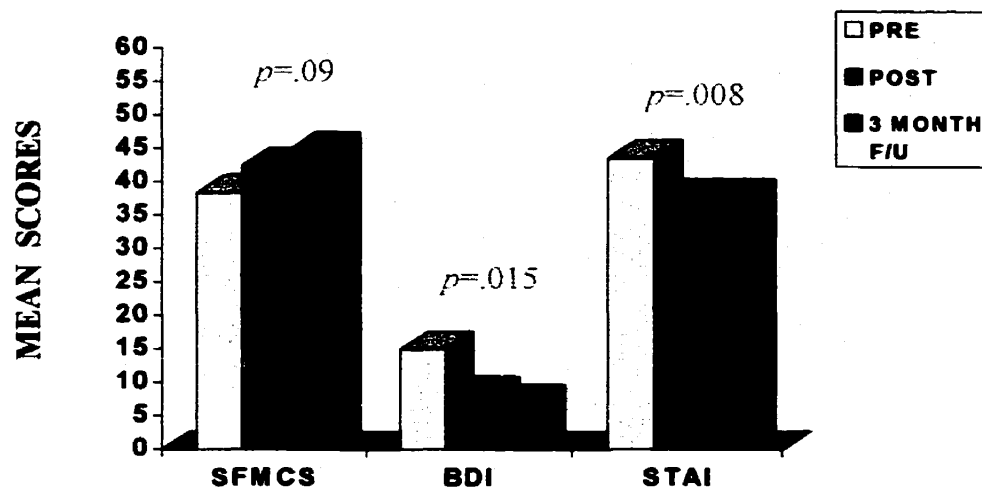


Figure 17. MEAN SCORES ON PSYCHOLOGICAL/HRQOL MEASURES FOR GROUP CBT AT 3-MONTH FOLLOW-UP

Note: CSFBD = Cognitive Scale for Functional Bowel Disorders; AQ = Assertiveness Questionnaire; SFPCS = SF36 Physical Health Component Scale



**Figure 18.** MEAN SCORES ON PSYCHOLOGICAL/HRQOL MEASURES FOR GROUP CBT AT 3-MONTH FOLLOW-UP

Note: SFMCS = SF36 Mental Health Component Scale; BDI = Beck Depression Inventory-II; STAI = State Trait Anxiety Inventory-Trait Scale

### Discussion

The primary hypothesis stating that Group CBT patients would experience a significantly greater pre- to post-treatment reduction in gastrointestinal symptoms than patients in the Symptom Monitoring with Weekly Telephone Contact (SMTC) condition was partially supported. While there were no significant differences between treatments in post-treatment gastrointestinal symptom reduction based on Composite Primary Symptom Reduction (CPSR) scores, Group CBT patients reported significantly greater reductions in overall gastrointestinal symptoms and abdominal pain than SMTC patients based on post-treatment global ratings. It is also important to note that neither treatment condition experienced what could be considered meaningful clinical improvements in terms of mean composite symptom reduction. I will first address the issue of lack of improvement on daily symptom measures and then turn to the results



obtained using the global measures and their interpretation.

There are several potential factors that, either alone or in some combination, could account for why the Group CBT in this study did not effectively reduce gastrointestinal symptoms based on daily diary ratings. These include factors related to the treatment and its delivery, the patient sample, and the daily symptom data itself.

Because existing treatment protocols used in previous studies were not available, a new protocol had to be developed for this study from descriptions obtained in book chapters and methodology sections of published studies that may have contained insufficient detail for this purpose. Therefore, components of the Group CBT protocol may have been delivered differently (i.e., rationale, emphasis, and timing) from components of CBT protocols used in previous studies and this could have differentially impacted outcome. Furthermore, since this study was conducted in a different setting, using different therapists than previous studies, these factors could also have affected the outcome. However, the therapists' professional training and previous experience in the delivery of the active components of the therapy (i.e., relaxation training, cognitive restructuring, and assertiveness training) to IBS patients in that setting, likely served to reduce this potential problem to some degree. Moreover, independent ratings of treatment integrity and patient ratings of treatment credibility would indicate that the new group CBT was both administered competently and perceived as a plausible approach by patients.

Since patients were recruited through specialist physician referral to a hospital clinic service, and not self-referral through advertisements, differential patient motivational factors may have been operating that could have influenced the results. The *Working Team on the Design of Treatment Trials for Functional Gastrointestinal Disorders* recommended that patient setting and characteristics be considered in evaluating the results of clinical trials as these factors

may affect outcome (Veldhuyzen van Zanten et al., 1999). There is some evidence to suggest that many of the referred patients were initially resistant to treatment. The high refusal/drop-out rate (approximately 60%), the fact that several patients indicated that, if given a choice, they would prefer to receive the less involved SMTC treatment, and that only five out of 14 SMTC patients chose to be crossed over into the Group CBT condition all seem to support this conclusion. The fact that the CBT was conducted in a group format may have also inadvertently contributed to some additional apprehension on the part of the patients. On the other hand, one would assume that, for the most part, patients who did choose to receive treatment were more open to the possibility that it would be helpful. Baseline ratings of treatment credibility suggest that, on average, patients had reasonable expectations for success.

Another important factor to consider in evaluating outcome was the high rate of co-morbidity in the patient sample, both in terms of physical health problems (86% of Group CBT; 71% of SMTC) such as migraine headache, fibromyalgia, COPD, chronic fatigue, chronic pain, diabetes, and multiple sclerosis, as well as, psychological distress. These additional difficulties could have differentially impacted patients during the course of treatment and decreased their responsiveness to an otherwise effective treatment. Since none of the previous psychological treatment studies for IBS reported degree of physical health co-morbidity in their samples, direct comparisons are not possible.

Moving to characteristics of the GI symptom data, it was found that the level of gastrointestinal symptoms reported by this sample at baseline were somewhat less severe than anticipated, possibly creating a floor effect or regression to the mean phenomenon at the post-treatment assessment. Toner, Segal, et al. (1998) reported a similar floor effect and controlled for this factor when analyzing their preliminary data. The smaller sample size used in this study

did not allow for this option. Thus, this sample could be best characterized as having a chronic, but mild gastrointestinal symptom pattern with high levels of emotional distress related to those symptoms. The gastrointestinal symptoms reported by this sample were also highly variable across conditions and this large error variance is potentially a more problematic issue.

This pattern of mild symptoms and high symptom variability may create a problem for assessing treatment outcome based on CPSR scores. While CPSR scores define change in relation to baseline symptom levels, a potential weakness is that they are non-uniform with respect to symptom severity. For example, when setting an *a priori* criterion for clinical significance at 50%, the CPSR does not discriminate between a 50% change from average daily symptoms in the range of 4 (incapacitating) to 2 (moderate) and 0.5 (less than mild) to 0.25 (even less than mild). However, one could argue that such discriminations are important clinically, and should be considered in assessing outcomes. The same could be said for changes in the reverse direction. A worsening of symptoms from 2 to 4 would probably be considered as more problematic than a worsening from 0.25 to 0.5. However, the CPSR would indicate that both hypothetical patients are 100% worse.

The more encouraging results obtained using the global measures raise two important questions to consider: (1) why was there a discrepancy between the daily diary and global self-report measures of symptom change? and (2) how should the discrepant results from these measures be meaningfully interpreted when evaluating outcome?

To address the first question, the only published study examining this issue suggested that degree of improvement from treatment of IBS symptoms as indicated by daily diaries correlates only moderately with patient global reports of improvement ( $r = 0.36$ ) (Meissner, Blanchard, & Malamood, 1997). In a not so dissimilar area of behavioral medicine, headache, several studies

indicate that headache patients tend to overestimate degree of post-treatment improvement on global measures (by 20% – 35%) relative to change indices calculated from daily headache diaries (Blanchard, Andrasik, Neff, Jurish, & O'Keefe, 1981; Cahn & Cram, 1980; Holroyd & Penzien, 1990). Possible reasons for the observed discrepancies are that global self-reports are more likely to be influenced by demand characteristics and social desirability influences, as well as recall biases (Barton, Blanchard, & Veazey, 1999; Penzien et al., 1994). These studies would indicate that the potential influence of these factors should not be ruled out when considering the global assessment results in this study.

Although social desirability was not measured in this study, Toner, Koyama, Garfinkel, Jeejeebhoy, and Di Gasbarro (1992) found that IBS patients indeed scored significantly higher on the *Marlowe-Crowne Social Desirability Scale* relative to depressed patients and controls. Furthermore, Toner, Segal, et al. (1998) reported that another sample of IBS patients who were treated with group CBT had significantly reduced social desirability scores as a result of treatment. One could speculate that a post-treatment reduction in social desirability could have two potential effects on study participants: (1) it could reduce patients' defensiveness about reporting symptoms during the post-treatment assessment that may have been present during the baseline assessment; and (2) it could reduce the likelihood that, or degree to which, global reports of symptom reduction are subject to the social desirability bias mentioned above. However, data to support either of these possible effects awaits further study.

Another plausible explanation for the discrepancy was that the global measures actually measured some other construct than intended, and this could partially account for the diversity. To begin with, the global measures asked patients to assess degree of symptom improvement as compared to before treatment, *based on their perceptions of symptoms experienced during the*

*preceding 4-week period.* In contrast, the post-treatment daily symptom monitoring took place over the two weeks immediately following treatment. Therefore, these measures are not directly comparable. Secondly, in responding to the global items, patients may have incorporated their subjective impressions of symptom-related distress, rather than degree of symptom presence *per se*. Research has shown that not all patients with GI symptoms seek medical consultation (Drossman et al., 1988; Drossman et al., 1997) and that psychological distress regarding GI symptoms predicts IBS illness severity and medical treatment-seeking behavior (Drossman et al., 2000). This suggests, in keeping with Drossman's (2000) biopsychosocial model, that there may be two distinct, but related, dimensions that constitute patients' IBS illness experience: (1) gastrointestinal symptoms themselves (which are necessary but may not be sufficient to lead patients to seek treatment) and (2) psychological distress related to those symptoms (which appears to be necessary and sufficient to lead patients to seek treatment). It is possible that Group CBT patients responded more positively to the global measures of symptom reduction due to a greater perceived improvement in the second component, symptom-related psychological distress. It could be argued this would be as important an outcome as actual symptom reduction if it translated to better a quality of life and reduced disability for these patients.

In addressing the second question regarding meaningful interpretation of daily symptom vs. global measures, the evidence cited above regarding overestimation of improvement based on global self-report prompted Blanchard and colleagues to recommend daily diary self-monitoring as the "gold standard" for the clinical treatment and research of pain-related problems such as headache and IBS (Barton et al., 1999; Blanchard & Schwarz, 1988). While this recommendation has been embraced by much of the behavioral medicine community, it was not adopted by the *Multinational Working Teams to Develop Diagnostic Criteria for Functional*

*Gastrointestinal Disorders (Rome II)*. In fact, as part of the consensus recommendations, the working team assigned to clinical trials issued the following statements (Whitehead, 1999):

“Global ratings of symptom severity or symptom change in which the patient is asked to integrate his/her experience, or summated indexes such as validated questionnaires, seem to be as good as specific symptom measures” (p. II78).

And,

“Retrospective ratings of “usual” symptom severity are generally good approximations of daily diary averages over brief periods such as one month or less” (p. II78).

Therefore, within the context of clinical trials research to evaluate pharmacological interventions for IBS, it can be assumed that global self-report measures will continue to be widely used on the basis of these more liberal recommendations. It is also important to note that, for a pharmacological treatment to be considered clinically effective and receive FDA approval in the United States, patient global ratings of “adequate relief” are considered the “gold standard”. Clearly, there may not be a definitive answer regarding which measure is more appropriate. Both would appear to have debatable strengths and weaknesses depending on the philosophical underpinnings of the researchers involved and the objectives of the clinical trial.

It was also hypothesized that a greater number of Group CBT patients in this study would report a 50% or greater gastrointestinal symptom reduction (i.e., a clinically significant response) than patients in the SMTC condition. Although more Group CBT patients (3/14; 21.4%) had Composite Primary Symptom Reduction (CPSR) scores of at least 50% than did SMTC patients (1/14; 7.1%), this difference in treatment response was not statistically significant. More interestingly, five Group CBT (35.7%) and four SMTC (28.6%) patients, or

32% of patients across treatments, had a clinically significant reduction in abdominal pain based on daily diary ratings. This would suggest that some aspect of the two treatments had a beneficial effect for these improved patients.

Group CBT patients in this study experienced significantly greater pre- to post-treatment improvements in psychological functioning and health-related quality of life than SMTC patients. Group CBT patients improved significantly as a result of treatment in the domains of cognitive and emotional distress related to bowel functioning, assertiveness, and important aspects of physical health functioning. While these are significantly positive changes for short-term adjustment, improvements in these areas could also potentially affect long-term self-management (coping) that could lead to reduced health-care utilization by these patients in the future. Two additional indicators from this study reflect the potential importance of cognitive factors in long-term adjustment for these patients: (1) the percentage of cognitive retraining homework completed significantly predicted level of symptom improvement for these patients, and (2) cognitive retraining was rated as the most important self-management skill for coping with IBS by these patients on the post-treatment questionnaire.

In another domain, the decision to add assertion training to the Group CBT package had the desired effect of reducing self-reported distress in situations requiring assertiveness in the treated patients. Increased assertiveness could help patients to reduce the impact of interpersonal and environmental stressors, take better control of gastrointestinal symptoms, and foster an improved sense of well-being. Finally, the self-management skills learned in therapy appear to have played a significant role in improving daily functioning and reducing physical health-related disability for Group CBT patients. As mentioned earlier, these patients appeared to experience levels of distress that may have outweighed their chronic, but apparently mild

symptoms. It is possible that, for this sample of patients, reductions in cognitive and emotional distress, and physical disability were important outcomes in their own right. To further investigate this possibility, the Physical Health Component scales of the SF-36 Quality of Life survey were examined to determine specific areas of improvement. Within Group CBT, patients improved significantly in the areas of reduced bodily pain ( $p = 0.007$ ), increased energy ( $p = 0.015$ ), and improved general health perceptions ( $p = 0.019$ ). SMTC patients improved significantly in the area of reduced bodily pain only ( $p = 0.05$ ). However, Group CBT patients improved significantly more than SMTC patients in the area of role limitations due to physical health problems (i.e., they reported an increased amount of time they were able to work, they accomplished more, they were less limited in the kind of work/activity they could do, and reported less difficulty performing work/activity). These self-reported changes in behavior could have important implications for long-term adjustment in these patients.

It is also encouraging that the significant improvements made in psychological and physical health functioning, as measured within Group CBT patients from baseline to post-treatment, were maintained at three-month follow-up. Maintenance of these improvements in psychosocial functioning likely contributed to the significant reduction in average daily pain experienced by Group CBT patients at three-month follow-up. Taken together, these results suggest that Group CBT patients continued to benefit from the treatment they received. Additional evidence from the three-month follow-up questionnaire suggested that Group CBT patients were still using their coping strategies, though somewhat less frequently than at the post-treatment assessment, and that their ratings of importance regarding using the self-management skills for coping with IBS actually increased.

An interesting new area of research in the area of chronic pain is patient motivation (or



readiness) for adopting the biopsychosocial model of pain and symptom self-management. Research in this area may lead to important discoveries for helping refractory sufferers of chronic health conditions.

To examine this as a treatment process variable, patient motivation for self-management was assessed before and after treatment. At baseline, patients in the two treatment conditions were remarkably similar in their responses on the four scales of the PSOCQ. This suggested that our approach to matching participants prior to random assignment worked extremely well for this variable. The baseline pattern also revealed that the patients in both conditions had significantly higher scores on the *Contemplation* scale than the other three, suggesting that they may have been interested in adopting a self-management approach but also may have been ambivalent about acting on that interest in the short term. This lends support to the possibility discussed earlier that some patients in this study may have been somewhat hesitant to participate fully in the early stages of treatment. Consistent with the Pain Stages of Change Model, at post-treatment, Group CBT patients demonstrated significantly lower scores on the *Precontemplation*, and significantly higher scores on the *Action* and *Maintenance* scales of the PSOCQ, than SMTC patients. This would suggest that Group CBT patients were more actively engaged in self-management at post-treatment than were SMTC patients. However, because this is the first study we are aware of to assess motivation for IBS treatment, it is not possible to determine how patient motivation in this study relates to the motivation of IBS patients treated in other studies.

One other process variable, treatment adherence, was assessed in this study. It was found that patient compliance with Group CBT weekly homework, as assessed by calculating the percentage of exercises completed, was significantly related to gastrointestinal symptom

reduction based on the CPSR. Moreover, the only component of homework to significantly predict CPSR scores was the percentage of cognitive retraining homework completed. This would seem to suggest that active engagement in homework activities was an important variable in this study and that more patients in the Group CBT condition could have improved had their compliance with homework exercises, particularly cognitive retraining exercises, been better. Finally, this result provides further indirect evidence that cognitive retraining may be the most efficacious ingredient of CBT for the management of IBS (Blanchard & Malamood, 1996).

### **Limitations of the Study**

One important limitation of this study was a smaller than anticipated sample size. While over 100 referrals were received, only a fraction of these patients were actually randomly assigned and completed at least one of the two treatments. Therefore, the results of this study may not be generalizable to other populations of treatment-seeking or non-treatment-seeking IBS patients who may be less amenable to adopting a biopsychosocial model of IBS symptom management.

One must also acknowledge the problem of alpha-level inflation when interpreting the large number of statistical analyses reported in this study. Conscious effort was made to keep alpha under reasonable control for tests of the primary hypotheses. Additional statistical tests were conducted in order to provide explanatory power for interpreting the primary outcomes.

Another limitation is that because 96% of the sample was female, the sample underrepresented the proportion of males with IBS in the general population (i.e., 3 females : 1 male). The fourth potential limitation deserving comment involves the post-treatment credibility data. While the possibility can not be entirely ruled out that the positive results obtained for the Group CBT patients in this study were influenced by differential levels of treatment

credibility/expectancy at post-treatment, it may be premature to adopt this alternative explanation because, rather than lowering their ratings of credibility, SMTC patients actually remained consistent in their perceptions of treatment throughout. It is also highly plausible that Group CBT patients increased their perceptions of credibility in response to the impact that the treatment had in reducing psychological distress and improving physical health quality of life indicators. This rationale favors the interpretation that positive treatment effects were in fact due to the differential effect of the two treatments and not due to expectancy effects.

The final limitation is that a comparison between the two treatment groups at 3 month follow-up was not possible because patients who completed the SMTC treatment were offered Group CBT as soon as possible after their treatment ended, in keeping with ethical guidelines.

### **Conclusions**

The following conclusions can be drawn based on the findings of this study:

1. Group CBT for specialist-referred, refractory IBS patients may require adjusted expectations for initial gastrointestinal symptom reduction based on daily symptom measures given initial symptom severity, chronicity, and comorbid medical/psychiatric factors. Researchers must carefully consider the advantages and disadvantages of increasing the relative importance afforded to global measures of symptom reduction in determining the overall outcome of a clinical trial under these circumstances.
2. Reducing IBS-related psychological distress and physical disability appears to be an important short-term outcome, and may be an important determinant of long-term management (coping) and reduced health care utilization.
3. Motivational readiness to adopt a biopsychosocial self-management approach shows promise as an important variable in successful treatment planning and outcome for specialist-

referred, refractory IBS patients.

4. Patient adherence to regular home-based practice of the recommended treatment components, particularly cognitive retraining, would also appear to be an important variable in self-regulatory coping skill development and treatment outcome.

#### **Future Research**

It would seem prudent to determine through further research whether adjustments to the Group CBT protocol (e.g., fewer components, more sessions spread out over time) used in this study are required for the treatment of specialist-referred, refractory IBS patients. Alternatively, more careful and restrictive screening of patients may identify those who will be most likely to benefit from a group, as opposed to a more intensive individual, approach.

It is also recommended that the development of assessment tools for measuring the motivation of refractory IBS patients continue to be a research priority. This may also lead to the development of therapeutic strategies that improve the motivation of refractory IBS patients for adopting the biopsychosocial model of self-management.

It would also be informative to investigate whether psychological treatment results in improved long-term coping and reduced health care utilization in refractory IBS patients. The development and use of measures of behavioral avoidance and IBS-specific coping would advance the field in this regard. Moreover, with the ever-increasing development of health care databases, and greater accessibility to procuring health-care utilization data for the purposes of research, such a line of investigation would perhaps be equally important to that of evaluating symptom change in this population.

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### **Glossary of Key Abbreviations**

ACC	Anterior Cingulate Cortex
AQ	Assertiveness Questionnaire
BDI-II	Beck Depression Inventory – 2 <sup>nd</sup> Edition
CNS	Central Nervous System
CPSR	Composite Primary Symptom Reduction
CSFBD	Cognitive Scale for Functional Bowel Disorders
CSQ-8	Client Satisfaction Questionnaire – 8
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders – 4 <sup>th</sup> Edition
ENS	Enteric Nervous System
GAS	Group Attitude Scale
GI	Gastrointestinal
Group CBT	Group Cognitive Behavior Therapy
HRQOL	Health-Related Quality of Life
IBS	Irritable Bowel Syndrome
PET	Positron Emission Tomography
PFC	Prefrontal Cortex
PSOCQ	Pain Stages of Change Questionnaire
PSOCQ-P	Pain Stages of Change Questionnaire – Precontemplation Scale
PSOCQ-C	Pain Stages of Change Questionnaire – Contemplation Scale
PSOCQ-A	Pain Stages of Change Questionnaire – Action Scale
PSOCQ-M	Pain Stages of Change Questionnaire – Maintenance Scale
SCID	Structured Clinical Interview for DSM

SF36-PCS	<b>Medical Outcomes Short Form 36 Health Survey – Physical Health Component Scale</b>
SF36-MCS	<b>Medical Outcomes Short Form 36 Health Survey – Mental Health Component Scale</b>
SMTC	<b>Symptom Monitoring with Weekly Telephone Contact</b>
STAI-T	<b>State Trait Anxiety Inventory – Trait Scale</b>

## Appendix 1

### Behavioral Mechanisms Contributing to the IBS Experience

Whitehead and colleagues proposed four behavioral mechanisms to account for the psychosocial aspects of the disorder: (a) stress responses; (b) Pavlovian (respondent) conditioned responses; (c) operant conditioning, and (d) modeling. They have demonstrated in a number of studies that certain behavioral (and physiological) expressions of the IBS illness experience may be learned and thus amenable to behavioral intervention. A fifth, not yet proposed mechanism, rule-governed behavior, will also be described

**Stress responses.** Stress responses are psychophysiological reactions elicited by environmental events that would be aversive to most people, particularly if the stressful stimuli are sufficiently prolonged or intense. Examples include chronic work-related stressors or failure to resolve communication problems in close interpersonal relationships. This explanation relies on the notion that different individuals, in response to prolonged or intense autonomic arousal, have biological vulnerabilities predisposing them toward hypersensitivity in particular physiological systems (e. g., gastrointestinal, cardiovascular, respiratory, etc.).

**Respondent conditioning.** Respondent conditioning occurs when neutral stimuli (i. e., objects, events, people, or thoughts) become associated with stimuli already able to elicit physical responses such that the neutral stimuli alone can then elicit those bodily responses. An individual subjected to excessive autonomic arousal as a result of chronic stressors at work may develop colonic hypermotility. Through repeated pairing, previously neutral stimuli associated with work (e. g., clothes, tools, briefcase, thoughts, images) may function to elicit and/or exacerbate the motility of the gut. Thus, the physical responses, and perhaps, fear, may become generalized to a variety of events, objects, people, or private stimuli associated with the original

autonomically-arousing stimulus. There is a vast literature demonstrating that both visceral and emotional responses to previously neutral stimuli have been conditioned in animals and humans through this process (Martin & Pear, 1996).

Whitehead, Engel, & Schuster (1980) showed that IBS patients respond with colonic hyperreactivity to rectal balloon distention, an objectively neutral stimulus. Whitehead and Schuster (1985) concluded, based on this finding and a review of both animal and human research, that IBS patients are biologically predisposed to experience bowel symptoms because they respond with nonspecific hyperreactivity to many environmental stimuli – a process likely facilitated by Pavlovian (classical) conditioning.

**Operant conditioning.** Operant conditioning occurs when the probability of a behavior is strengthened or weakened as a result of its consequences and the context in which it occurs. Most principles of operant conditioning are relevant to chronic illness behavior including: positive reinforcement, punishment, stimulus and response generalization, escape conditioning, avoidance conditioning, extinction, and discriminative stimulus control (Sanders, 1996). Positive reinforcement has been proposed as the principle explaining why illness behavior or pain behavior is learned and maintained in psychophysiological disorders (Fordyce, 1976). Increased attention or sympathy following the display of illness behavior or verbal disclosure of somatic complaints is the most frequently used example.

Punishment describes the situation in which a response decreases in frequency after being contingently followed by an aversive stimulus. Typical punishers for illness sufferers can include social ridicule, interpersonal discord, stressful emotions, loss of economic benefits, and the experience of pain or illness symptoms themselves (Sanders, 1996). The chronic pain or functional illness experience typically begins when pain and symptoms are experienced as primary punishers.

As the illness becomes chronic, secondary punishers may be conditioned. The result is usually a systematic reduction in the frequency of overt well-behaviors such as regular physical activity and work-related behavior.

Escape conditioning occurs when a behavior increases in frequency as a result of the removal of an aversive stimulus. Frequency of toilet visits and/or bowel movements may increase, for example, if the result is relief of aversive abdominal pain or discomfort. And the response of toilet visiting may further increase in frequency if the response becomes generalized to increasingly finer discriminations of abdominal discomfort. An individual who learns to make a response (e. g., staying home from work or checking for the closest washroom when in public) in order to avoid anxiety and aversive gastrointestinal symptoms may have this response strengthened by avoidance conditioning. Further adding to the future difficulties, this operant response maintains the gastrointestinal difficulties because it prevents the individual from experiencing respondent extinction of those symptoms. If the learned response enables the patient to avoid a particular negative consequence, the individual never learns that the aversive consequence may not actually occur when the response is not emitted. Once such a relation has been conditioned, the actual presence of the aversive experience is no longer necessary.

A learned behavior is influenced not only by its consequences, but also by the environmental context in which it occurs. Various stimuli in the environment can acquire discriminative or cue-like functional control over behavior. A behavior that is reinforced in the presence of a particular stimulus, will be observed to occur more frequently when that stimulus is present. Conversely, a behavior that is not reinforced in the presence of a particular stimulus, will be observed to occur less frequently when that stimulus is present. For example, some patients may be more apt to complain about symptoms or demonstrate pain-related behaviors, or generalized

inactivity, in the presence of others who have reinforced those behaviors in the past. On the other hand, the same patients will be less likely to display pain-related behaviors in the presence of others who have failed to reinforce, or have punished, those behaviors on previous occasions.

Biofeedback experiments demonstrated that visceral responses such as gastrointestinal motility (Whitehead & Drescher, 1980) and gastric acid secretion (Whitehead, Renault, & Goldiamond, 1975) could be modified by providing reinforcement contingent on these physiological events. And, Whitehead, Winget, Fedoravicious, Wooley, and Blackwell (1982) found that patients with IBS, as compared to patients with peptic ulcer disease and non-IBS controls, were significantly more likely to report that they had been reinforced with toys, gifts, special privileges, or treat foods such as ice cream by their parents when they had a cold or flu as children. Lowman, Drossman, Cramer, and McKee (1987) and Whitehead et al. (1994) also found retrospective evidence suggesting that operant reinforcement for illness behavior during childhood plays a role in the development of adult IBS illness behavior.

**Modeling.** Whitehead and his collaborators have also presented data to indicate that observational learning or modeling appears to play an important role in learned illness behavior (Levy, Whitehead, Von Korff, & Feld, 2000; Whitehead et al., 1994; Whitehead et al., 1982). For example, Levy et al. (2000) compared children of parents who were, or were not, diagnosed with IBS during a one-year period on health care use and costs over a three-year period using a health care database. Children were matched on age, gender, and number of siblings. After controlling for the nature of outpatient visits, case children had significantly more ambulatory care visits for gastrointestinal symptoms, and incurred higher health care costs over the three year period, than did control children. Levy et al. (2000) concluded that the development of inappropriate IBS-related health care visits may be prevented through educational programs



directed at teaching parents alternative ways of responding to their own symptoms and to their children's somatic complaints.

**Rule-governed behavior.** Another aspect of operant conditioning, not previously proposed, is the possible role of rule-governed behavior in maintaining conditioned emotional reactions, behavioral avoidance, and gastrointestinal symptoms associated with IBS. Skinner (1969) distinguished between contingency-shaped and rule-governed behavior. Contingency-shaped behavior is behavior acquired through trial and error due to its direct acting consequences. Rule-governed behavior is behavior that comes under the stimulus control of a verbal rule. A rule is a statement that a particular behavior will be reinforced in a given situation, even though that reinforcement may be delayed. Behavior is controlled by a rule when the statement of the rule is correlated with the increased likelihood of the behavior described, even in the absence of its ultimately reinforcing consequences. Effective rules typically specify all components of a three-term contingency of reinforcement: antecedents, behaviors, and consequences (Martin & Pear, 1999).

Rule following may be associated with relatively functional or dysfunctional behavioral repertoires. Dysfunctional rule-following may be implicated in instances of avoidance conditioning, described above, because it describes inaccurate contingencies of reinforcement, tends to perpetuate fear, and makes it less likely that individuals will experience respondent extinction. Nor is it likely that they will engage in adaptive behavior that they may experience the actual positive contingencies available to them. For example, in the situation described earlier, an individual who learns to make a response such as staying home from work or reducing regular participation in social activities, in order to avoid anxiety or embarrassment because of frequent toilet visits, may have this response controlled by the self-statement of a rule such as, "If I go to work today, I will

probably spend most of the day in the toilet and people will start to notice and ask questions, so its better that I stay home until I'm feeling 100%". Rule-governed behavior has been proposed as a possible theoretical framework for understanding and enhancing the effectiveness of cognitive therapy (Martin & Pear, 1999; Zettle & Hayes, 1982).

## **Appendix 2**

### **Summary of Chambless and Hollon's (1998) Criteria for Empirically Supported Psychological Therapies (EST's)**

1. Comparison with a no-treatment control group, alternative treatment group, or placebo (a) in a randomized control trial, controlled single-case experiment, or equivalent time-samples design and (b) in which the EST is statistically significantly superior to no treatment, placebo, or alternative treatments or in which the EST is equivalent to a treatment already established in efficacy, and power is sufficient to detect moderate differences.
2. These studies must have been conducted with (a) a treatment manual or its logical equivalent; (b) a population, treated for specific problems, for whom inclusion criteria have been delineated in a reliable, valid manner; (c) reliable and valid outcome assessment measures, at minimum tapping the problems targeted for change; and (d) appropriate data analysis.
3. For a designation of efficacious, the superiority of the EST must have been shown in at least two independent research settings (sample size of 3 or more at each site in the case of single-case experiments). If there is conflicting evidence, the preponderance of the well-controlled data must support the EST's efficacy.
4. For a designation of possibly efficacious, one study (sample size of 3 or more in the case of single-case experiments) suffices in the absence of conflicting evidence.
5. For a designation of efficacious and specific, the EST must have been shown to be statistically significantly superior to pill or psychological placebo or to an alternative bona fide treatment in at least two independent research settings. If there is conflicting evidence, the preponderance of the well-controlled data must support the EST's efficacy and specificity.

**Appendix 3  
Physician's Desk Reference**

**IBS CBT Study: Comparison of Group Cognitive-Behavioral and Symptom Monitoring Interventions for Irritable Bowel Syndrome**

**Step I. Diagnosing Irritable Bowel Syndrome**

Please refer any patient you see during the recruiting period, new or returning, who can be diagnosed with IBS based on the more restrictive

**Rome Diagnostic criteria:**

At least **3 months** of continuous or recurrent symptoms of the following:

Abdominal pain or discomfort  
Relieved with defecation, or  
Associated with a change in frequency of stool, or  
Associated with a change in consistency of stool; and

Two or more of the following, at least on one fourth of occasions or days:

Altered stool frequency (more than 3 bowel movements/day or less than 3 bowel movements/week), or  
Altered stool form (lumpy/hard or loose/watery stool), or  
Altered stool passage (straining, urgency, or feeling of incomplete evacuation), or  
Bloating or feeling of abdominal distension

**Step II. Exclusionary Criteria**

Evaluate the patient for the following conditions based on laboratory test findings and/or physical examination:

- (a) **Inflammatory Bowel Disease (IBD)**
- (b) **Intestinal Parasites**
- (c) **Other Known Organic Gastrointestinal Conditions**
- (d) **Pregnancy**
- (e) **Patients you would judge as unable to communicate comfortably in the English language, at a level satisfactory to benefit from verbal psychological treatment**

Do not refer patients meeting diagnostic criteria for the above conditions.

### **Step III. Informing the Patient About the Study**

Paraphrase in your own words the following essential points:

- (1) In addition to standard medical treatment options, health psychologists often provide effective treatment for IBS. (Indicate your support for the project and create a reasonable expectation for success). (Note: Emphasize the biopsychosocial perspective. Avoid giving the patient the impression that he or she is being referred for treatment of a mainly psychiatric condition).
- (2) Dr. Lesley Graff, a clinical health psychologist at the Health Sciences Centre, and Gregg Tkachuk (pronounced Taychuck), a Ph. D level graduate student are offering IBS patients the opportunity to participate in a psychological treatment study.
- (3) Two treatments will be compared: (a) Cognitive-Behavioral Group Treatment - a structured, educational, self-management program for coping with GI symptoms and stress; and (b) Symptom Monitoring - home-based treatment that has been effective for some IBS patients. All patients initially assigned to the Symptom Monitoring treatment will later receive the Cognitive-Behavioral Group Treatment, if they desire.

### **Step IV. Enrolling the Patient To Receive Further Information**

- (1) Ask patients if they would be interested in obtaining further information from the principal investigators about participating in the study.
- (2) If a patient wishes to obtain more information and be considered for the study, obtain his or her written consent (on the prepared Consent Form provided for you) to be contacted by telephone.
- (3) If a patient chooses not to participate, record the patient's initials, date of birth, gender, duration of symptoms, and, if possible, his or her reason(s) for refusal on the prepared Refusal/Nonreferral form.

### **Step V. Keeping In Contact With the Principal Investigators**

- (1) Forward contact information for consenting patients to Dr. Lesley Graff (Voicemail: 787-3490 or Fax: 787-7480) as soon as possible.
- (2) Weekly pick-up of signed consent forms will be arranged.
- (3) If you have questions or need further info, contact Gregg Tkachuk (667-1630) or Dr. Lesley Graff (787-3490).

**Appendix 4**  
**Information and Consent Form**

**INFORMATION AND CONSENT FORM**  
**A COMPARISON OF COGNITIVE-BEHAVIORAL AND SYMPTOM MONITORING**  
**INTERVENTIONS FOR IRRITABLE BOWEL SYNDROME**

You are being asked to participate in a study to evaluate two treatments for irritable bowel syndrome. Before you give your consent to participate, we ask you to read the following and ask as many questions as necessary to ensure that you understand what your participation involves.

Nature and Purpose of the Study

Irritable bowel syndrome (IBS) is a common gastrointestinal problem marked by disturbances in bowel functioning for which there is no known cause. It is thought to result from problems in nervous system communication between our brain and our gut. This problem is seen to varying degrees in 20% of the population. In addition, many people with IBS report that they lead extremely hectic lives and have concerns about their long-term health. While several drug treatments have been prescribed for IBS, none have been universally effective in relieving symptoms. Psychological therapies have been developed over the past decade that help patients to effectively reduce and manage their own IBS symptoms. However, there remains a need to evaluate which approaches to treatment are most effective and how we can make this treatment more available to the large number of people with this problem.

In this study we will be comparing the effectiveness of a cognitive-behavioral group treatment and symptom monitoring for helping people with IBS. The group treatment is designed to provide you with a variety of coping strategies to deal with the symptoms of IBS including: daily symptom monitoring, educational information about IBS, relaxation techniques, changing thinking patterns that make living with IBS difficult, and learning how to take back control of your life and deal more effectively with others. An added advantage of the group approach is gaining strength from the social support of others with IBS who also contribute what they have already learned in coping with this chronic problem.

In contrast to the group treatment, participants receiving the symptom monitoring treatment will only be asked to monitor and record their IBS symptoms once daily, in the evening (recording takes only a few minutes), throughout the first 13 weeks of the study. Follow-up telephone calls will also be made periodically to offer assistance and answer any questions that may arise. Symptom monitoring alone has been found to be effective for some IBS patients. After this period, participants who wish to receive the group treatment will have the opportunity to do so. Participants in both treatments will be asked to fill out a set of brief questionnaires (completion time approximately 60 minutes) once before and after treatment.

Each participant who is accepted into the study will have a 50% chance of receiving either the group or symptom monitoring treatment at the beginning of the study.

## **A COMPARISON OF COGNITIVE-BEHAVIORAL AND SYMPTOM MONITORING INTERVENTIONS FOR IRRITABLE BOWEL SYNDROME**

### Study Procedures

Each potential participant will be interviewed to determine whether these treatments are appropriate for the problems she/he has been experiencing. Limitations on who may participate will be based on the extent of additional problems that are occurring.

If a person provides informed consent, and is accepted into the study, she/he will:

- (1) Attend one information/interview session (Total time: 2 hours);
- (2) Complete a package of brief questionnaires concerning different areas of functioning, once before and after treatment (Time: approximately 60 minutes);
- (3) Record IBS symptoms once daily throughout the course of treatment (Time: a few minutes per day);

In addition, during the cognitive-behavioral group treatment participants will:

- (4) Attend 10, 90-minute group meetings, held over nine weeks (two in the first week and one per week after that), with seven to nine other people with IBS and two group facilitators  
(one registered clinical psychologist who specializes in treating IBS and one Ph. D. level graduate student with supervised training experience in treating IBS);
- (5) Complete reading and homework assignments between meetings (Time: approximately 15 - 20 minutes per day is recommended).

In order to evaluate the long-term effectiveness of the treatments, participants will be contacted three months and 1 year after completion of their treatment to complete follow-up symptom diaries and questionnaires.

### Treatment Integrity Check

One of the requirements of treatment research is that group leaders follow a specific treatment plan. In order to assess the degree to which the treatment plan is followed, we will be audiotaping group therapy sessions. Patient information from group sessions will not be evaluated or used in any way as a result of this process.

### Potential Benefits

- (1) Previous treatments of this nature have resulted in up to 80% of patients significantly reducing their IBS symptoms and any additional distress experienced.
- (2) Participants would benefit by taking advantage of a free treatment that typically could cost as much as \$1000.00 if sought privately, and a service that is seldom offered because few therapists practice this speciality in our province.

## **A COMPARISON OF COGNITIVE-BEHAVIORAL AND SYMPTOM MONITORING INTERVENTIONS FOR IRRITABLE BOWEL SYNDROME**

- (3) For some patients, these treatments represent a drug-free alternative to standard medical treatments for IBS.

**Note:** If you are already taking prescribed medications for IBS, you will not be asked to suspend their use. However, you will be asked to keep a record of the type and amount of any medication you do take for specifically managing IBS symptoms.

### Possible Risks of Participation

There have been no reports of negative side-effects from participation in these treatments. On the other hand, some participants may feel some initial discomfort or embarrassment with meeting in a group setting. This discomfort is a common and natural reaction, and typically subsides within the first or second session. The major cost to you of participating is the time required to complete the initial interview, the IBS symptom monitoring, the group treatment, and the brief questionnaire package.

### Other Treatments for IBS

**Standard medical treatment**, which has met with variable success depending on the severity of the symptoms, typically consists of medication trials of bulking agents, antispasmodics, and/or low-dose antidepressants (the latter target sleep and pain rather than depression). **Cognitive-behavioral therapy**, conducted individually, is the best supported psychological treatment for IBS. However, because of the large numbers of individuals with this disorder, lengthy waiting list periods often make this treatment option less attractive to patients and referring gastroenterologists.

### Confidentiality

The information gathered will remain confidential in keeping with the policies of the Health Sciences Centre and the University of Manitoba. All personal data will be identified by a code number so that a participant's name will never be associated with the his/her responses. All information will be stored in a secure data filing location at the Health Sciences Centre. Only members of the research team will have access to participant responses from this study. Participant names will not appear in any reports which may be published based on this research.

### Voluntary Participation

Your participation in this study is entirely voluntary. You have the right to decline participation, or to withdraw your participation at any time, for any reason, without prejudice. Ultimately, your well-being is our primary concern.



**If Questions Arise**

Should you have any questions concerning this study, please contact Dr. Lesley Graff, Department of Clinical Health Psychology, Faculty of Medicine, who may be reached at 787-3876.

**CONSENT FORM FOR PARTICIPATION IN A COMPARISON OF COGNITIVE-  
BEHAVIORAL AND SYMPTOM MONITORING INTERVENTIONS FOR  
IRRITABLE BOWEL SYNDROME**

I, \_\_\_\_\_ have been informed of the nature and purpose of the study as well as the potential risks and benefits of participation. I have had an opportunity to ask questions about the study, and all of my questions have been answered to my satisfaction.

I give my voluntary and informed consent to participate in this study. I understand that I am free to withdraw my consent and stop participating at any time. I also understand that by signing this form, I do not waive my legal rights.

\_\_\_\_\_  
Participant Signature

\_\_\_\_\_  
Date

Mailing Address:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Investigator Signature

\_\_\_\_\_  
Date

Patient Code #: \_\_\_\_\_

**Appendix 5.****Alternative Results Section Using An Independent Samples  
Approach Including Matched Pair Exclusions**

## Results

### Pretreatment Comparisons

Basic demographic information for the two treatment conditions is summarized in Table

3. The sample was 88.9% female, with an age range of 18 to 68, and an average age of 39.0.

Fifty-two point eight percent of participants were married or living with a partner, 36.1% were single, and 11.1% were separated or divorced. Ninety-one point seven percent of the sample had at least a high school education and 69.4% had education beyond the high school level. Seventy-seven point eight percent were employed, with 55.6% occupying professional positions.

Participants first experienced gastrointestinal symptoms an average of 9.5 years ago, with a range of 9 months to 45 years. Sixty-three point nine percent of the sample was diagnosed with at least one *DSM-IV* Axis I diagnosis, with 33.3% receiving a primary diagnosis of Generalized Anxiety Disorder, 11.1% Major Depressive Disorder, 13.9% Social Anxiety Disorder, 2.8% Post Traumatic Stress Disorder, and 2.8% Somatoform Disorder. Participants also reported relatively high levels of co-morbid medical diagnoses (72.2%), prescription medication use (50.0%), and over-the-counter medication use (80.6%). No significant differences on demographic variables were found between the two conditions.

#### **Table 3.**

*Means (Standard Deviations) and Percentages of Continuous and Nominal Variable Demographics*

Variable	Treatment Condition		<i>t</i> -test
	Group CBT	SMTC	
Age	36.29 (14.64)	41.42 (13.48)	$p = 0.28$
Symptom Duration (Months)	101.24 (83.46)	124.84 (124.94)	$p = 0.52$
Number of Flareups in Previous 3 Months	12.29 (10.04)	8.53 (4.39)	$p = 0.15$

*Frequencies of Nominal Demographics*

Variable	Treatment Condition		Cramer's <i>V</i>
	Group CBT	SMTC	
IBS Subtype			<i>p</i> = 0.43
Diarrhea	52.9%	31.6%	
Constipation	11.8%	15.8%	
Mixed	35.3%	52.6%	
SCID Diagnosis			<i>p</i> = 0.55
Subthreshold	41.2%	31.6%	
Axis I Diagnosis	58.8%	68.4%	
Axis I Subtype			<i>p</i> = 0.83
None	41.2%	31.6%	
GAD	35.3%	31.6%	
Social Anxiety	11.8%	15.8%	
PTSD	0%	5.3%	
Depression	11.8%	10.5%	
Somatoform Disorder	0%	5.3%	
Gender			<i>p</i> = 0.35
Female	94.1%	84.2%	
Male	5.9%	15.8%	
Marital Status			<i>p</i> = 0.10
Never Married	47.1%	26.3%	
Married	35.3%	47.4%	
Separated/Divorced	0%	21.1%	
Common Law	17.6%	5.3%	
Education			<i>p</i> = 0.68
Some High School	5.9%	10.5%	
High School	17.6%	26.3%	
Community College	29.4%	31.6%	
Bachelor's Degree	41.2%	26.3%	
Some Graduate School	0%	5.3%	
MA/PhD	5.9%	0%	
Employment Status			<i>p</i> = 0.47
Full Time	58.8%	57.9%	
Part Time	11.8%	26.3%	
Unemployed	17.6%	5.3%	
Homemaker	5.9%	10.5%	
Full Time Student	5.9%	0%	
Occupation			<i>p</i> = 0.72
None	29.4%	15.8%	
Professional	23.5%	42.1%	

Managerial/Business	23.5%	15.8%	
Secretarial/Clerical	11.8%	15.8%	
Manual Labor	11.8%	10.5%	
<b>Other Medical Diagnoses</b>			<i>p</i> = 0.59
Yes	76.5%	68.4%	
No	23.5%	31.6%	
<b>Prescribed Medications</b>			<i>p</i> = 0.10
Yes	64.7%	36.8%	
No	35.3%	63.2%	
<b>Over the Counter Medications</b>			<i>p</i> = 0.06
Yes	94.1%	68.4%	
No	5.9%	31.6%	

---

Table 4 presents the pretreatment gastrointestinal symptom means for the two experimental conditions. In general, mean daily gastrointestinal symptoms ratings were in the mild range during the baseline period. However, large variability in daily symptom ratings occurred within both treatment conditions. There were no significant pretreatment differences between conditions for gastrointestinal symptoms.

**Table 4.**  
*Means (Standard Deviations) and t-tests for Individual Gastrointestinal Symptoms at Baseline.*

Gastrointestinal Symptom	GCBT	SMTC	<i>t</i> (df)	<i>p</i> -value
<i>Pain</i>	1.00 (0.60)	1.19 (0.66)	<i>t</i> (1, 34) = -0.90	0.37
<i>Diarrhea</i>	0.58 (0.48)	0.77 (0.56)	<i>t</i> (1, 34) = -1.11	0.27
<i>Constipation</i>	0.62 (0.52)	0.56 (0.57)	<i>t</i> (1, 34) = 0.32	0.75
<i>Bloating</i>	1.22 (0.69)	1.20 (0.78)	<i>t</i> (1, 34) = 0.08	0.94
<i>Gas</i>	1.18 (0.67)	1.29 (0.65)	<i>t</i> (1, 34) = -0.48	0.64
<i>Nausea</i>	0.34 (0.41)	0.31 (0.49)	<i>t</i> (1, 34) = 0.24	0.81

Table 5 presents the pretreatment means for the measures of psychological functioning, health-related quality of life, and treatment process measures. In general, the sample exhibited what would appear to be a moderately severe level of gastrointestinal symptom-related distress, mild depression, above average generalized trait anxiety, and problematic discomfort in situations requiring assertiveness. Participants' health-related quality of life scores fell in the average range for overall physical health and in the below average range for overall mental health. There were no significant pretreatment differences between conditions for these measures.

**Table 5.**  
*Means (Standard Deviations) and t-tests for Psychological/Quality of Life Measures at Baseline.*

Measure	GCBT	SMTC	<i>t</i> (df)	<i>p</i> -value
<i>CSFBD</i>	126.71 (24.65)	115.58 (23.57)	<i>t</i> (1, 34) = 1.38	0.18
<i>BDI</i>	14.29 (9.89)	14.63 (9.71)	<i>t</i> (1, 34) = -0.10	0.92
<i>STAI-T</i>	44.24 (9.37)	45.42 (10.39)	<i>t</i> (1, 34) = -0.36	0.72
<i>AQ</i>	106.29 (26.34)	98.00 (23.84)	<i>t</i> (1, 34) = 0.99	0.33
<i>SF36-PCS</i>	46.17 (8.00)	43.62 (12.49)	<i>t</i> (1, 34) = 0.72	0.48
<i>SF36-MCS</i>	37.94 (8.80)	37.93 (11.06)	<i>t</i> (1, 34) = 0.00	0.99
<i>PSOC-P</i>	2.40 (0.66)	2.73 (0.74)	<i>t</i> (1, 34) = -1.42	0.17
<i>PSOC-C</i>	4.29 (0.46)	4.05 (0.49)	<i>t</i> (1, 34) = 1.51	0.14
<i>PSOC-A</i>	3.10 (0.78)	3.18 (0.82)	<i>t</i> (1, 34) = -0.29	0.77
<i>PSOC-M</i>	2.94 (0.66)	3.07 (0.73)	<i>t</i> (1, 34) = -0.54	0.59

Note: *CSFBD* = Cognitive Scale for Functional Bowel Disorders; *BDI* = Beck Depression Inventory; *STAI-T* = State Trait Anxiety Inventory – Trait Scale; *AQ* = Assertiveness Questionnaire; *SF36-PCS* = Medical Outcomes Short Form 36 Health Survey - Physical Health Component Scale; *SF36-MCS* = Medical Outcomes Short Form 36 Health Survey – Mental Health Component Scale; *PSOC-P* = Pain Stages of Change Questionnaire – Precontemplation Scale; *PSOC-C* = Pain Stages of Change Questionnaire – Contemplation Scale; *PSOC-A* = Pain Stages of Change Questionnaire – Action Scale; *PSOC-M* = Pain Stages of Change Questionnaire – Maintenance Scale. For the *CSFBD*, *BDI*, *STAI-T*, and *AQ*, larger scores indicate poorer adjustment.

### **Treatment Outcome Analyses**

The treatment outcome data analyses consisted of between treatment comparisons of (a) daily gastrointestinal (GI) symptom ratings, (b) the proportion of patients who were clinically improved based on daily ratings, (c) post-treatment global ratings of GI symptom reduction, and (d) psychological functioning and health-related quality of life.

**Daily GI symptom ratings.** First, a composite primary symptom reduction (CPSR) score was calculated for each participant following the recommendations of Blanchard and Schwarz



(1988). For each of the primary GI symptoms (e. g., abdominal pain, diarrhea, constipation) that define IBS, a symptom reduction score was calculated for each participant as follows:

*Diarrhea symptom reduction score* =

$$\frac{\text{Average pretreatment diarrhea} - \text{average posttreatment diarrhea}}{\text{Average pretreatment diarrhea}} \times 100$$

The symptom reduction scores for the two or three primary symptoms were averaged for each participant:

$$\text{CPSR score} = \frac{\text{Pain score} + \text{diarrhea score} + \text{constipation score}}{2 \text{ or } 3 \text{ (depending on number of primary symptoms)}}$$

To statistically test the first hypothesis, an independent samples t-test was conducted on CPSR scores. A summary of this analysis can be viewed in Table 6. There was no statistically significant difference between treatment conditions for CPSR scores,  $t(1, 33) = -1.276, p = 0.214$ . Although eleven of the 17 Group CBT patients had GI symptoms that were worse at post-treatment, only four demonstrated what could be considered clinically significant increases moving from the mild to moderate symptom category. Another four of these patients began and finished in the mild symptom category, while three began and finished in the moderate symptom category. Although GI symptom intensity levels fluctuated somewhat, for most patients, they remained in the mild range (in terms of the 0 – 4 intensity scale) throughout the course of the study. The relative merits of using CPSR scores to evaluate clinically significant changes in GI symptoms are addressed in the discussion section.

**Table 6.**  
*Composite Primary Symptom Reduction Scores and Independent Samples t-test Result*

Dyads	GCBT	SMTC	
1	44.98	34.06	
2	71.04	24.92	
3	70.83	84.84	
4	-17.74	-13.57	
5	-16.11	23.61	
6	-43.33	-2.66	
7	-10.64	-22.96	
8	-11.08	3.31	
9	25.53	-13.64	
10	-36.01	21.44	
11	58.35	10.03	
12	-74.60	-43.96	
13	-44.96	21.30	
14	-100.00	23.69	
15	-42.14		
16	52.52		
17	-73.33		
18		4.79	
19		32.53	
20		-10.01	
21		2.70	
M (SD) =	-8.66 (53.86)	10.02 (28.02)	t(1, 33) = -1.276 p = 0.214

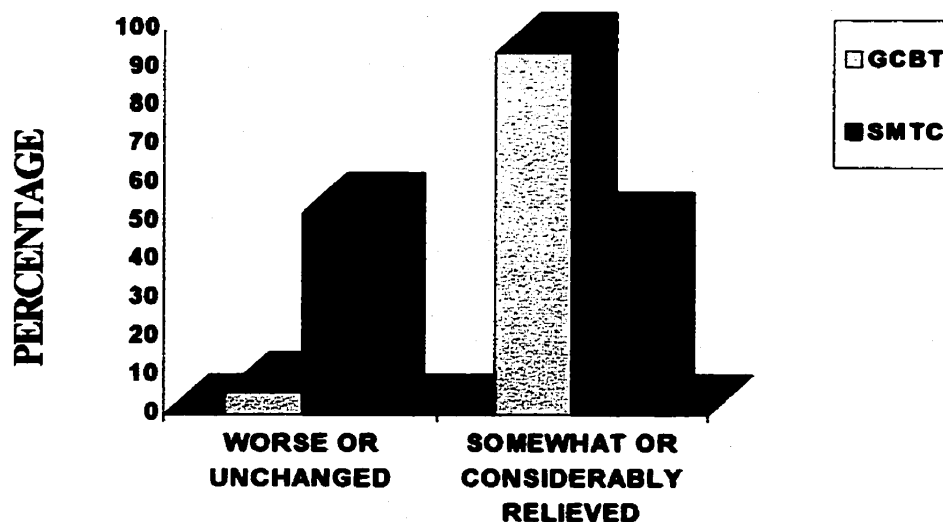
A summary of analyses conducted on the six individual GI symptoms is displayed in Table 7. There were no significant differences between the two conditions on change scores for individual GI symptoms. Mild symptom levels at baseline and large within group variability in daily symptom change scores likely washed out treatment effects based on group averages.

**Table 7.**  
*Means (Standard Deviations) and Independent Samples t-tests for Individual Gastrointestinal Symptoms*

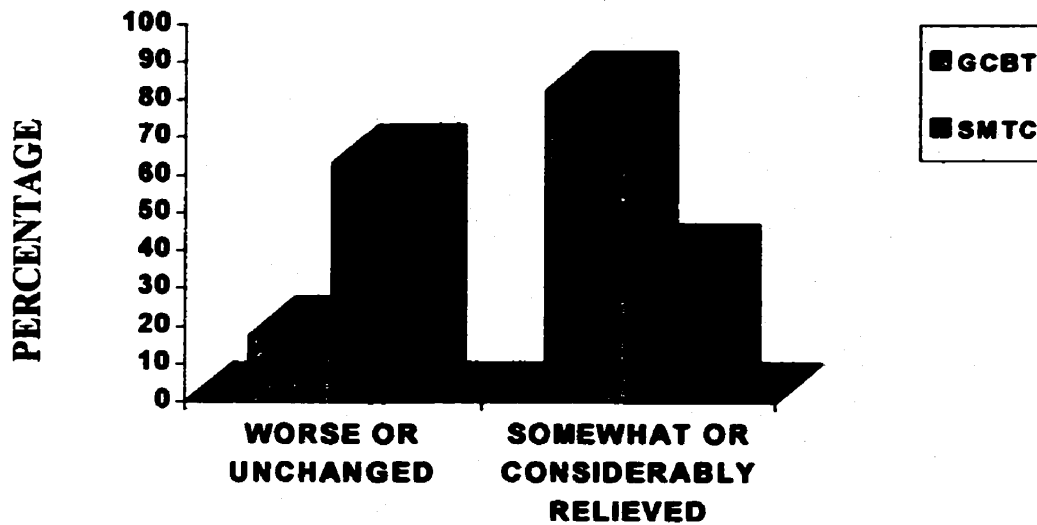
Gastrointestinal Symptoms	GCBT	SMTC	<i>t</i> (df)	<i>p</i> -value
<i>Pain</i>	-5.30 (70.33)	15.95 (51.89)	<i>t</i> (1, 33) = -1.02	0.32
<i>Diarrhea</i>	-23.24 (62.92)	-6.70 (48.82)	<i>t</i> (1, 28) = -0.81	0.43
<i>Constipation</i>	8.75 (56.75)	22.30 (53.45)	<i>t</i> (1, 17) = -0.53	0.60
<i>Bloating</i>	-13.66 (47.66)	4.36 (59.46)	<i>t</i> (1, 32) = -0.97	0.34
<i>Gas</i>	12.65 (43.29)	12.62 (47.64)	<i>t</i> (1, 33) = 0.00	0.99
<i>Nausea</i>	-7.50 (71.72)	16.31 (72.59)	<i>t</i> (1, 20) = -0.77	0.45

**Clinically significant change.** In order to assess clinically significant GI symptom reduction for each patient based on daily ratings, an a priori criterion of 50% symptom reduction was established. Subsequently, the two experimental groups were statistically compared on the proportion of individuals reaching this clinically significant standard of change. Four of 17 Group CBT patients (23.5%) vs. one of 18 SMTC patients (5.6%) met criteria for clinically significant GI symptom reduction. This difference was not statistically significant,  $X^2(1) = 2.31$ ,  $p = 0.129$ . For daily pain ratings, six of 17 Group CBT patients (35.3%) vs. four of 18 SMTC patients (22.2%) met criteria for clinically significant pain reduction. This difference was also not statistically significant,  $X^2(1) = 0.73$ ,  $p = 0.392$ .

**Post-treatment global ratings of GI symptom reduction.** At post-treatment, patients were asked to rate their overall GI symptoms and abdominal pain over the previous 4 weeks as compared to the same symptoms prior to beginning their respective treatments. The proportion of patients in each condition reporting that symptoms were worse than before or unchanged and somewhat or considerably relieved can be observed in Figure 4. Patients in the Group CBT condition reported experiencing more overall GI symptom relief than patients in the SMTC condition,  $\chi^2(1) = 9.241, p = 0.002$ . Similarly, for pain (as displayed in Figure 5), Group CBT patients reported experiencing more relief than patients in the SMTC condition,  $\chi^2(1) = 7.646, p = 0.006$ .



**Figure 4. POSTTREATMENT GLOBAL SYMPTOM REDUCTION RATINGS**



**Figure 5. POSTTREATMENT GLOBAL PAIN REDUCTION RATINGS**

**Psychological Functioning and Health-Related Quality of Life.** A multivariate analysis of variance (MANOVA) was conducted on pre- to post-treatment change scores for the CSFBD, BDI, STAI-T, AQ, SF-36 Physical Health Component Scale (PCS), and SF-36 Mental Health Component Scale (MCS). Patients in the Group CBT condition experienced significantly more improvement than SMTC patients on these measures of psychological functioning and health-related quality of life, *Hotelling's T* = 0.522,  $F(6, 29) = 2.522$ ,  $p = 0.044$ , *effect size* = 0.34. Follow-up univariate analyses (ANOVA's) revealed that improvements in bowel-related cognitive distress (24%) and assertiveness (12%) contributed significantly to the explained variance of the overall model (see Table 8).

**Table 8.**

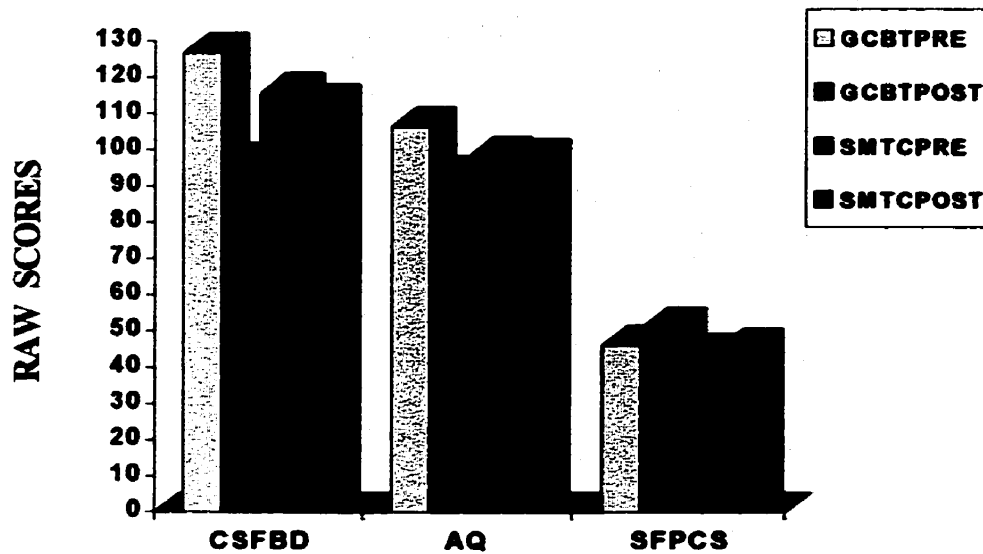
*Mean Change Scores and Univariate ANOVA's for Psychological/Health-Related Quality of Life Measures.*

Measure	GCBT	SMTC	F(df)	p-value	R <sup>2</sup>	Power
<i>CSFBD</i>	30.29 (29.65)	3.11 (20.27)	$F(1, 34) = 10.51$	<b>0.003</b>	0.24	0.88
<i>BDI</i>	5.71 (6.07)	2.84 (5.46)	$F(1, 34) = 2.22$	0.145	0.06	0.31
<i>STAI-T</i>	4.82 (5.73)	2.37 (5.40)	$F(1, 34) = 1.75$	0.194	0.05	0.25
<i>AQ</i>	13.71 (20.48)	0.58 (16.92)	$F(1, 34) = 4.43$	<b>0.043</b>	0.12	0.53
<i>SF36-PCS</i>	-4.65 (6.65)	-1.48 (5.92)	$F(1, 34) = 2.30$	0.138	0.06	0.31
<i>SF36-MCS</i>	-3.31 (9.81)	0.54 (8.66)	$F(1, 34) = 1.57$	0.219	0.04	0.23

Note: CSFBD = Cognitive Scale for Functional Bowel Disorders; BDI = Beck Depression Inventory; STAI-T = State Trait Anxiety Inventory – Trait Scale; AQ = Assertiveness Questionnaire; SF36-PCS = Medical Outcomes Short Form 36 Health Survey - Physical Health Component Scale; SF36-MCS = Medical Outcomes Short Form 36 Health Survey – Mental Health Component Scale

Group CBT patients, but not SMTC patients, also improved clinically, from the categories of mild to minimal depression on the BDI-II, above average to average generalized trait anxiety on the STAI-T, and below average to average overall mental health functioning on the SF36-MCS.

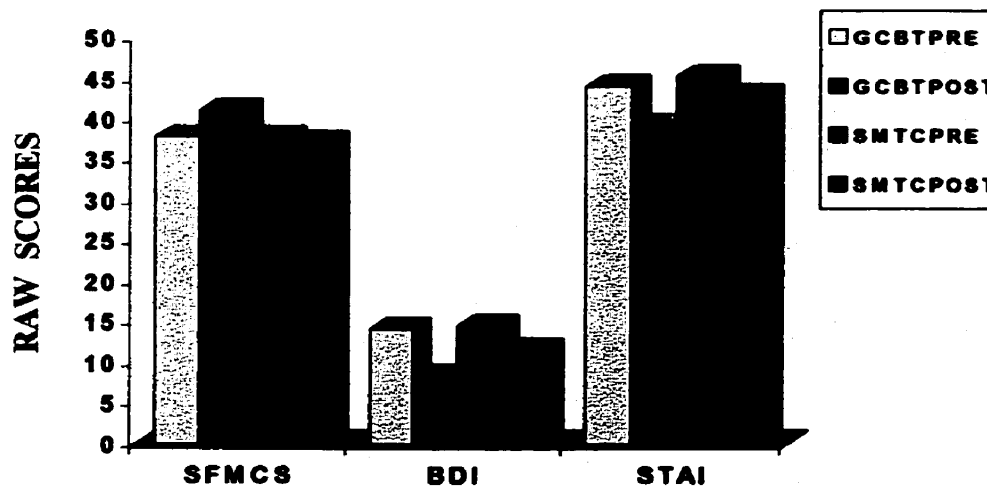
Figures 6 and 7 display the raw score means for these measures at baseline and post-treatment for the two conditions in order to present the interested reader with additional context to interpret the change scores depicted in Table 8.



**Figure 6. PSYCHOSOCIAL/HRQOL RAW SCORE MEANS**

Note: lower scores on the CSFBD and AQ indicate better adjustment.

Note: GCBT = Group CBT; SMTC = Symptom Monitoring with Telephone Contact; CSFBD = Cognitive Scale for Functional Bowel Disorders; AQ = Assertiveness Questionnaire; SFPCS = SF36 Physical Health Component Scale



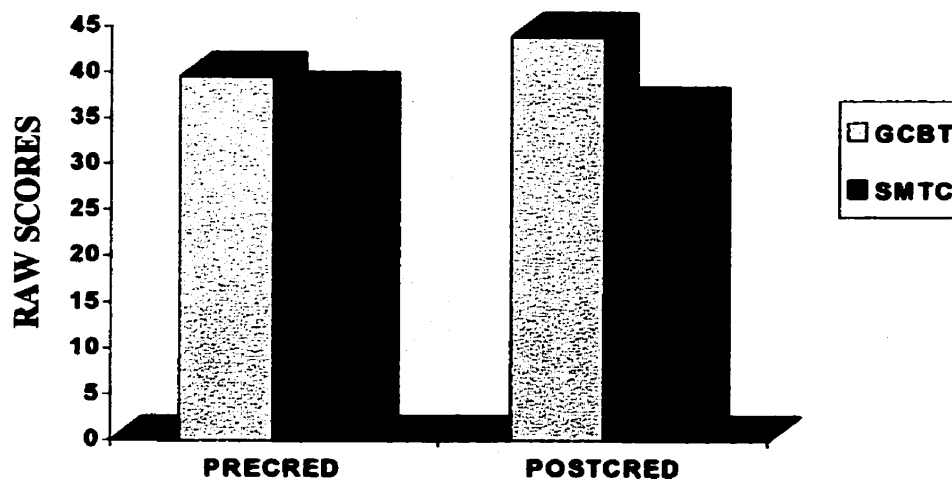
**Figure 7. PSYCHOSOCIAL/HRQOL RAW SCORE MEANS**

Note: lower scores on the BDI and STAI indicate better adjustment.

Note: GCBT = Group CBT; SMTC = Symptom Monitoring with Telephone Contact; SFMCS = SF36 Mental Health Scale; BDI = Beck Depression Inventory-II; STAI = State Trait Anxiety Inventory – Trait Scale

## Process Variables

**Treatment credibility.** Treatment credibility ratings at baseline did not differ significantly between the Group CBT ( $M = 39.53$ ) and SMTC ( $M = 37.42$ ) conditions,  $t(1, 34) = 0.814$ ,  $p = 0.42$ . Both groups endorsed relatively high levels of credibility for their respective treatments (Mean item scores: GCBT = 7.9/10; SMTC = 7.5/10). At post-treatment, the Group CBT patients ( $M = 43.82$ ) gave significantly higher ratings of credibility than did the SMTC patients ( $M = 35.84$ ),  $t(1, 34) = 2.72$ ,  $p = 0.01$ . Note however that this significant difference in credibility ratings at post-treatment was the result of Group CBT patients increasing their ratings as a result of treatment,  $t(16) = -4.29$ ,  $p = 0.009$ , whereas SMTC patients remained stable in their perceptions of credibility throughout,  $t(18) = 0.797$ ,  $p = 0.436$ , (see Figure 8).



**Figure 8. PRE- AND POST-TREATMENT CREDIBILITY MEANS**

**Treatment integrity.** Independent ratings of therapist adherence to the treatment protocol were made by two trained raters who listened to audiotape recordings of each Group CBT session. Cohen's *Kappa* coefficient, a measure of inter-rater reliability over and above what



would be predicted due to chance, was calculated for each of three waves of the study and averaged to give an overall index. Additionally, the percentage of the treatment protocol adhered to based on inter-rater agreement was also calculated. As can be viewed in Table 9, *Kappa* for the three waves ranged from 0.80 to 0.93, with an overall coefficient of 0.88. This is well within traditional standards for acceptable rates of inter-observer reliability. The percentage of the treatment protocol adhered to ranges from 86% to 96%, with an overall study percentage of 91%. Thus, it appears that the treatment protocol was adhered to within acceptable limits as outlined in the therapist treatment manual.

**Table 9.**

*Independent Ratings of Therapist Adherence to Protocol  
(Audiotape Analysis: 2 Trained Raters)*

***Cohen's Kappa Coefficient***

*Wave 1: Kappa = .93      Wave 2: Kappa = .80*

*Wave 3: Kappa = .90      Overall Kappa = .88*

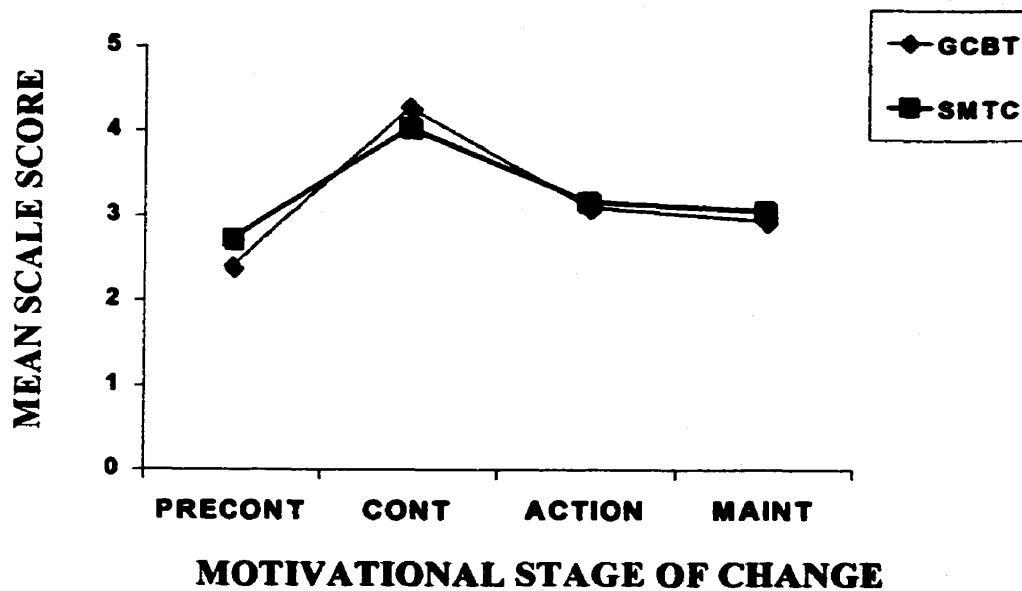
***Percentage of Treatment Protocol Adhered To***

*Wave 1: 96%                      Wave 2: 86%*

*Wave 3: 90%                      Overall: 91%*

**Motivational readiness for adopting a self-management approach**. Figure 9 depicts the results of the baseline analysis of motivational readiness for change as measured by the PSOCQ. Patients in the two treatment conditions did not significantly differ in their ratings of

motivational readiness for change,  $F(4, 31) = 2.243, p = 0.102$ . There was a significant stage of change effect as patients in both conditions rated items on the *Contemplation* scale ( $M = 4.17$ ) significantly higher than items on the *Precontemplation* ( $M = 2.56$ ), *Action* ( $M = 3.14$ ), or *Maintenance* ( $M = 3.00$ ) scales,  $F(3, 32) = 78.78, p < 0.0001$ , which did not differ significantly from each other. Since patients in both treatment conditions more strongly endorsed *Contemplation* scale items, this would suggest that they were more likely at this stage of readiness prior to the commencement of their respective treatments.

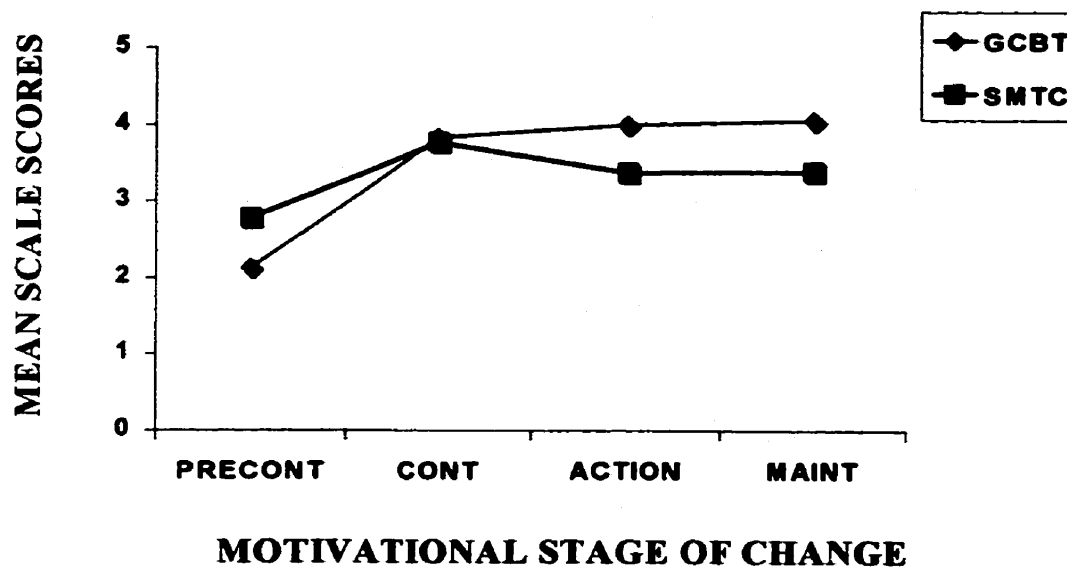


**Figure 9. PAIN STAGES OF CHANGE: PREINTERVENTION SCORES**

Note: Precont = Precontemplation Scale Score; Cont = Contemplation Scale Score; Action = Action Scale Score; Maint = Maintenance Scale Score

Figure 10 depicts the results of the post-treatment analysis of motivational readiness for change. There was a significant stage of change by treatment group interaction effect,  $F(3, 31) =$

3.85,  $p = 0.019$ . Group CBT patients had significantly lower *Precontemplation* ( $M = 2.13$ ), and significantly higher *Action* ( $M = 3.99$ ) and *Maintenance* ( $M = 4.06$ ) scale scores than patients in the SMTC condition ( $M$ 's = 2.79, 3.38, and 3.38, respectively),  $p$ 's = 0.002, 0.019, and 0.008. This suggests that Group CBT patients were less likely to be *Precontemplators* at post-treatment and more likely than SMTC patients to be actively working at IBS self-management and attempting to maintain any improvements they had already achieved.

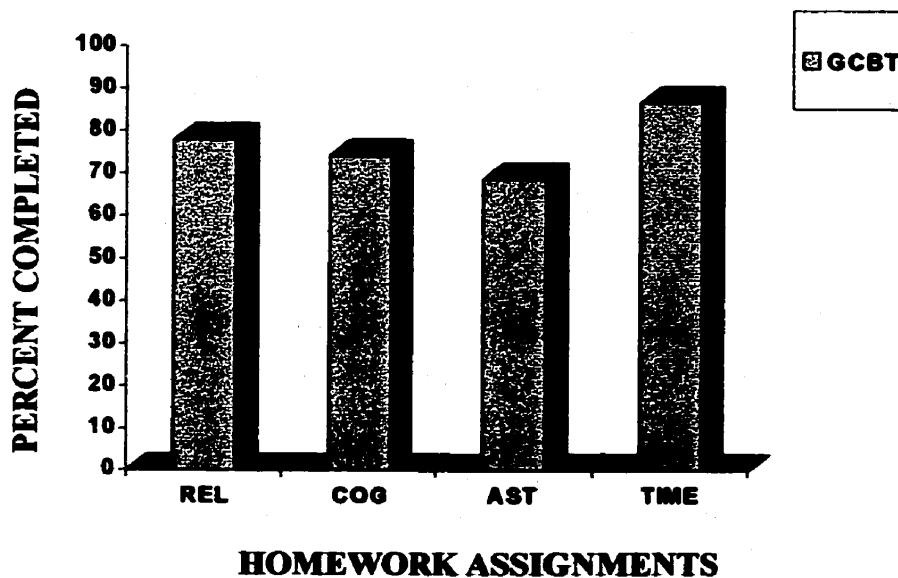


**Figure 10. PAIN STAGES OF CHANGE: POSTINTERVENTION SCORES**

Note: Precont = Precontemplation Scale Score; Cont = Contemplation Scale Score; Action = Action Scale Score; Maint = Maintenance Scale Score

**Treatment adherence.** Group CBT homework exercises were collected on a weekly basis and rated for degree of completion. Homework exercises were categorized according to the components of therapy (i. e., behavioral contracting/goal setting, relaxation training, cognitive retraining, assertion training, activity/time management, and relapse prevention). One point was

awarded for each completed element of an assigned weekly exercise. For example, if patients were asked to track one stress-provoking situation each day, then one point was awarded for each situation tracked. This score was then divided by the total number of elements possible for that week and converted to a percentage. Weekly totals for exercises that were repeated across weeks were added, averaged, and converted to percentages. Behavioral contracting/goal setting and relapse prevention exercises were both assigned as one time exercises in sessions two and nine, respectively. Relaxation training and assertion training were assigned over separate three-week periods. Cognitive retraining took place over six sessions. Activity/time management exercises were assigned for two sessions. The mean percentage of total homework completed was 78.28 (Range = 59.81% – 100%). The mean percentage of homework completed for each component of therapy can be observed in Figure 11.



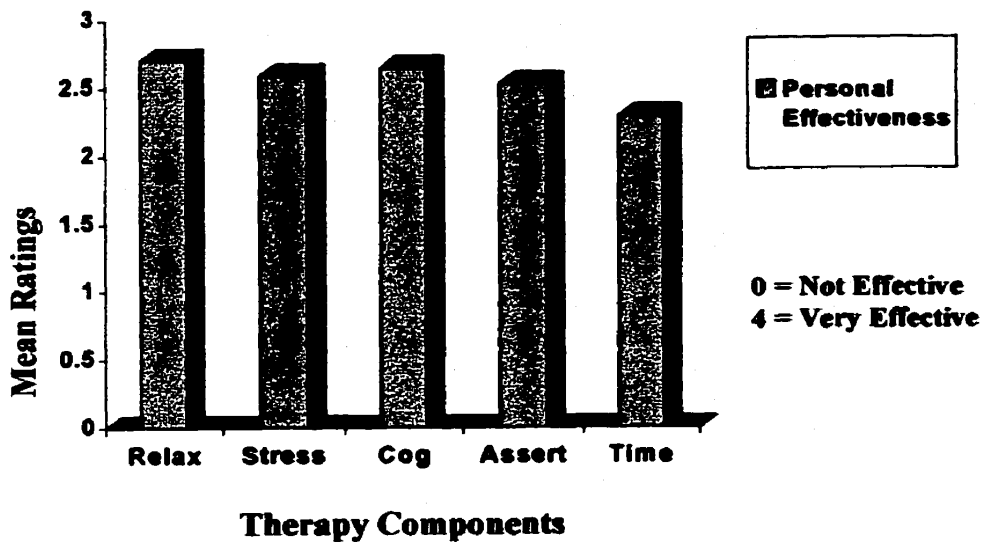
**Figure 11. HOMEWORK COMPLIANCE**

Note: REL = Relaxation Training; COG = Cognitive Therapy; AST = Assertiveness Training; TIME = Time Urgency Reduction Training

In a post-hoc analysis, a significant positive relationship emerged between the percentage of total homework completed and GI symptom reduction (CPSR),  $r(17) = 0.542, p = 0.024$ . A stepwise regression analysis testing the individual components of the group therapy yielded a predictive model ( $p = 0.009$ ) that explained 42% of the variance in GI symptom reduction (CPSR) and included the percentage of completed time urgency reduction homework,  $B = 0.506, SE = 0.331, p = 0.019$  and percentage of completed cognitive therapy homework,  $B = 0.502, SE = 0.383, p = 0.020$  as significant predictors.

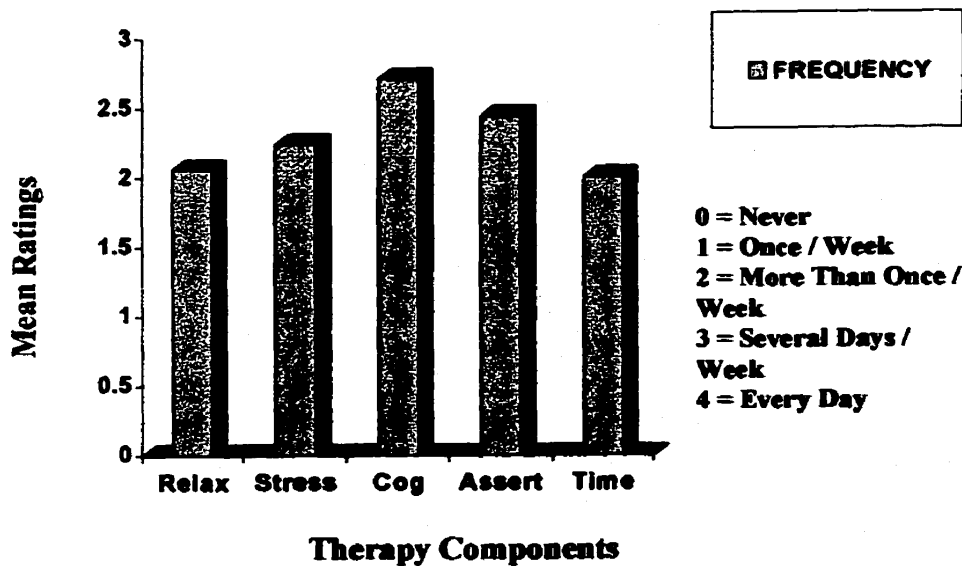
**Social validity.** Group CBT patient ratings of overall satisfaction with treatment on the CSQ-8 ( $M = 28.24, SD = 4.87, Range = 14 - 32$ ) fell in the average range when compared with a large standardization sample of therapy consumers ( $M = 27.09, SD = 4.01$ ) (Attkisson & Greenfield, 1994). On the Group Attitude Scale (GAS), Group CBT patients ( $M = 146.65, SD = 22.54$ ) reported a high degree of group satisfaction/cohesion (Mean item score = 7.3/9.0).

Group CBT patients' ratings of personal effectiveness with, frequency of use, and importance of individual therapy components are presented in Figures 12 - 14. At post-treatment, patients' mean ratings of personal effectiveness fell between being somewhat effective and effective for all components of therapy with highest to lowest orderings of relaxation, stress monitoring and cognitive retraining (tied), assertion, and time management. Patients' mean frequency-of-use ratings fell between two and five days per week for all components with most frequent to least frequent orderings of cognitive retraining, assertion, stress monitoring, relaxation, and time management. Patients' mean ratings of importance fell between somewhat important and very important for all components with highest to lowest orderings of cognitive retraining, stress monitoring, assertion, relaxation, and time management.



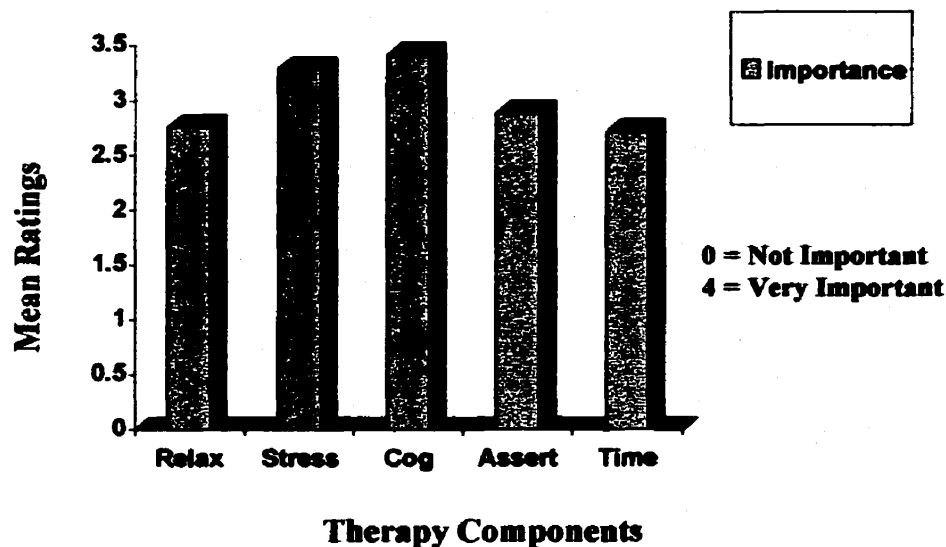
**Figure 12. How Effective are You at Using these Coping Strategies?**

Note: Relax = Relaxation Training; Stress = Stress Monitoring; Cog = Cognitive Therapy; Assert = Assertiveness Training; Time = Time Urgency Reduction Training



**Figure 13. How Often do You use these Coping Strategies?**

Note: Relax = Relaxation Training; Stress = Stress Monitoring; Cog = Cognitive Therapy; Assert = Assertiveness Training; Time = Time Urgency Reduction Training



**Figure 14. How Important are these Strategies for Coping with IBS?**

Note: Relax = Relaxation Training; Stress = Stress Monitoring; Cog = Cognitive Therapy; Assert = Assertiveness Training; Time = Time Urgency Reduction Training

At three-month follow up, patients' ratings of personal effectiveness were similar except for a reversal of ratings for relaxation and assertion. Ratings of frequency reduced to between once and several days per week for all components with time management becoming more frequent than relaxation. Ratings of importance increased overall with relative importance of components being rated precisely as they were at post-treatment.

**Medication use.** At the post-treatment assessment of changes in prescription medication use, for the Group CBT condition ( $n = 17$ ), two patients (11.8%) reported an increase, and two patients (11.8%) a decrease, in usage during the course of treatment. No patient in the SMTC condition ( $n = 18$ ; 1 did not report) reported any changes from baseline in level of prescription medication usage. This difference between conditions was not statistically significant,  $X^2 = 4.78$ ,  $p = 0.092$ . In assessing for changes in use of nonprescription medication, for the Group CBT

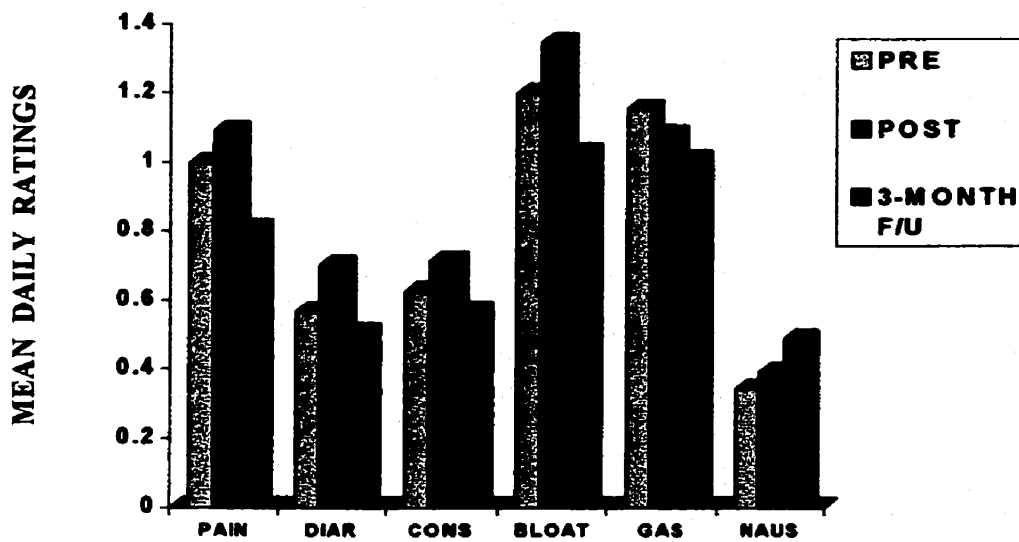
condition (n = 17), one patient (5.9%) reported an increase, and three patients (17.6%) a decrease, in usage during treatment. Four patients (22.2%) in the SMTC condition (n = 18; 1 did not report) reported a decrease in nonprescription medication usage. This difference between conditions was not statistically significant,  $X^2 = 1.152, p = 0.562$ .

At the three-month follow-up assessment, 15 of the original 17 Group CBT patients provided data on prescription medication use, while only 14 did so for nonprescription medication use. One Group CBT patient (6.7%) reported an increase in prescription medication use, and one a decrease (6.7%), from the level reported at post-treatment assessment. One of the 14 patients (7.1%) reporting on nonprescription medication use indicated an increase from the level reported at post-treatment.

### **Three Month Follow-up Study**

Follow-up analyses consisted of multiple one-way repeated measures designs of pre-, post-, and 3-month follow-up scores for gastrointestinal symptoms, psychological measures, and health-related quality of life for patients treated with multicomponent cognitive-behavioral group therapy. Of the original 17 patients, 16 responded and provided data. The pre-, post-, and three-month follow-up GI symptom ratings are depicted in Figures 15 and 16. There were no significant reductions in daily ratings of GI symptoms over the three measurement periods. However, at three-month follow-up, mean daily ratings for all symptoms, except nausea, were slightly lower than those made at baseline. It should also be again noted that, while GI symptom levels fluctuated somewhat, they remained in the mild range (in terms of the 0 – 4 intensity scale) throughout the course of the study.

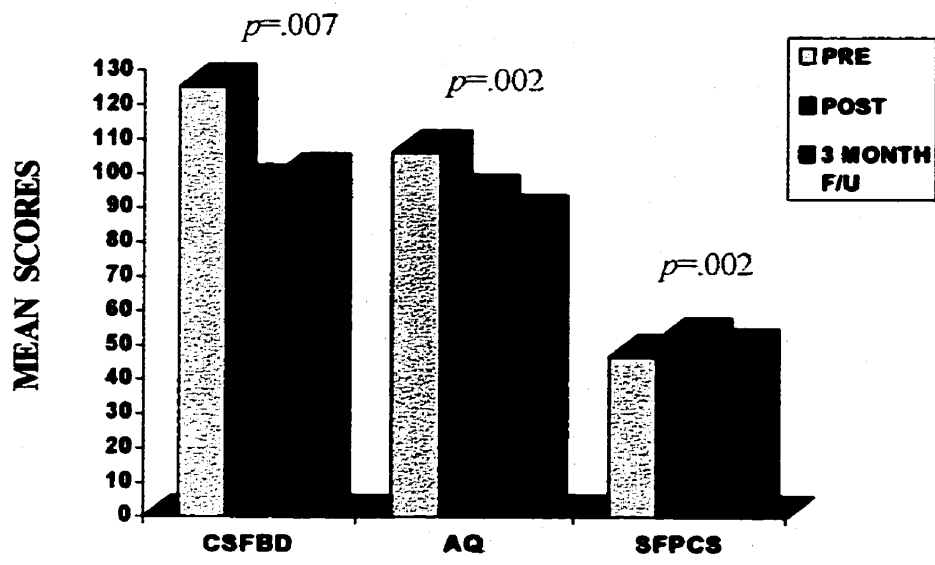




**Figure 16. MEAN DAILY RATINGS OF GI SYMPTOMS FOR GROUP CBT AT BASELINE, POST-TREATMENT, AND 3-MONTH FOLLOW-UP**

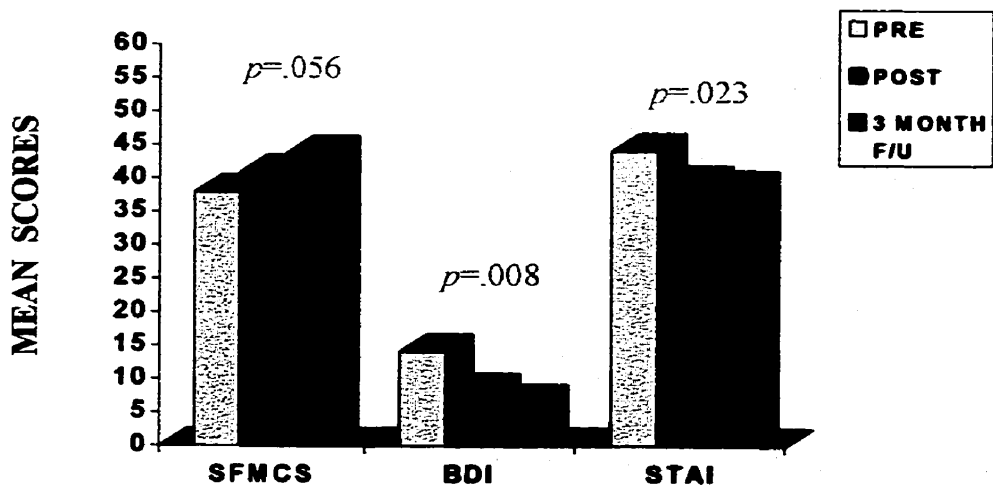
Note: DIAR = Diarrhea; CONS = Constipation; BLOAT = Bloating; NAUS = Nausea

Three-month follow-up data for measures of psychological functioning and health-related quality of life are shown in Figures 17 and 18. In general, Group CBT patients had significantly improved scores at the post-treatment assessment on all measures but overall mental health functioning (SF-36 MCS). Group CBT patients remained improved on all measures at the three-month follow-up assessment.



**Figure 17. MEAN SCORES ON PSYCHOLOGICAL/HRQOL MEASURES FOR GROUP CBT AT 3-MONTH FOLLOW-UP**

Note: CSFBD = Cognitive Scale for Functional Bowel Disorders; AQ = Assertiveness Questionnaire; SFPCS = SF36 Physical Health Component Scale



**Figure 18. MEAN SCORES ON PSYCHOLOGICAL/HRQOL MEASURES FOR GROUP CBT AT 3-MONTH FOLLOW-UP**

Note: SFMCS = SF36 Mental Health Component Scale; BDI = Beck Depression Inventory-II; STAI = State Trait Anxiety Inventory-Trait Scale

**Appendix 6**

**IBS Daily Symptom Monitoring Diary**

## Symptom Diary

ID#: \_\_\_\_\_

Week#: \_\_\_\_\_

Dates: \_\_\_\_\_

**Rating:**

0=symptom absent, not a problem

1=mild severity and distress

2=moderate severity and distress

3=intense severity and distress

4=incapacitating severity and distress

	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
Abdominal Pain							
Diarrhea*							
Constipation*							
Bloating*							
Belching/Flatus* (gas)							
Nausea*							
Other* (        )							

Number of daily bowel movements (record #)							
--	--	--	--	--	--	--	--

**Symptom Definitions \*:**

Diarrhea - stools mushy or watery, urgent, more frequent bowel movements (several times in a day)

Constipation - stools lumpy or hard lumps, straining to evacuate, infrequent bowel movements

Bloating - feeling of abdominal distension or fullness

Belching/Flatus - releasing gas from mouth or rectum

Nausea - a sensation of needing to vomit

Other - please describe in space above

**Appendix 7****Self-Report Instruments of Psychological Functioning and Health-Related Quality of Life**

1. **Medical Outcomes Short-Form 36 Health Survey**
2. **Cognitive Scale for Functional Bowel Disorders**
3. **Beck Depression Inventory – 2<sup>nd</sup> Edition**
4. **State Trait Anxiety Inventory – Trait Scale**
5. **Assertiveness Questionnaire**

## PART B: GENERAL HEALTH SURVEY

**Instructions:** This survey asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities. Answer every question by marking the answer as indicated. If you are unsure about how to answer a question, please give the best answer you can.

1. In general, would you say that your health is: **(Circle one)**

1	2	3	4	5
<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Poor</b>

2. *Compared to one year ago*, how would you rate your health in general *now*? **(Circle one)**

1	<b>Much better now than one year ago</b>
2	<b>Somewhat better now than one year ago</b>
3	<b>About the same now as one year ago</b>
4	<b>Somewhat worse now than one year ago</b>
5	<b>Much worse now than one year ago</b>

3. The following items are about activities you might do during a typical day. Does *your health* now limit you in these activities? If so, how much? **(Circle one number on each line)**

	Yes Limited A Lot	Yes Limited A Little	No, Not Limited At All
a. <b>Vigorous activities</b> , such as running, lifting heavy objects, participating in strenuous sports	1	2	3
b. <b>Moderate activities</b> , such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	1	2	3
c. Lifting or carrying groceries	1	2	3
d. Climbing <b>several</b> flights of stairs	1	2	3
e. Climbing <b>one</b> flight of stairs	1	2	3
f. Bending, kneeling, or stooping	1	2	3
g. Walking <b>more than a mile</b>	1	2	3
h. Walking <b>several blocks</b>	1	2	3
i. Walking <b>one block</b>	1	2	3
j. Bathing or dressing yourself	1	2	3

4. During the *past 4 weeks*, have you had any of the following problems with your work or other regular daily activities as a result of your *physical health*? (Circle one number on each line)

	Yes	No
a. Cut down on the <b>amount of time</b> you spent on work or other activities	1	2
b. <b>Accomplished less</b> than you would like	1	2
c. Were limited in the <b>kind</b> of work or other activities	1	2
d. Had <b>difficulty</b> performing the work or other activities (for example, it took extra effort)	1	2

---

5. During the *past 4 weeks*, have you had any of the following problems with your work or other regular activities as a result of any *emotional problems* (such as feeling depressed or anxious)? (Circle one number on each line)

	Yes	No
a. Cut down on the <b>amount of time</b> you spent on work or other activities	1	2
b. <b>Accomplished less</b> than you would like	1	2
c. Didn't do work or other activities as <b>carefully</b> as usual	1	2

---

6. During the *past 4 weeks*, to what extent has your *physical health or emotional problems* interfered with your normal social activities with family, friends, neighbours, or groups? (Circle one)

1                      2                      3                      4                      5  
Not at All          Slightly          Moderately      Quite a Bit      Extremely

---

7. How much *bodily pain* have you had during the *past 4 weeks*? (Circle one)

1                      2                      3                      4                      5                      6  
None              Very Mild          Mild              Moderate          Severe              Very Severe

---

8. During the *past 4 weeks*, how much did *pain* interfere with your normal work (including both work outside the home and housework)? (Circle one)

1                      2                      3                      4                      5  
Not at All          A Little Bit      Moderately      Quite a Bit      Extremely

---

9. These questions are about how you feel and how things have been with you *during the past 4 weeks*. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the *past 4 weeks*: (Circle one number on each line)

	All of the Time	Most of the Time	A Good Bit of the Time	Some of the Time	A Little of the Time	None of the Time
a. Did you feel full of pep?	1	2	3	4	5	6
b. Have you been a very nervous person?	1	2	3	4	5	6
c. Have you felt so down in the dumps that nothing could cheer you up?	1	2	3	4	5	6
d. Have you felt calm and peaceful?	1	2	3	4	5	6
e. Did you have a lot of energy?	1	2	3	4	5	6
f. Have you felt downhearted and blue?	1	2	3	4	5	6
g. Did you feel worn out?	1	2	3	4	5	6
h. Have you been a happy person?	1	2	3	4	5	6
i. Did you feel tired?	1	2	3	4	5	6

10. During the *past 4 weeks*, how much of the time has your *physical health or emotional problems* interfered with your social activities (like visiting with friends, relatives, etc.)? (Circle one)

1	2	3	4	5
All of the Time	Most of the Time	Some of the Time	A Little of Time	None of the Time

11. How TRUE or FALSE is *each* of the following statements for you? (Circle one number on each line)

	Definitely True	Mostly True	Don't Know	Mostly False	Definitely False
a. I seem to get sick a little easier than other people	1	2	3	4	5
b. I am as healthy as anybody I know	1	2	3	4	5
c. I expect my health to get worse	1	2	3	4	5
d. My health is excellent	1	2	3	4	5



## PART E: SELF-EVALUATION QUESTIONNAIRE

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the number which best reflects how you generally feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

	Almost Never	Sometimes	Often	Almost Always
1. I feel pleasant	1	2	3	4
2. I feel nervous and restless	1	2	3	4
3. I feel satisfied with myself	1	2	3	4
4. I wish I could be as happy as others seem to be	1	2	3	4
5. I feel like a failure	1	2	3	4
6. I feel rested	1	2	3	4
7. I am "calm, cool, and collected"	1	2	3	4
8. I feel that difficulties are piling up so that I cannot overcome them	1	2	3	4
9. I worry too much over something that really doesn't matter	1	2	3	4
10. I am happy	1	2	3	4
11. I have disturbing thoughts	1	2	3	4
12. I lack self-confidence	1	2	3	4
13. I feel secure	1	2	3	4
14. I make decisions easily	1	2	3	4
15. I feel inadequate	1	2	3	4
16. I am content	1	2	3	4
17. Some unimportant thought runs through my mind and bothers me	1	2	3	4
18. I take disappointments so keenly that I can't put them out of my mind	1	2	3	4
19. I am a steady person	1	2	3	4
20. I get in a state of tension or turmoil as I think over my recent concerns and interests	1	2	3	4

## PART G: COMMUNICATING EFFECTIVELY

The following questions are designed to help you identify how you currently feel when attempting to communicate your needs in certain situations, to certain people, and for achieving certain positive outcomes. For each item, circle the number that best reflects your current level of discomfort when communicating your needs using the following scale:

- 1 = Comfortable**
- 2 = Mildly Uncomfortable**
- 3 = Moderately Uncomfortable**
- 4 = Very Uncomfortable**
- 5 = Unbearably Threatening**

---

*Rate your current level of discomfort in the following situations*

---

1. Asking for help	1	2	3	4	5
2. Stating a difference of opinion	1	2	3	4	5
3. Receiving and expressing negative feelings	1	2	3	4	5
4. Receiving and expressing positive feelings	1	2	3	4	5
5. Dealing with someone who refuses to cooperate	1	2	3	4	5
6. Speaking up about something that annoys you	1	2	3	4	5
7. Talking when all eyes are on you	1	2	3	4	5
8. Protesting a rip-off	1	2	3	4	5
9. Saying "No"	1	2	3	4	5
10. Responding to undeserved criticism	1	2	3	4	5
11. Making requests of authority figures	1	2	3	4	5
12. Negotiating for something you want	1	2	3	4	5
13. Having to take charge	1	2	3	4	5
14. Asking for cooperation	1	2	3	4	5
15. Proposing an idea	1	2	3	4	5
16. Taking charge	1	2	3	4	5

- 1 = Comfortable**  
**2 = Mildly Uncomfortable**  
**3 = Moderately Uncomfortable**  
**4 = Very Uncomfortable**  
**5 = Unbearably Threatening**

---

*Rate your current level of discomfort in the following situations (Continued)*

---

17. Asking questions	1	2	3	4	5
18. Dealing with attempts to make you feel guilty	1	2	3	4	5
19. Asking for service	1	2	3	4	5
20. Asking for a date or appointment	1	2	3	4	5
21. Asking for favours	1	2	3	4	5
22. Other: _____	1	2	3	4	5

---

*Rate your current level of discomfort in communicating your needs to the following people*

---

23. Parents	1	2	3	4	5
24. Fellow workers or classmates	1	2	3	4	5
25. Strangers	1	2	3	4	5
26. Old friends	1	2	3	4	5
27. Spouse or mate	1	2	3	4	5
28. Employer	1	2	3	4	5
29. Relatives	1	2	3	4	5
30. Children	1	2	3	4	5
31. Acquaintances	1	2	3	4	5
32. Sales people, clerks, hired help	1	2	3	4	5
33. More than two or three people in a group	1	2	3	4	5
34. Other: _____	1	2	3	4	5

- 1 = Comfortable**  
**2 = Mildly Uncomfortable**  
**3 = Moderately Uncomfortable**  
**4 = Very Uncomfortable**  
**5 = Unbearably Threatening**

---

*Rate your current level of discomfort when attempting to achieve the following positive outcomes*

---

35. Approval for things that you have done well	1	2	3	4	5
36. To get help with certain tasks	1	2	3	4	5
37. More attention time with your mate	1	2	3	4	5
38. To be listened to and understood	1	2	3	4	5
39. To make boring/frustrating situations more satisfying	1	2	3	4	5
40. To not have to be nice all the time	1	2	3	4	5
41. Confidence in speaking up when something is important to you	1	2	3	4	5
42. Greater comfort with strangers, store clerks, mechanics, etc.	1	2	3	4	5
43. Confidence in asking for contact with people you find attractive	1	2	3	4	5
44. To get a new job, ask for interviews, raises, and so on	1	2	3	4	5
45. Comfort with people who supervise you, or work under you	1	2	3	4	5
46. To not feel angry and bitter a lot of the time	1	2	3	4	5
47. To overcome a feeling of helplessness and the sense that nothing ever really changes	1	2	3	4	5
48. To initiate satisfying sexual experiences	1	2	3	4	5
49. To do something totally different and novel	1	2	3	4	5
50. To have time by yourself	1	2	3	4	5
51. To do things that are fun or relaxing for you	1	2	3	4	5
52. Other: _____	1	2	3	4	5

## **Appendix 8**

- 1. Overview of Cognitive-Behavioral Group Therapy Protocol**
- 2. Session-by-Session Therapist Treatment Manual**

## IBS MULTICOMPONENT COGNITIVE-BEHAVIORAL TREATMENT PROTOCOL

Weeks	Sessions	Treatment Component	Homework	Session Collected
1	1	Introductions + Education Re: Myths + Biopsychosocial Model of IBS/Gate Control Theory	Reading	
	2	Impact of IBS on Patients + CBT Stress Management + Goal Setting/Behavioral Contracting	Reading + Behavioral Contract	3
2	3	Review Homework + Relaxed Breathing + Stress Tracking: Situations-Emotions-Thoughts-Outcome	Breathing + Stress Tracker 1 + Relaxation Log (1)	4
3	4	Review Homework + PMR + Thought Restructuring	PMR + Stress Tracker 2 (1) + Relaxation Log (2)	5
4	5	Review Homework + Imagery Relaxation + Thought Restructuring	Imagery Relaxation + Stress Tracker 2 (2) + Relaxation Log (3)	6
5	6	Review Homework + Assertion Training: Interpersonal Stress, Rights and Responsibilities, and Assertive Responding + Thought Restructuring	Applied Relaxation + Assertive Responding Exercise + Stress Tracker 2 (3)	7
6	7	Review Homework + Assertion: Communication Skills/ Assertion Techniques + Thought Restructuring	Applied Relaxation + Interpersonal Stress Tracker (1)	8
7	8	Review Homework + Assertion: Time/Activity Management + Thought Restructuring	Applied Relaxation + Interpersonal Stress Tracker (2) + Time Pathology Drills (1)	9
8	9	Review Homework + Review Program Skills + Relapse Prevention Planning	Time Pathology Drills (2) + Review All Coping Skills + Prepare Relapse Prevention Plan for High Risk Situations	10
9	10	Review Applied Skills + Relapse Prevention Plans		

## COGNITIVE-BEHAVIORAL GROUP THERAPY PROTOCOL FOR IBS

### SESSION 1

1. **Collect Symptom Diaries Weeks 1 and 2**
2. Therapists introduce themselves and describe their roles in the group. **(5 minutes)**
3. **Warm-up Exercise:** patients are asked to pair off with another group member and spend 10 minutes becoming acquainted (e.g., name, occupation, hobbies, etc.) After 10 minutes, patients return to the group and introduce their partners rather than themselves. **(15 minutes)**
4. Discuss general **group rules and expectations** (i.e., confidentiality, importance of attending sessions, arriving on time, importance of completing weekly exercises) **(Refer to Information Sheet Mailed Out to Patients) (5 minutes)**
5. **Review Symptom Monitoring Homework To Date (5 minutes)**  
(i.e., Any questions; problems)
6. Present basic **format for group sessions** (e.g., education/topic, discussion of previous week's exercises, practice new coping strategies) **(5 minutes)**
7. Present and discuss **myths and facts about IBS and Behavior Therapy (20 minutes)**  
**(Distribute and Refer to Handout)**  
**Myth 1: No Identified Pathology = Trivial Symptoms**  
**Fact 1: IBS Symptoms Seriously Compromise Quality of Life**  
**Myth 2: No Identified Pathology = Imagined Symptoms**  
**Fact 2: Real Symptoms due to Altered Motility and Hypersensitivity**  
**Myth 3: Stress is a Major Cause of IBS**  
**Fact 3: Stress is Only One of Several Important Factors Including Diet, Hormones, and Neurotransmitters (Brain Chemistry)**  
**Myth 4: Seeing a Psychologist = Psychiatric Disorder**  
**Fact 4: IBS is Not a Psychiatric Illness According to the Biopsychosocial Model**
8. Presentation of **Biopsychosocial Model of IBS (25 minutes)**  
(i.e., **Drossman Schematic Model: Genetic Predisposition + Early Life Environment, Motility and Sensitivity Research Findings, Psychosocial Factors, GI Symptoms, Effects on Behavior and Quality of Life**  
**(Handout)**
  - a) **Genetics and Early Life Experiences: No Firm Evidence But Both Seem to be Important**
  - b) **What's Happening in the Gut? (Bowel Motility and Sensitivity)**

- c) **What Role do Psychosocial Factors Play in IBS? (Concept of Triggers and Barriers to Recovery: Chronic Stressors/Situational Stressors/Thoughts/Feelings/Responsibilities/Coping Skills/Lack of Social Support)**
  - d) **How do Psychosocial Factors Influence and Interact with Physiological Symptoms? (CNS-ENS Axis) (Thoughts-Feelings -- Gut Physiology) (Diagrams) (eg., Almy Study of Medical Student Volunteer)**
9. **Gate Control Model of Pain (Diagrams) Concept of "Pain Gates" in the Dorsal Horn of the Spinal Cord that can be Opened or Closed depending on Internal (Type of Injury, Thoughts, Feelings, Muscle Tension) and External (Behavior, Environment, Medication, Physical Therapy) Factors (10 minutes)**

## SESSION 2

- 1 **Review Readings and Answer Questions from Session 1 (10 minutes)**
- 2 **What is the Impact of IBS on Behavior / Physical Symptoms / Thoughts and Feelings? (Adaptation Model) (Use Whiteboard to record patient examples) (20 minutes)**
- 3 **Stress Management for IBS (25 minutes)**
- a) **Why is Stress Management Important for IBS? (IBS is a source of stress and leads to physiological arousal) (Stressful circumstances create physiological arousal which makes IBS worse)**
  - b) **What is the Stress Response? (Physiological arousal to perceived threat that creates wear and tear on body systems if prolonged and sufficient recovery does not take place) (Diagram of Sympathetic and Parasympathetic Systems)**
  - c) **What is the Association Between Thoughts, Feelings, and IBS? (Thinking = Cerebral Cortex) (Emotions = Limbic System) (Hypothalamus receives input from Cortex or Thoughts and Limbic System or Feelings) (Hypothalamus controls pituitary gland responsible for stress hormone secretion activating sympathetic nervous system and recovery from stress response by activating parasympathetic nervous system)**

**Mind-Body Interaction Example:** At an important social gathering you experience minor bowel cramping and the need to pass some gas. Sensations travels up the spinal cord to the hypothalamus. You think, "Why now? If this keeps up, I'll have to leave. I wonder if there is a restroom close by? Why did I even bother to come? I knew this would happen." You feel embarrassed, angry, or maybe sad. You then think, "What if I don't make it to the restroom on time"?, which causes you to feel afraid. The fear sends out a stress alarm via the hypothalamus, which in turn increases your muscle tension and further alters the contractile activity in your hypersensitive bowel causing more discomfort. You then decide that, to avoid an embarrassing situation, you'd better leave. To avoid experiencing these negative feelings again in the short-



term, you become reluctant to attend similar social functions in the future, which later makes you feel more isolated, anxious, angry, or depressed in the long-term.

- 4) **Present Schematic of Cognitive-Behavioral Model of IBS** (10 minutes)  
 Emphasize how Situational and Chronic Stressors and Ineffective Coping Responses, and Dietary Factors, can all Contribute to GI Symptoms. Transient Symptoms lead to Troublesome Thoughts and Emotions that Contribute by Exacerbating and Maintaining IBS as a Chronic Problem.
- 5) **Overview of CBT Approach and Importance of Home Practice** (5 minutes)
- a) Goal Setting
  - b) Awareness Through Stress Tracking
  - c) Relaxation Training
  - d) Cognitive Restructuring
  - e) Interpersonal Stress Management
  - f) Time Management
  - g) Relapse Prevention
- 6) **Goal Setting and Behavioral Contracting** (30 minutes)
- a) Identifying general areas for improvement
  - b) **Goal Setting Guidelines**
    - i) Set goals that target what you want to do, not what you don't want to do
    - ii) A goal should be behavioral and specific
    - iii) A goal should be realistic
    - iv) A goal should be measurable
    - v) Set process-oriented goals rather than outcome-oriented goals
    - vi) A goal should be desirable
  - c) **Behavioral Contracting**
    - i) Commitment
    - ii) Lettings others know helps you to stick to your plan
    - iii) Review Sample IBS Self-Management Contract

**Homework: IBS Self-Management Contract**

### SESSION 3

1. Review patient behavioral contracts and questions about readings (30 minutes)
- (Collect: **Behavioral Contracts**  
**Symptom Diaries Week 3**)

2. **Rationale for Relaxation Therapy (Reading) (15 minutes)**
- a) *Goal: "Relaxation Response"*
  - b) *Activate Parasympathetic System to Recuperate after Stress Response*
  - c) *Practice 15-20 minutes, twice daily*
  - d) *Takes regular practice to make it automatic - like brushing teeth or driving a car*
  - e) **Difficulties and Suggestions**

*"I am too tense to relax"*  
*"I don't like the feelings of relaxation"*  
*"I feel guilty wasting so much time"*  
*"I can't find the place or the time"*  
*"I'm not getting anything out of this"*  
*"My mind wanders"*  
*"It feels unnatural"*

3. **Relaxation Practice Log Rating, Relaxed Abdominal Breathing Exercise (15 minutes) and Discussion**  
 Emphasize Role of Breathing in the Regulation of Tension and Anxiety, Slowing Rate of Breathing, Breathing in through Nose and out through Mouth, Hands on Upper Chest and Abdomen, Inhale to the Count of 4 to Inflate "Balloon" 1-inch, Exhale Completely to the Count of 6 to Deflate, When Inhaling think, "Breathe In", when Exhaling think, "Relax".  
**(Home Relaxation Practice Log)**
4. **Training in Stress Tracking (Stress Tracker 1) (30 minutes)**
- a) **Identifying Stressful Situations (usually Daily Hassles), Emotional Reactions (e.g., Anxiety, Anger, Embarrassment, Guilt, Sadness), Thoughts, and Outcome**
  - b) **Use a Patient-Generated Example (Use Imagery-Guided Recall if necessary)**
  - c) **Instructions for filling out Stress Tracker 1**
  - d) **Example of Stress Tracker 1**
  - e) **Fill Out Tracker for at least 1 Stressful Situation and Emotions, Thoughts, and Outcomes Each Day Until Next Session**

**Weekly Assignments:**                    **Relaxation Log (1) for Relaxed Breathing Practice**  
**(Due Next Session)**                    **Stress Tracker 1 (1)**  
    **Symptom Diary Week 4**

#### SESSION 4

- 1. **Collect Symptom Diaries Week 4**
- 2. **Review Relaxed Breathing Practice (10 minutes)**  
**(Collect Relaxation Log (1))**

3. **Introduce and Practice Progressive Muscle Relaxation (PMR) (30 minutes)**  
**Emphasize: practice initially in a controlled environment free of distractions, alternate tensing and releasing of 16 muscle groups, deliberately tensing increases awareness of tension in individual muscle groups that we often don't realize is present and enhances feelings of relaxation upon release, notice contrast between tension and relaxation, "let go" of tension and just let relaxation happen**  
**Cautions: Reduce deliberate tensing in painful areas, stop momentarily if you become frightened and start again later, set realistic expectations for initial success**  
**(Handout Home Practice Relaxation Log (2))**
4. **Review Stress Tracker 1 Exercise (30 minutes)**  
**(Solicit Participation from all Patients)**
5. **Introduce Cognitive Restructuring (20 minutes)**
  - a) **Cognitive Interpretations of Events Determine Emotional and Physical Reactions to Events**
  - b) **Positive Thinking is Not the Solution**
  - c) **Automatic Thoughts – reactive thinking, often spontaneous not involving rational or logical processes**
  - d) **Identifying Automatic Thoughts (Imaginal Reconstruction and Questioning)**
  - e) **Finding Alternative Evidence (Questioning Automatic Thoughts using past experience and realistic probabilities of outcomes)**
  - f) **Composing Alternative (Balanced) Thoughts**
  - g) **Illustrate Using a Few Patient-Generated Examples from Stress Tracker 1**  
**(Collect Stress Tracker 1)**  
**(Handout Stress Tracker 2 (1) and Stress Tracker 2 Example)**

**Weekly Exercises:                      Relaxation Practice Log (2)**  
**(Due Next Session)                    Stress Tracker 2 (1)**  
**Symptom Diary Week 5**

### **SESSION 5**

1. **Collect Symptom Diaries Week 5 and any other outstanding exercises**
2. **Review Progressive Muscle Relaxation (PMR) Practice (15 minutes)**  
**(Collect Relaxation Log 2)**
3. **Introduce and Practice Imaginal Relaxation (30 minutes)**  
**Emphasize: Finding one's own peaceful scene, using all senses in addition to visual sense, typical scenes involve "a trip to the beach" or forest scene but should be**



Solicit patient examples from the past week and work through them on the board

**(Collect Stress Tracker 2 (2))**

5. Introduce Interpersonal Stress and Assertive Coping **(30 minutes)**
- (a) Why Deal with Interpersonal Stress?  
(i.e., Having to face Others Demands/Expectations; Need for Social Approval and appearing Competent can outweigh our more basic needs for self-esteem, happiness, rest and recuperation, etc.)
- (b) **Passive Interpersonal Behavior** Communicates: *"You count, I don't"; "My Feelings Don't Matter"; "I Don't Respect Myself"*  
**Aggressive Interpersonal Behavior** Communicates: *"I count, You don't"; "What I Say goes"; "I Don't Respect You"*  
**Assertive Interpersonal Behavior** Communicates: *"I count, You count"; "I Respect Both Myself and You"; "I Expect You To Respect Me"*
- (c) Examples of Interpersonal Situations and Various Responses  
**(Use Examples from Weekly Reading)**
- (d) Roadblocks to Assertion: Myths and Emotional Barriers  
*Myth of a Good Friend/Close Family; Myth of Obligation; Myth of Sex Roles; Anxiety; Guilt; Fear of Feeling/Looking Stupid*
- (e) Interpersonal Rights and Responsibilities  
(Questions: What do you think about the beliefs shown in the table? What percentage of your time is spent on each side of the table?)

**Weekly Exercises:  
(Due Next Session)**

**Stress Tracker 2 (3)  
Assertive Responses to Sample Situations  
Symptom Diary Week 7**

## SESSION 7

1. **Collect Symptom Diaries Week 7** **(5 minutes)**
2. Review Applied Relaxation **(5 minutes)**  
(How is practice going?; Any Problems?; What type works best for you?)
3. Review Stress Tracker 2 (3) **(20 minutes)**  
Solicit patient examples from the past week and work through them on the board (What makes it upsetting?; Is there an alternative interpretation?)  
**(Collect Stress Tracker 2 (3))**

4. Review Interpersonal Stress Reading and Assertive Responding Exercise (15 minutes)
5. Introduce Advanced Assertiveness Material
  - a) Developing An Assertive Response (10 minutes)  
 (*Evaluate Your Rights, Designate a Time; Problem and Consequences for you; Express Your Feelings; Make Your Request; State Consequences for Other*)  
**Review Example Handout**
  - b) Protective Assertion Skills (20 minutes)  
 (*Broken Record; Fogging; Content-to-Process Shift; Defusing; Sorting Issues; Assertive Inquiry; Don't Apologize for Asserting Your Needs*)  
**Review Protective Assertion Examples Handouts**
  - c) Introduce Interpersonal Stress Tracking (15 minutes)  
 (Emphasize that it continues stressful event monitoring and Alternative Cognitive Responding but adds the new skill of developing Assertive Responding, which is the new focus)  
**Review Example Handout**

**Weekly Exercises:**  
**(Due Next Session)**

**Interpersonal Stress Tracker (1)**  
**Symptom Diary Week 8**

### SESSION 8

1. Collect Symptom Diaries Week 8 (5 minutes)
2. Review Applied Relaxation (5 minutes)  
 (How is practice going?; Any Problems?; What type works best for you?)
3. Review/Discuss Interpersonal Stress Management Strategies (15 minutes)
4. Review Interpersonal Stress Tracker (30 minutes)  
 Solicit 4-5 patient examples from the past week and work through them on the board (What makes it upsetting?; Is there an alternative interpretation? Is there an alternative assertive behavior to try?)  
**(Collect Interpersonal Stress Tracker (1))**
5. Present Time/Activity Management Skills (35 minutes)
  - a) *Concept of Time-Hurry Behavior or Time-Urgency*  
 (Inaccurate Perception that a lack of time is an obstacle that needs to be overcome through working faster or working without rest)

- b) *Identifying Current Time Use: The Time Pie*  
(Ask group questions from the reading about how they currently use their time)  
(Ask group to complete current and more balanced time pies)
- c) *Setting Priorities and Breaking Activities into Smaller Steps*  
(Make a list/Prioritize Activities/Delegate To Others/Drop When Possible/  
Break Complex Activities into Manageable Steps)
- d) *Activity-Rest Cycling*  
(Schedule Regular Rest/Relaxation/Recuperation Breaks into Daily Routine;  
Review Common Beliefs that Prevent Taking Adequate Rest Intervals)
- e) *Monitoring Time Urgency in Daily Situations*  
(Monitor Perceived Time Pressure, Anxiety/Frustration, Physical Tension  
in Various Situations: Driving, Eating, Waiting in line, Working, Talking to  
Others)
- f) *Behavioral Strategies for Reducing Time Urgency*  
(Goal: To become more comfortable with slowing down our pace of living and  
to experience the emotional and physical benefits of lowered stress)  
(Ask group to choose 3 strategies from handout to  
practice and monitor during upcoming week)

**Weekly Exercises:**  
(Due Next Session)

**Interpersonal Stress Tracker (2)**  
**Symptom Diary Week 9**  
**Time Pie**  
**Time Urgency Reduction Practice Log.**

### SESSION 9

1. **Collect Symptom Diaries Week 9** (5 minutes)
2. **Review Interpersonal Stress Tracker (2)** (30 minutes)  
Solicit 4-5 patient examples from the past week and work through them  
on the board (What makes it upsetting?; Is there an alternative interpretation?  
Is there an alternative assertive behavior to try?)  
(Collect Interpersonal Stress Tracker (2))
3. **Review Time Pie Exercise** (15 minutes)

Questions: *How many hours of your day are devoted to meeting others' needs?*  
*Do all such activities require your involvement?*  
*How many hours of high-quality recuperative time are there?*  
*What responsibilities may be shared or delegated?*  
*What enjoyable/restful activities could be added?*

*How can the present time pie be made more balanced?*

4. Review Behavioral Drills for Reducing Time Urgency Exercise (15 minutes)

Questions: *What strategies did you choose?*  
*What were the outcomes? Easy? Difficult?*  
*What were your reactions: Thoughts/Emotions/Physical?*

5. Introduce Relapse Prevention Strategies (25 minutes)

Question: *Who and what have been responsible for changes in your coping style and/or symptoms?*

Concept: *Prevention, Preparation, and Recovery (PPR)*

*Prevention: Use preventive coping strategies regularly*

*Preparation: Identify high-risk situations and plan self-management strategies*

*Recovery: Setbacks will occur and can be dealt with and kept in perspective*

**Weekly Exercises:**  
**(Due Next Session)**

**Symptom Diary Week 10**  
**Time Urgency Reduction Practice Log (2)**  
**Relapse Prevention and Review**

**SESSION 10**

1. Collect Symptom Diaries Week 10 (5 minutes)

2. Review Behavioral Drills for Reducing Time Urgency Exercise (20 minutes)

Questions: *What strategies did you choose?*  
*What were the outcomes? Easy? Difficult?*  
*What were your reactions: Thoughts/Emotions/Physical?*

3. Review Relapse Prevention Questions and Strategies (40 minutes)

Concept: *Prevention, Preparation, and Recovery (PPR)*

Strategies:	<i>Education</i>	<i>Relaxation</i>	<i>Stress Tracking</i>
	<i>Symptom Tracking</i>	<i>Thought Restructuring</i>	<i>Assertiveness</i>
	<i>Time Management</i>	<i>Activity-Rest Cycling</i>	<i>Time Urgency Drills</i>

4. Termination Issues and Closing Thoughts (25 minutes)



**Post-Treatment Packages: Symptom Diaries Weeks 11, 12, and 13**  
**Questionnaire Package**  
**Medication Tracker**  
**Alternate Contact Person Form**

**Appendix 9**

**Group CBT Patient Treatment Manual**

## **INFORMATION SHEET ABOUT IRRITABLE BOWEL SYNDROME TREATMENT GROUP**

The group will meet on the **third floor** of the **Psychealth** building at Health Sciences Centre. There are **ten (10) sessions** held during **nine (9) weeks** of the thirteen week treatment period. The **first two (2) sessions** are scheduled for **Monday, April 12** and **Wednesday, April 14, 1999**. It is essential that you **attend both sessions**. From then on, the group meets **weekly on Wednesdays**. All sessions start promptly at **5:00 p.m.** and end at **6:30 p.m.** Please allow adequate time to find parking. Metered parking is available on **Bannatyne and McDermott Avenues**. Free one-hour parking (which is all you will need since all street parking is free after 5:30 p.m.) is available on **Tecumseh Street**. The group facilitators are **Gregg Tkachuk** and **Dr. Lesley Graff**.

In this group, you will learn more about irritable bowel syndrome (IBS) and how to help manage the symptoms using clinically proven strategies. The sessions also offer support, encouragement, and understanding. People in this type of treatment will progress at their own pace and improve at different rates. Don't feel discouraged or give up if other people in the group seem to be progressing faster than you are.

### **WHAT TO EXPECT WHEN YOU START THE GROUP**

People often have different reactions when they start group treatment. Some people are very excited to learn new information about IBS and coping with their symptoms. Others may find that they are a little anxious talking in a group. This feeling is not unusual, and people typically find that their anxiety decreases once they have come to the first session or two.

In order to be respectful of other group members, please do not smoke or use language that others might find offensive. Group members are free to leave the room when necessary and return whenever they are ready.

### **CONFIDENTIALITY**

As with any treatment and health information, confidentiality is important. Group members are free to decide what and how much information they wish to share in the group. It is important that all discussions in the group be kept confidential. It is natural to want to discuss your participation in the group with friends and family, but please be careful not to reveal the name or any identifying information of anyone else in the group.

Over...

## **CONTACT WITH OTHER GROUP MEMBERS**

Some of you may decide to act as a support for each other outside of the sessions. This might involve talking on the phone or meeting together. If members do talk on the phone or meet, we ask that they openly discuss this in the group instead of keeping it a secret. This will help to ensure that the group runs smoothly and effectively. It is important that people do not develop business or romantic relationships with other group members while in the group treatment because this may interfere with the group's effectiveness. Often people in the group do go on to develop good friendships after the group program is over, and this is often very supportive.

## **MEDICATION USE**

You may currently be taking medication for your IBS symptoms. In order to conduct a fair evaluation of the psychological treatment, we ask that participants aim to maintain the same level of medication use throughout the treatment period. Please try to avoid increasing or decreasing the daily dosages of currently prescribed medications, or adding any new medications for IBS, unless your doctor determines that it is absolutely necessary to do so.

## **WEEKLY ASSIGNMENTS**

Each week, you will be provided with brief reading material and assignments. You will work at your own pace in the group, but you are asked to complete each weekly assignment in a timely fashion. To get the most benefit from the group, it is important that you set some time aside to complete the weekly assignments. In our experience, it is advantageous to spread this time evenly throughout the week rather than one or two longer periods.

## **ATTENDANCE**

Since this group only runs for a short period of time, it is important that you attend each session. We realize that this is sometimes difficult, but it is important to make this treatment a top priority in your life during the brief number of weeks you are involved with it. Regular attendance and completion of weekly assignments are generally associated with greater levels of improvement by the end of treatment. In the rare instance that you are unable to attend a session, please tell the group facilitators during a prior group meeting or leave a message at 787-3876.

We hope this information sheet answers most of your questions about the group. If you have any questions that are not covered, please do not hesitate to call Gregg Tkachuk or Dr. Lesley Graff at 787-3876. Please leave a message if we are not available to take your call directly.

## MYTHS AND FACTS ABOUT IBS AND PSYCHOLOGICAL THERAPY

**Myth 1:** Because there is no identified pathology or damage to the gut tissue, then the symptoms of IBS are trivial or unimportant.

**Fact:** The symptoms of IBS (i.e., unpredictable pain, diarrhea, or constipation) can seriously compromise the quality of life (i.e., work, family, and social activities) of those afflicted.

**Myth 2:** Because there is no identified structural or biochemical abnormality, then the symptoms of IBS must be all in the person's head.

**Fact:** Research has demonstrated that IBS is a real disorder related to altered gut motility (smooth muscle contractions in the gut wall), sensitivity, or both. The result is that the bowel is no longer moving matter through in a smooth, coordinated way.

**Myth 3:** Stress is the major cause of IBS.

**Fact:** Although we know that traumatic or chronic stress can cause transient gastrointestinal symptoms in almost anyone, IBS is a more complicated disorder. People with IBS are more reactive because they have a hypersensitive gut and are more likely to experience more severe symptoms for a variety of reasons including diet, hormones, neurotransmitters, and stress.

**Myth 4:** If I am sent to see a psychologist, then my doctor must think I have a psychiatric disorder.

**Fact:** A certain percentage of IBS sufferers do report symptoms of anxiety or depression. Some may have always been "worriers", but many develop these symptoms in response to living with a chronic illness. Health psychologists who work with people with IBS, have a comprehensive biopsychosocial understanding that takes into account the reality of the physical symptoms, as well as the importance of psychosocial factors in coping with this chronic disorder.

## **A BIOPSYCHOSOCIAL MODEL OF IBS**

Dr. Doug Drossman, a leading gastroenterologist in the United States, developed a biopsychosocial model of Irritable Bowel Syndrome, which you have been given and may refer to while reading this section.

### Is IBS Inherited?

Although many people speculate that IBS may be a disorder that is passed down through families, not much is known about genetic factors because little research has been conducted. There are some reports which suggest that increased gut sensitivity to pain can be influenced by how we learned to experience and report our gut sensations as children, and by how significant others reacted to our reports. However, there is no firm evidence to support the basis for either genetic factors or early life influences.

### What is the Impact of IBS on Behavior and Quality of Life?

As the Drossman model shows, IBS is a complex disorder. Many factors work together to determine the severity of the IBS illness experience. It is not uncommon for symptoms to periodically flare up and become more intense for IBS sufferers. At other times, the symptoms may become less intense but seldom do they disappear completely for an individual who has developed IBS. It is important to try to determine when symptoms seem to become more intense in order to understand the influence of various triggering factors. Only when we become aware of triggering factors do we have the opportunity to exercise some control over them.

Similarly, it is important to examine the impact that IBS has had on our daily behavior. Individuals with IBS often reduce their preferred level of activity for fear that previously engaged in activities such as eating in restaurants or attending social engagements will be interrupted by repeated trips to the washroom. Also, IBS is one of the leading contributors to work absenteeism. Therefore, in order to make important changes in these areas, it would seem to be important that we examine the extent to which any avoidance of these activities is excessive and represents overcautiousness.

Quality of life reflects our overall level of satisfaction that we are living our lives to the fullest and achieving our life goals. Few individuals who suffer from IBS report that their quality of life has not been compromised in some significant way. For these individuals, learning to exercise better control over their symptoms and environment is an important step in working toward an improved quality of life.

### What's Happening in the Gut?

Research indicates that people with IBS experience abnormal gut motility (an altered rate of contraction of the gut muscles thought to be responsible for symptoms of diarrhea and constipation) and enhanced visceral sensitivity (an increased awareness of painful distentions in the gut and normal intestinal activity, and an increased general area where pain is experienced) as compared to people without IBS.

## What Role Do Psychosocial Factors Play in IBS?

Many people consider that certain foods are "triggers" for their IBS symptoms. And, the concept of "triggers" is a useful way of thinking about how symptoms may get started. In fact, it is now known that psychosocial factors such as acute traumatic stress, chronic daily stress, the way we think about living with IBS, our emotional state, our degree of muscular tension, feeling overwhelmed with responsibilities and rushed for time, interpersonal stress, and a lack of social support can also act as symptom "triggers" in the IBS illness experience, as they do in many chronic illnesses.

Psychosocial factors not only play a "triggering" role in IBS, but also can have an impact in how we respond once we have begun to experience a symptom flare-up. As we will see, thoughts and feelings in response to IBS symptoms that convey worry, sadness, hopelessness, or anger can actually contribute to a worsening of symptoms and function as barriers to recovery from this disorder.

## How Do Psychosocial Factors Influence and Interact With Physiological Symptoms?

Chronic gastrointestinal symptoms are believed to result from a breakdown in normal communication between the Enteric Nervous System (or gut nervous system) which is responsible for digestion and sends messages to, and receives messages from, the Central Nervous System (the brain and spinal cord) where gut sensations are transmitted and experienced. This brain-gut axis insures that visceral gut sensations are first communicated to the brain which then influences intestinal contraction. In this manner, external information from our environment (people, places, or events ) and our internal reactions (thoughts and feelings), have the capability to influence gut sensations, motility, and secretion because of the neural connections between our brain and the nerves of our gut. At the same time, sensations from our gut and spinal nerves reciprocally affect the way our brain perceives pain, our mood, and our behavior.

The Gate Control Model of Pain helps us to understand how thoughts, feelings, and behaviors affect abdominal pain. Pain messages that originate in the gut are passed through a mechanism in our spinal cord that works like a gate to the brain. The brain interprets any messages that come through the gate and this determines how pain is experienced. The pain gate may be partially or fully opened or closed depending on a variety of factors. Factors that can open the gate (make pain more intense) include thoughts that focus attention on the pain, boredom from reduced activity, feelings of depression, anxiety, and anger, and avoidance or lack of participation in previously enjoyed activities. Factors that can close the gate (make pain less intense) include coping strategies such as changing problematic thinking, reducing muscle tension with relaxation strategies, diverting attention away from pain using distraction or imagery, and gradually increasing activity patterns.

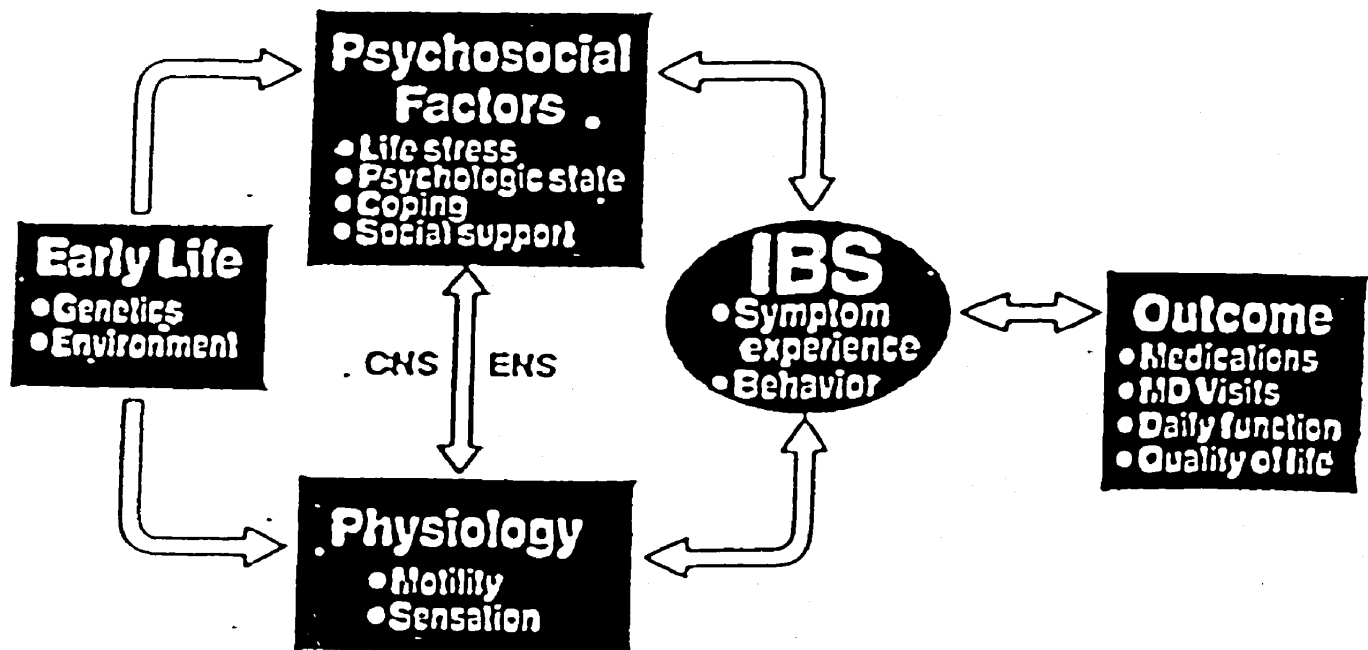


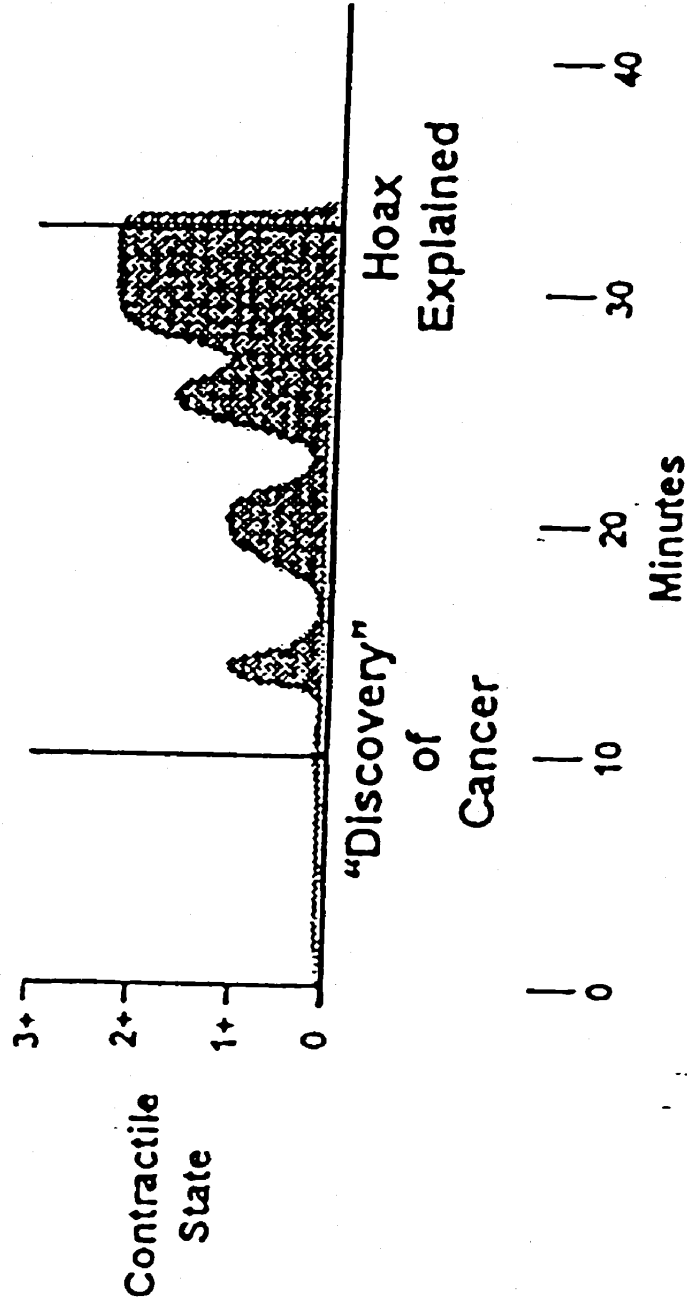
Figure 1. A conceptual model depicting the relationship between outcome and early life, psychosocial factors, physiology, symptom experience, and behavior.

Drossman, Whitehead & Camilleri, 1997 Gastroenterology



IBS - Physiology

## Normal Colonic Response to Stress



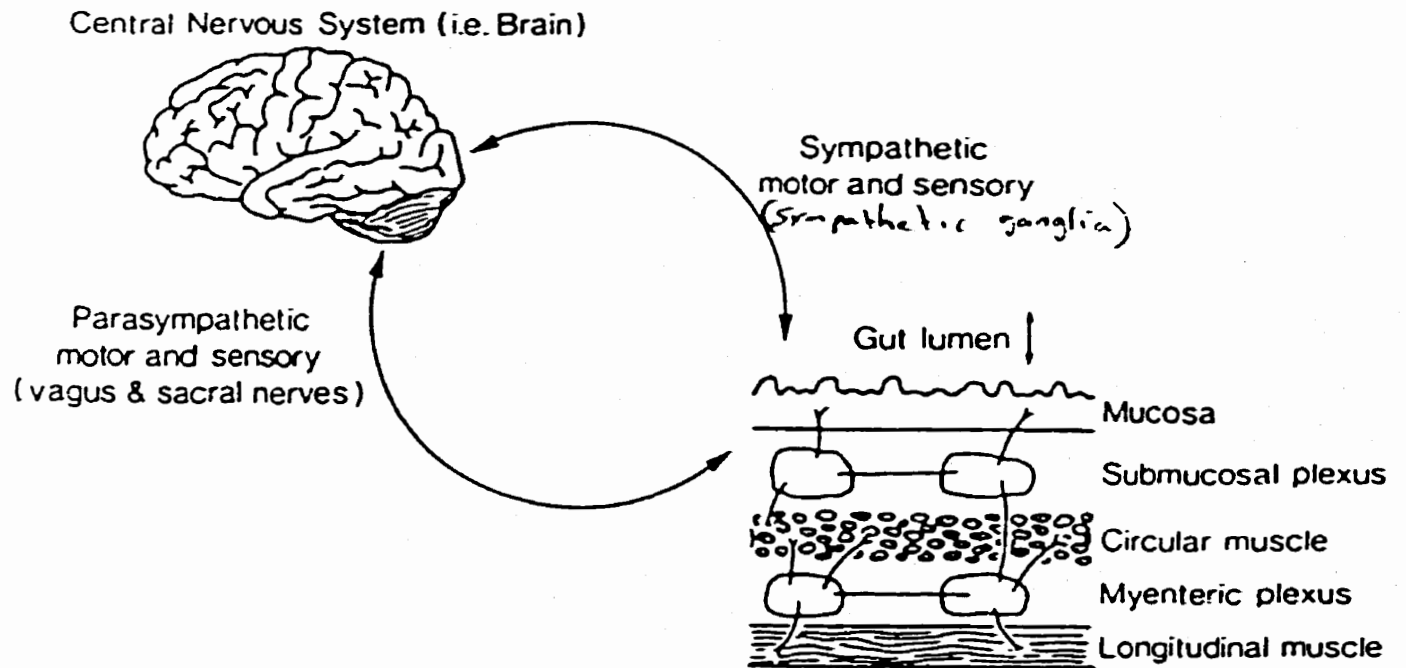
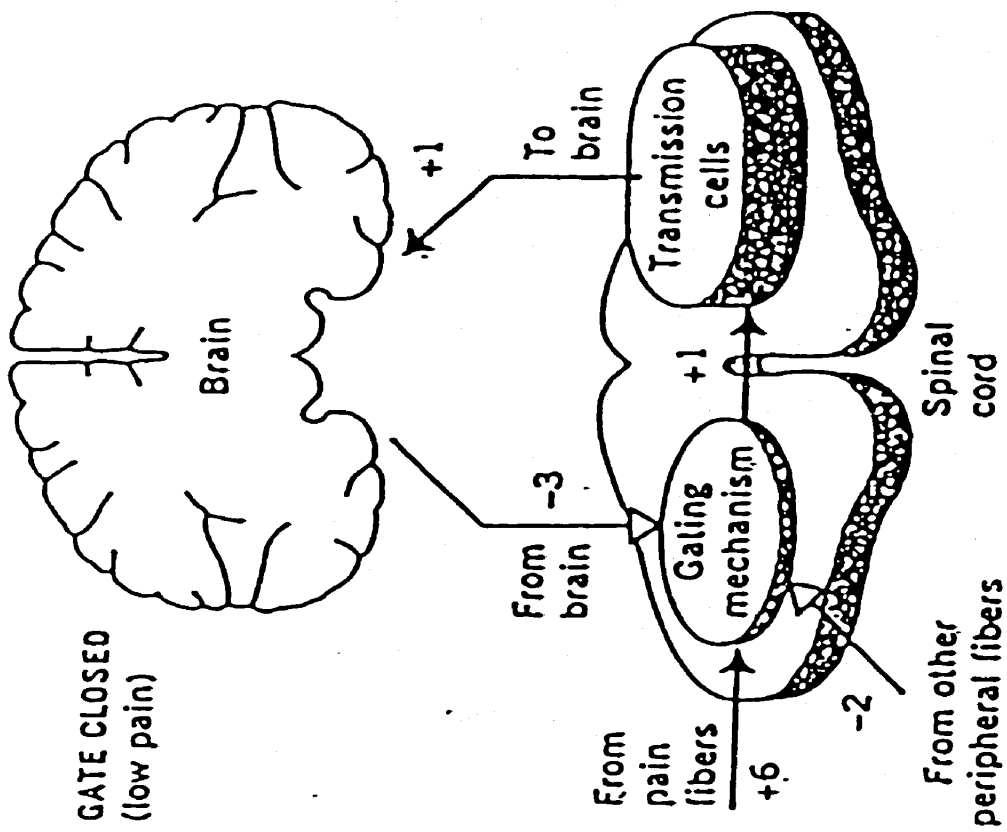
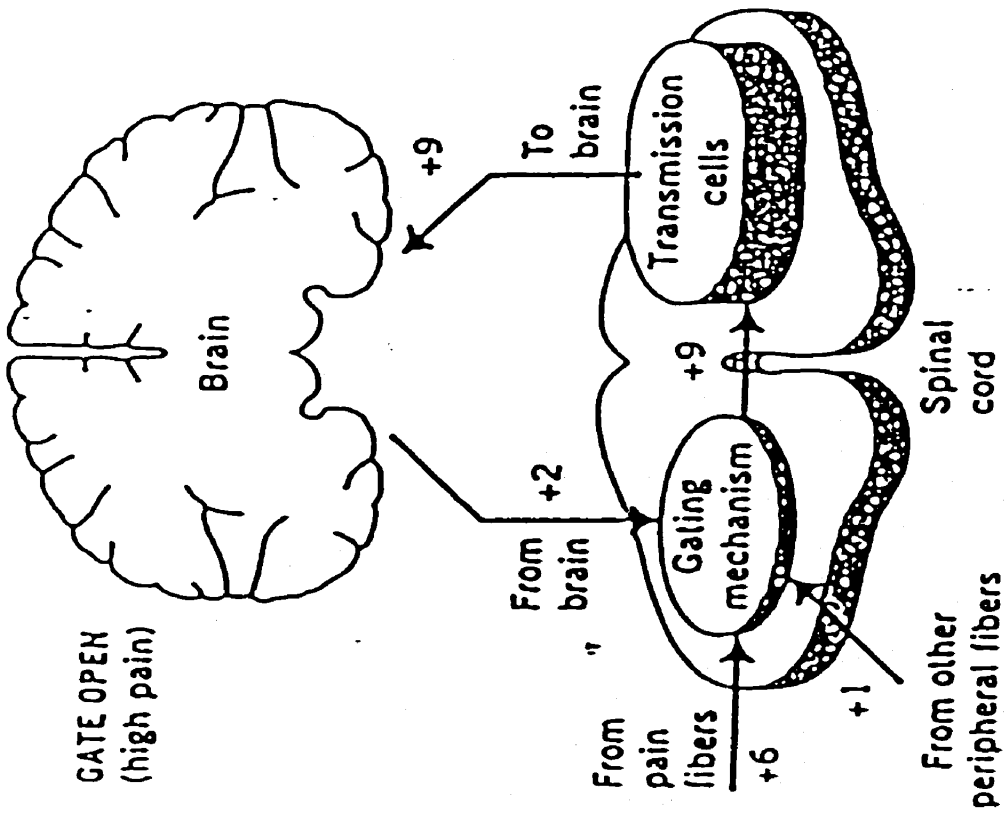


Figure 3. The enteric nervous system (ENS) lies within the gut wall and, through the sympathetic and parasympathetic nerves, transmits and receives information to and from the brain.



**GATE CONTROL MODEL** Sarafino, 1998 Health Psychology: biopsychosocial interactions. copyright John Wiley & Sons, Inc. Reprinted by permission of John Wiley & Sons, Inc.



## In the beast of the belly

New research shows that talk therapy helps women with irritable bowel syndrome

Unpredictable abdominal pain, diarrhea and constipation. They all come with irritable bowel syndrome (IBS)—the problem with a name, but no simple medical reason and no cure. Almost one in every 10 people—the majority of them women—live with these intestinal troubles. In fact, IBS counts as the second most common cause of absenteeism, after the common cold. But researchers have finally found something that may help. Apparently, stress doesn't cause IBS, but it plays a major role in aggravating the gut, and psychotherapy can help manage both stress and IBS symptoms.

Most of us feel a pit in our stomach or get butterflies when we feel scared. The gut and brain communicate via a nerve pathway and chemical transmissions, so

stress affects virtually everyone's bowels, according to psychologist Brenda Toner of the Centre for Research in Women's Health, which is connected to Women's College Hospital and the University of Toronto. Yet those with IBS have a hypersensitive gut, and a variety of dietary, hormonal or environmental stressors can aggravate the disorder, giving them a bout of diarrhea or abdominal pains. Dr. Toner is working with a research team at the universities of North Carolina and Toronto on a five-year study that compares psychological treatment with pain medication and education.

IBS patients don't recognize what causes them stress, according to team psychologist Shelagh Emmott at the Centre for Addiction and Mental Health, Clarke

division. Although the women in the study do not consciously experience job change, divorce, death of friends or parents as overwhelmingly stressful, their guts still react with nasty symptoms.

Women in the IBS study learn how to recognize their stressors using cognitive-behavioural therapy techniques, such as learning to avoid jumping to conclusions, perfectionism and seeing problems as catastrophes. Then Dr. Emmott coaches them to understand what they do that makes the stress worse. Women often discover they've been saying things to themselves such as, "If I'm late, people will hate me" and "I have to give 120 percent or I'm a bad person." Dr. Emmott teaches participants to have more realistic expectations of themselves, to manage their perfectionism and to do something that gives them pleasure. They also learn different ways to respond to stressful events. That might mean saying no or asking for help.

Gender roles also play a big part in the stress that causes IBS symptoms. Women are socialized to be warm and giving, says Dr. Emmott, and often end up taking care of everyone except themselves. Dr. Toner believes that working women experience a serious conflict. "Society gives women mixed messages," she says. "Be focused and competitive but take care of others without complaint. That's unhealthy." Dr. Toner advises women to become aware of the gender trap—of what society expects. In addition, Dr. Toner also encourages women with IBS to take good care of themselves—eat well and get sufficient rest—and not feel guilty about taking time out for themselves.

Many women participating in a prior study by Dr. Toner have used what they've learned in therapy to manage symptoms. For a few, it's changed their lives. One woman felt so inhibited by IBS and the possibility of having to flee to the washroom constantly that she hadn't been to a movie in 15 years. But after four months of therapy, she attended a festival and saw 16 films in 10 days. JAN MATTHEWS

**IMPACT OF IBS ON BEHAVIOR, PHYSICAL SYMPTOMS,  
FEELINGS, AND THOUGHTS**

---

**Activities Decreased  
or Stopped**

**Physical  
Symptoms**

**Feelings and  
Thoughts**

---

Work  
Pleasure (hobbies, movies)  
Household Chores  
Sexual Activity  
Social Activities  
Exercise  
Family Activities  
Sports  
Rest  
Eating in Restaurants  
Eating Certain Foods  
Eating (in general)

Abdominal Pain  
Bloating/Gas  
Abdominal Cramping  
Diarrhea  
Constipation  
Nausea  
Fatigue  
Sweating  
Weight gain/loss  
Headaches  
Decreased Concentration  
Heart Palpitations  
Shortness of Breath  
Decreased Memory  
Muscle Tension  
Insomnia  
Body Aches

Anger  
Depression  
Anxiety  
Fear  
Guilt  
Shame  
Embarrassment  
Frustration  
Out of Control  
Can't do what I used to  
Hopeless/Helpless  
No one understands  
Why me?  
When will this go  
away?  
I can't go on  
Am I crazy?  
Failure  
Unlovable  
Denial

## COGNITIVE-BEHAVIORAL STRESS MANAGEMENT FOR IRRITABLE BOWEL SYNDROME

### Why Is Stress Management Important for IBS?

There are at least two reasons. First, the symptoms of IBS are stressors in themselves. Having IBS reduces your ability to function, to cope, and to feel good. If your general ability to cope is reduced, then other daily stressors start to pile up. Second, in response to having IBS and experiencing a greater number of daily stressors, your muscles will typically tense up a lot of the time as a form of protection for what may be yet to come. This further decreases your ability to cope and you begin to feel even worse.

### What Is the Stress Response?

Also known as the "Fight-or-Flight" response, the stress response is controlled by the sympathetic nervous system and had important evolutionary significance for human survival. We inherited this response from our earlier ancestors, who needed it to cope with extreme physical dangers. This response was adaptive when we were required to fight or run from predators. However, in today's society fighting or running away is seldom necessary or adaptive, yet we are still forced to deal with stress symptoms without having an appropriate outlet or release valve. The danger of prolonged stress is its wear and tear on your body. And when stress is coupled with IBS, the wear and tear you experience is multiplied possibly leading to additional problems such as headaches, chronic pain, chronic fatigue, or increased susceptibility to other illness. Under stress your body exhibits several reactions which can be noticed or measured:

*Your heart rate increases*

*You feel your heart pounding in your chest*

*Your blood pressure increases*

*(Not detectable unless measured)*

*Your sweat level increases*

*Your skin feels cold and clammy*

*Your rate of breathing changes*

*Your breathing becomes shallow or you breathe in gulps*

*Adrenaline, and other stress hormones are released in the blood stream, causing vasoconstriction in the periphery and an increase in muscle tone. Blood flows away from the periphery (hands and feet) to the heart, lungs, and muscles*

*Your muscles contract and your hands and feet become cold*

*Certain acids are secreted in the gastrointestinal tract*

*You feel "butterflies", nausea, or discomfort in your stomach*

*The general digestive activity of the gastrointestinal tract is altered*

*You experience symptoms of diarrhea or constipation*

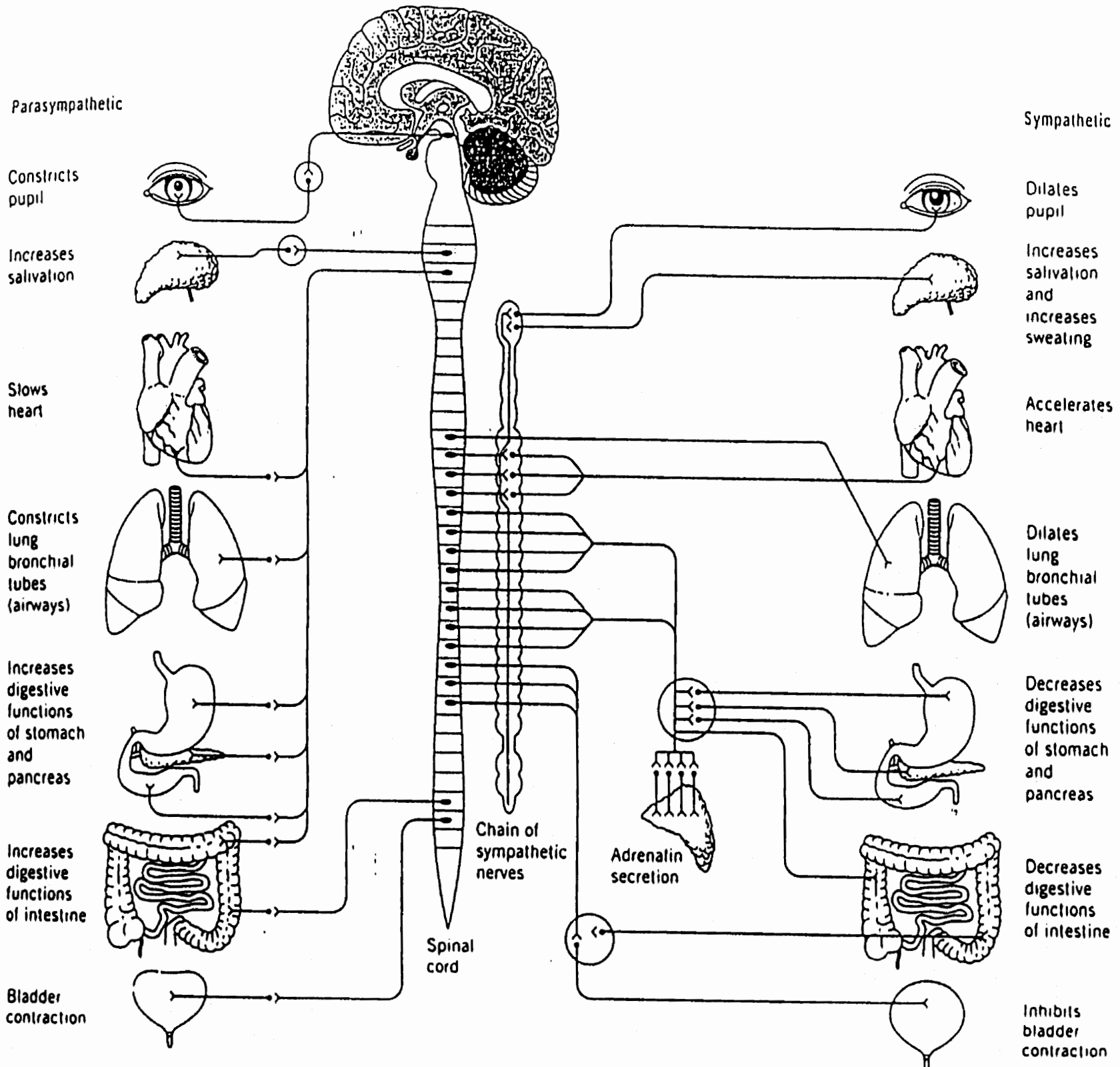
You can help yourself by learning to identify what daily situations contribute to your stress response and by learning to use adaptive coping strategies to deal with these situations, which often can't be escaped or fought.

You can also manage your stress levels and IBS symptoms by attending to your thoughts and feelings. Negative thinking is thought to contribute to the stress response and feelings of anger or depression that some people with IBS experience.

### What is the Association Between Thoughts, Feelings, and IBS?

Your brain takes in and processes all thoughts and emotions simultaneously. The part of the brain responsible for thinking is the cerebral cortex. The part responsible for emotions is called the limbic system. It is now known that there is a great deal of nerve interaction between all parts of the brain. Between the cortex and the limbic system, messages flow freely back and forth between the hypothalamus, a gland at the base of the brain. The hypothalamus is responsible for sending and receiving messages from the brain to the body and back again. The hypothalamus regulates the pituitary gland which in turn activates stress hormones such as adrenalin. Thus, the cortex represents thinking, the limbic system represents emotions, with the hypothalamus acting as mediator. Here is an example of a mind-body interaction: At an important social gathering you experience minor abdominal cramping and the need to pass some gas. This sensation travels up the spinal cord through the hypothalamus. You think, "Why now? If this keeps up, I'll have to leave. I wonder if there is a washroom close by? Why did I even bother to come when I knew this would probably happen?" You feel embarrassed, angry, or maybe even depressed. Then you may think, "What if I don't make it to the washroom in time?", which causes you to feel afraid. The fear sends out a stress alarm via the hypothalamus, which in turn increases your muscle tension and further alters the contractile activity in your bowel causing more discomfort. You then decide that, to avoid an embarrassing situation, you'd better leave. To avoid experiencing these negative feelings again in the short-term, you become reluctant to attend similar social gatherings in the future, which later makes you feel more isolated, depressed, anxious, or angry in the long-term.

Because of this simultaneous processing in the brain, it is difficult to determine which comes first - your negative thoughts, your negative feelings, or the gastrointestinal symptoms. But it is likely that whenever you think negative thoughts about your gastrointestinal symptoms, you will probably have a resulting negative physical reaction. Conversely, whenever you experience gastrointestinal symptoms, you will probably think negative thoughts about them, setting off a vicious cycle, unless you take steps to reverse or prevent this reaction.



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# COGNITIVE-BEHAVIORAL MODEL OF IRRITABLE BOWEL SYNDROME

## SITUATIONAL STRESSORS

eg., Hockey Game  
(Excitement)  
Funeral  
(Sadness)

## CHRONIC STRESSORS

eg., Responsibilities  
Smoking  
Work Schedule  
Family Issues

## DIETARY FACTORS

eg., Foods  
Eating Behavior



## PHYSIOLOGICAL REACTIONS

eg., Hyperacidity  
Change in Bowel Motility  
Muscle Tension  
Hyperventilation



## SYMPTOMS

eg., Gas and Bloating  
Change in Bowel Habit  
Chest Pain  
Light-Headed



## THOUGHTS

"I might have cancer"  
"Why are they doing all these tests?"

← FEAR (of Serious Illness)

✓ FAMILY HISTORY  
(G.I. PATHOLOGY)

✓ MEDICAL  
INTERVENTIONS

## EMBARRASSMENT

←  
"Others won't understand"  
"They think I'm crazy"  
"Oh no! Here it comes again"

eg., Bowel Accident  
Having to Explain to Others

## GUILT and/or DEPRESSION

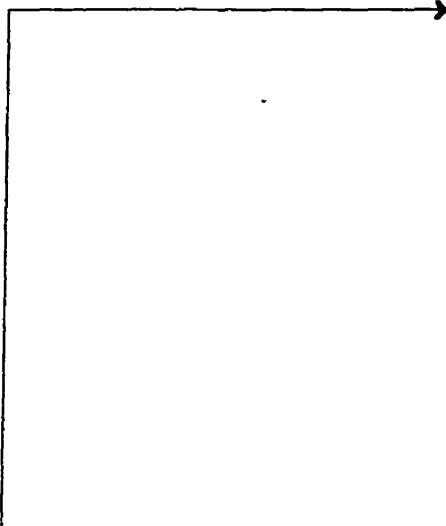
←  
"I'm letting my family down"  
"My boss won't respect me"  
"I need to show others I can keep up,  
even if it kills me"

eg., Can't Keep Up Responsibilities  
Letting Others Down



## AVOIDANCE BEHAVIOR

eg., Restaurants  
Parties/Socials  
Certain Foods  
Checking Location of Washroom



## GOAL SETTING AND BEHAVIORAL CONTRACTING

Several unfortunate effects of living with IBS are that it can wear you down both physically and mentally, cause you to lose your focus during day-to-day activities, and leave you with little hope of having a normal life in the future. Without being able to concentrate fully on what you would like to achieve each day, it is likely that your symptoms will take over control of your entire life, if they haven't done so already.

The first step in regaining control of your life is identifying specific areas in which you can exercise some positive influence and ignoring those in which you can't. All too often we have a tendency to worry about things that are out of our control, such as the behavior of others or how things will turn out for us in the long-run.

Areas in which you have control include how you spend your time and how you choose to respond to situations and other people in your daily life. Unfortunately, it is quite easy to get swept up in the pace of modern life and, in order to meet others' expectations, neglect to provide for our own needs.

Goal setting is the systematic activity of specifying behavioral objectives or steps which will guide us toward making desirable improvements in our lives. Activities that are typically decreased or stopped by IBS include the ability to work at full capacity, pleasurable leisure activities, sexual activity, attending social events, physical exercise, family activities, sports, and thinking positive thoughts and having positive feelings about one's self. Through goal setting, we can identify target areas for improvement, specify behaviors that will help us to improve, and measure how effective our program is, in order to make further changes when necessary.

### Goal Setting Guidelines

The following guidelines will help you to set effective goals:

1. **Set goals that target what you want to do (positive goals), not what you don't want to do (negative goals).** For example, a positive goal might be, "I will spend 30 minutes in the evening, just after supper, listening to my relaxation tape." A negative goal might be, "I'll try to spend less time worrying about ...." The problem with a negative goal is that it doesn't tell you how you are actually going to achieve it.
2. **A goal should be behavioral and specific.** It should specify an observable action you can take. For example, a behavioral goal would be, "I will take a 20 minute walk every day when I get home from work." A nonbehavioral, nonspecific goal would be, "I will get more exercise this month."
3. **A goal should be realistic.** It should specify something you are not doing now but you could do with a moderate amount of effort. Goals which are too difficult to achieve set us up for failure and disappointment. A realistic goal would be, "I will

take a 5 minute break to rest and recuperate for each hour that I work at my desk." An unrealistic goal would be, "By the time I complete this group, I expect to be symptom-free."

4. **A goal should be measurable.** You should be able to identify when the goal has been achieved. For example, the goal: "To practice relaxation training twice per day" can be recorded each time it is completed and tracked over time.
5. **Set process-oriented goals as opposed to outcome-oriented goals.** Process-oriented goals are behaviors that we have direct control over such as using relaxation, thought restructuring, exercising, spending more time with family, giving a good job interview, and how we choose to respond to others. Outcome-oriented goals are outcomes that we have no direct control over such as eliminating bowel symptoms, how others choose to behave, how things will turn out next week, and whether we will actually be hired after a job interview.
6. **A goal should be desirable.** That is, will achieving the goal be worth putting forth the necessary effort?

### Behavioral Contracting

Research has demonstrated that merely having good intentions about making behavioral changes is insufficient. To insure that a goal is achieved requires making a behavioral commitment toward the goal. The best way you can make a behavioral commitment toward a particular goal, or goals, is by developing a behavioral contract outlining the goal(s) and the necessary steps involved in achieving the goal(s). The word "contract" connotes commitment and makes the commitment a matter of social record. When others know about our goals, we are more likely to follow through with the steps necessary to achieving them.

To capitalize on the advantages of behavioral contracting, we have developed an IBS Self-Management Contract for you to use for the process of goal setting and declaring a commitment toward achieving your goals. When you have completed your contract, please present it to one of the therapists who will co-sign it to indicate his or her support.

**IBS SELF-MANAGEMENT CONTRACT**

ID#: \_\_\_\_\_

General Goals for My Self-Management Plan:

- To reduce the frequency of severe symptoms I experience.*
- To handle everyday stresses more effectively.*
- To spend more quality time with my friends and family.*
- I will spend 30 minutes in the evening, just after supper, listening to my relaxation tape.*
- I will take a 5 minute break to stretch, rest, and recuperate for each hour that I work at my desk.*
- I will eat lunch or dinner at a restaurant with a friend at least once per week.*

**The Components of My Treatment Plan Include:**

1. **Daily Monitoring and Recording of IBS Symptoms**
2. **Regular Home Practice of Relaxation Training Strategies: Progressive Muscular Relaxation (PMR), Relaxed Abdominal Breathing, Relaxing Imagery**
3. **Regular Monitoring and Recording of Stressful Situations along with My Physical Reactions, Emotional Reactions, and Thoughts (Self-Talk)**
4. **Increasing my Awareness of my Rights and Responsibilities in Interpersonal Relationships and Communicating Effectively to Reduce Interpersonal Stress**

Steps I Will Take to Attend Sessions Regularly, Practice Coping Skills at Home, and Achieve My Goals are:

- I will tell others about my plan so they will understand when I need to leave work early or practice my coping skills.*
- I will set aside a regular amount of time on my daily calendar to practice my coping skills.*
- I will delegate some of my responsibilities to others during the treatment period.*

How I Will Know That My Plan is Working:

- I will feel calm. I will have more energy. I will feel better about myself.*
- I will feel more in control of my life.*
- I will be thinking in the "here and now" instead of worrying about the past or future.*
- There will be a better balance of time spent on my needs and the needs of others.*

How I Will Reinforce (Reward) Myself for Completing Weekly Exercises and Making Progress:

- I will treat myself to a small gift each week during the treatment program.*
- I will allow myself some time to do something I really enjoy doing.*
- I will allow others to do something nice for me.*

Some Things That Could Interfere With My Plan are:

- Feeling tired. Feeling frustrated. A symptom flare-up. A symptom-free period.*
- Being too busy with work and family responsibilities.*

\_\_\_\_\_  
*April 12, 1998*  
(Date)

\_\_\_\_\_ *Jane Smith* \_\_\_\_\_ (Your Signature)

\_\_\_\_\_ (Therapist Signature)

# IBS SELF-MANAGEMENT CONTRACT

ID#: \_\_\_\_\_

General Goals for My Self-Management Plan:

*The Components of My Treatment Plan Include:*

1. *Daily Monitoring and Recording of IBS Symptoms*
2. *Regular Home Practice of Relaxation Training Strategies: Progressive Muscular Relaxation (PMR), Relaxed Abdominal Breathing, Relaxing Imagery*
3. *Regular Monitoring and Recording of Stressful Situations along with My Physical Reactions, Emotional Reactions, and Thoughts (Self-Talk)*
4. *Increasing my Awareness of my Rights and Responsibilities in Interpersonal Relationships and Communicating Effectively to Reduce Interpersonal Stress*

Steps I Will Take to Attend Sessions Regularly, Practice Coping Skills at Home, and Achieve My Goals are:

How I Will Know That My Plan is Working:

How I Will Reinforce (Reward) Myself for Completing Weekly Exercises and Making Progress:

Some Things That Could Interfere With My Plan are:

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Your Signature)

\_\_\_\_\_  
(Therapist Signature)

✎ Please complete and bring to next session.

## **RELAXATION THERAPY AS A COPING STRATEGY FOR IBS**

Relaxation therapy involves learning how to achieve a state of mental and physical peacefulness in a very brief period of time, as well as how to apply these relaxation skills to your daily life. The goal of relaxation therapy is to bring about the "Relaxation Response", by activating the parasympathetic division of the autonomic nervous system to counteract the effects of the "Stress Response", which occurs when the sympathetic division is called into action because of an environmental threat or challenge. Relaxation therapy consists of a very systematic set of skills that can be learned and mastered with regular practice.

For many people with Irritable Bowel Syndrome (IBS), everyday stressful events, such as hassles at work, arguments with your spouse, child-rearing problems, and so on can be key triggering factors for an already sensitive and physiologically reactive gut. You may have noticed that when you are experiencing stress your body reacts in different ways. Perhaps your neck muscles tighten up and feel stiff and sore. Perhaps your heart begins beating more rapidly or irregularly, or your breathing becomes short and shallow. These are all indicators that your body is experiencing stress. Through relaxation therapy, you will learn how to decrease the amount of muscle tension you experience as a result of stressful events in your daily life.

One form of relaxation therapy, called "Relaxed Abdominal Breathing", specifically targets the effects of short, shallow breathing or hyperventilation that accompany the stress response. You will learn to recognize these, and other symptoms within yourself as signs of stress or tension. Relaxation therapy counteracts the muscle tension that can occur throughout the day by activating the parasympathetic nervous system to enable you to relax and recuperate from daily stress.

For relaxation therapy to be effective, you will need to practice the assigned exercises for about 15-20 minutes, as often as you can during the day. A minimum number of practices is **twice daily**. Learning to incorporate relaxation into your daily living is as important as other activities such as brushing your teeth or washing your hands. You will want to practice it as much as possible until it becomes an automatic habit. When you are first learning to drive a car, it is necessary to think about each step before you do it - put on the seat belt, turn on the ignition, look in the rear view mirror, and so on. After driving for a period of time, you no longer need to carefully think about these steps - you just do them. Relaxation therapy can become just as automatic after a period of time. Although some patients report being able to become very relaxed after one or two practice sessions, the majority of patients do not show major reductions in muscle tension and other physical responses until much later in the process. Therefore, please do not get discouraged if you do not experience immediate results.

Relaxation is generally used as a self-regulation and prevention skill. This means that you will learn to recognize signs of tension in your body and reduce them before they reach the level of muscle soreness, fatigue, or overwhelming gastrointestinal distress. Once you are actually experiencing symptoms such as a headache or gastrointestinal attack, these

techniques may not be as effective as they would be if used prior to the onset of the distress, although they can still be effective for mild to moderate levels of pain.

Initially, the best time to practice relaxation training is when you are not experiencing distress. Once you have experienced some success in bringing about the relaxation response under ideal conditions, you may gradually begin to apply it as soon as you notice the initial signs of gastrointestinal distress, rather than waiting for a full-blown attack to occur. The ability to relax at will is a complex skill. Once it has been learned, it can be effectively applied even in distressing or painful situations.

Achieving a deep state of relaxation is a very pleasant experience. In addition to reducing stress and physical symptoms, there are many other benefits. Many people report feeling a greater degree of self-control, less difficulty falling asleep, decreased blood pressure, less irritability, and a more positive outlook on life following relaxation training. Unlike medication, there are no negative side-effects with this form of treatment.

## **Difficulties with Relaxation**

All human beings share a similar biological make-up; there is usually no purely physical reason why relaxation should work for some people and not for others. The reason that relaxation may not work for some people is usually due to psychological reasons or insufficient practice. These problems can be overcome if you really want to relax. If you are experiencing difficulty relaxing, consider some of the points below.

*"I am too tense to relax."*

In this situation, the person uses the very symptom that needs treating as an excuse for not relaxing. Relaxation may take longer than expected, but there is no reason why someone should have to remain tense. It might be useful to consider if there is some other factor getting in the way of relaxation.

*"I don't like the feelings of relaxation."*

About 1 in 10 people report that when they relax, they become aware of feelings they don't like or that frighten them. These feelings may indicate that you are coming into contact with your body again and noticing sensations that may have been kept under check for many years. You do not have to worry about losing control during relaxation sessions. You can always let a little tension back in until you get used to the sensations.

*"I feel guilty wasting so much time."*

You need to see relaxation as an important part of your recovery. Many therapies take time - for example, physiotherapy. You do not have to be openly productive to be doing something useful. You have the right to spend time in activities which promote your health.

*"I can't find the place or the time."*

Be adaptive. If you can't find 20 minutes, find 10 minutes somewhere in the day to relax. If you do not have a private room at work, go to a park. Relax in the evening when your partner is reading the paper - you do not have to be alone to relax. Don't choose a time when you would rather be elsewhere. For example, don't choose to relax at lunch time if you would prefer to be with friends. If you keep making the excuse that there is no time, you may need to consider whether other factors are preventing you from relaxing.



*"I'm not getting anything out of this."*

Unfortunately, many people expect too much too soon from relaxation training. You cannot expect to undo years of habitual tensing in a few relaxation sessions. Give the training time to take effect. Set long-term goals, rather than monitoring improvement exclusively day by day.

*"My mind wanders."*

During the fight or flight response, the mind becomes very focused on danger and how to escape and avoid embarrassment. In contrast, the relaxation response involves the mind becoming less focused. As a result, as you become relaxed you may find your mind beginning to wander. This should not cause concern. Rather, it can be seen as a sign of progress, indicating that you are indeed relaxing. If you find your mind wandering, just gently bring yourself back to focus upon the tape or your self-instructions and to your bodily sensations as you do the relaxation exercises. This technique can also be used when unwanted thoughts or worries enter your mind.

*"It feels unnatural."*

If you have been tense for a long time, relaxing may well feel unnatural. Through relaxation you will begin to reeducate your muscles to be more relaxed, and you will also become more aware of the difference between a tense and a relaxed state. At first, this change may feel unusual. Give yourself time to make adjustments.

From:

Andrews, Crino, Hunt, Lampe & Page (1994). *The Treatment of Anxiety Disorders*. pp. 159-160.

# Relaxation practice

Tension level

Date	Time	Before		After		Comments
		Low	Moderate High	Low	Moderate High	
Jan 2	First practice 15 min	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		Breathing felt funny
Jan 3	Second practice 13 min	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Jan 4	First practice 10 min	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		Hard to coordinate Tense
Jan 5	Second practice 12 min	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Jan 6	First practice 10 min		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Jan 6	Second practice 10 min		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Jan 7	First practice 13 min		<input checked="" type="checkbox"/>			Scared of relaxation Felt better
Jan 8	Second practice 10 min		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Jan 8	First practice 8 min	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
	Second practice					



## INSTRUCTIONS FOR FILLING OUT STRESS TRACKER 1

Stress tracking is an important first step in changing how we respond to various situations in our daily lives. To begin stress tracking, set aside some time to look back over your day and identify the most stressful situation/event that you experienced that day. Even if it did not seem overwhelmingly stressful at the time, most people can identify at least one challenging situation/event that did not go as planned and consequently became what we call a daily hassle. These daily hassles can occur at home, in the workplace, at school, or outside such as while driving or having to wait in line when you are in a hurry. Most often, daily hassles involve other people. Examples may include being expected to complete an unreasonable amount of work by an employer, having to deal with family responsibilities or disagreements, or having to cope with inconsiderate drivers.

On the other hand, positive events can sometimes be experienced as stressful. Being invited to deliver a public presentation, attending a party, or witnessing an exciting sporting event or emotionally evocative movie are examples. Usually, these events, whether daily hassles or sources of excitement do carry with them some emotional impact. Common emotions that can be experienced and identified during or after such events may include anxiety, anger, frustration, happiness, disappointment, embarrassment, guilt, or sadness.

Your task is to identify at least one situation/event for each day of the week that had some emotional impact on you, and complete all columns of the stress tracker for each event you identify. If you experience more than one stressful situation/event per day and wish to identify more than one, you are encouraged to do so.

Here are some suggestions/hints to help you complete stress tracker 1:

1. Column 1: Event/Situation

To identify the event that triggered an emotional reaction, ask yourself: What happened? Who was I with? What was I doing? When did it happen? Where was I?

2. Column 2: Emotional Rating

Rate how upsetting the emotional reaction to the situation was using the following scale:

0	1	2	3	4	5	6	7	8	9	10
Not At All	A Little		Moderate			A Lot		Most I've Ever Felt		

3. **Column 3: Emotional Reaction**

Identify the emotion you experienced during or after the triggering event. You can experience more than one emotion in any situation. Some people also notice that they experience certain physical symptoms in addition to a strong emotional reaction during or after a triggering event. If you experience any physical symptoms during or after the situation, you can record them in the emotion column also (e.g., Heart Racing (8) or Abdominal Cramping/Distension (8)).

4. **Column 4: Cognitive Reaction**

Identify what thoughts were going through your mind just after the triggering event. What is it about the situation that left you feeling so upset? Thoughts can be verbal or a "mental picture" of the anticipated consequences (that is, what might happen).

5. **Column 5: Outcome**

Identify what happened after your initial reaction. What did you do next? What did you say? How did things turn out later?

### Stress Tracker 1

Date	Event Who? What? Where? When?	Emotional Rating (how upset?) 1...5...10	Emotional Reaction (feelings - for example, sad, anxious, angry)	Cognitive Reaction ( thoughts - what is it that makes this event so upsetting?)	Outcome What happened after initial reaction?
	While hosting a social gathering for work colleagues I experienced bowel cramping and gas	8 8	embarrassed afraid	Why now? Why did I host this party? If I spend too much time in the washroom people will begin to wonder what's wrong with me?	More muscle tension; heart racing; bowel attack; reluctance to host parties in future.
	I was assigned a task for immediate completion by boss an hour before the end of the day, but also had other deadlines to meet.	6 6	anger anxiety	How will I get this done? He should have asked me if I had time. What a jerk.	Spent 30 minutes trying to organize task priorities; stayed late to complete own work; had to cancel dinner with family
	Late for an important meeting because caught in traffic jam.	8 8 8	anxiety frustration shame	I am going to be late. My boss will think I am disorganized. I will never get that promotion.	Got to the meeting late. Apologized, and was able to do my presentation after the break instead of before the break.
	Fight with teenage son about curfew/friends.	9 9	anger guilt	Why doesn't he listen? Where did I go wrong? He sure is stubborn. I hope he doesn't get mixed up with the wrong crowd.	Son stormed out of house and didn't come back until after curfew. I talked further with my wife about ways to deal with son.



## **THE IMPORTANCE OF THE WAY YOU THINK**

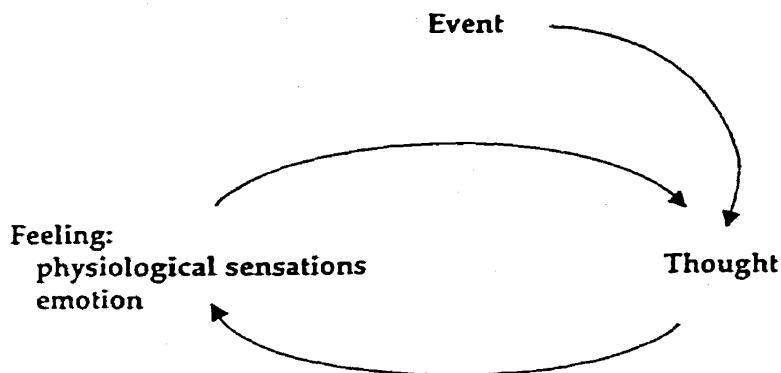
Different thoughts or interpretations of an event can lead to different emotional reactions in the same situation. In other words, the way we evaluate or interpret a situation or event affects the way we react to it emotionally. Consider the following example from Andrew et al. (1994). Three people are waiting at a bus stop. They see the bus approaching, hail the bus - and the bus just drives straight past without stopping. The first person in line begins to jump up and down waving her fists in the air and shouting. She is having an angry reaction. The second person in line bursts into tears, appearing distressed. The third person in line begins to laugh, seemingly amused by the turn of events. Now, the same thing happened to all of them, yet they experienced three different emotional reactions. Clearly, it was not the event that caused the reactions. So what was it? To know why each person reacted as they did, we have to know what they were thinking. It turns out that the first person was thinking, "How dare the driver go right past! I'm going to be late for an important meeting." The second person woke up feeling blue that morning. When the bus went past he thought, "Oh no. Nothing is going right today, I feel so miserable." The third person thought, "Alright! The next bus is not for half-an-hour. I have a completely legitimate excuse to be late. I think I'll go have a cup of coffee."

The interpretations that you make about a situation determine your emotional response. In other words, your emotional state is a result of the way in which you evaluate or label situations, not necessarily a result of the objective characteristics of the situation itself. Consider a second example from Goldfried et al. (1974). Suppose you are going to a party and 10 couples will be there, of which only 3 are known to you. One person, because of the way she has learned to view things, might consider this quite stressful. Perhaps she thinks that 7 couples will reject or dislike her. Yet another person may approach the party with a great deal of excitement at the thought of meeting and getting to know new people. Although the situation is the same in both cases, the thoughts and emotional reactions experienced are very different. Therefore, the unique way we think about a situation determines the way we react emotionally. Further, the way we think about particular situations impacts on our behavior in those situations. If we think that something discomfiting may occur in a situation, such as a bowel attack, we are more likely to approach the situation apprehensively, and, in some cases, avoid the situation altogether. Some common fears that people with irritable bowel syndrome experience are embarrassment, causing others to become upset, and receiving a negative evaluation from others.

Thoughts also affect our physical reactions. Imagining a frightening scene can lead to a more rapid heart rate. Imagining a romantic scene can lead to sexual arousal. Athletes who imagine performing actually experience small muscle contractions that reflect the bigger muscle movements they make in an actual performance. Research has also documented the impact that thoughts, beliefs, and attitudes have on our health. For example, there is evidence that a person's attitude after receiving a diagnosis of cancer can affect how long she or he lives. This is also evident in people who suffer from irritable bowel syndrome. When a person prone to experiencing bowel symptoms experiences an otherwise normal physical symptom such as mild abdominal cramping or gas, he or she may think that they are going to have a full-blown attack. This terrifying thought can trigger a series of bodily changes, such as quick, shallow breathing, increased heart rate, muscle tension,



increased secretion of stomach acid, and increased contractile activity in the gut. These physical changes are interpreted as further signs of a bowel attack. Following these thoughts, the physical sensations intensify even further. The perception of imminent danger intensifies until the person may experience a bowel attack or escape, and avoid similar situations in the future. This connection is shown in the diagram below.



### **Is Positive Thinking The Solution?**

Positive thinking is not the solution to life's problems. In fact, without balanced, flexible thinking, we may ignore important signals that something is wrong. Paying attention to the way you think helps you to consider as many different angles on a problem as possible. Looking at the situation from many different sides - positive, negative, and neutral - can lead to new conclusions and solutions.

### **Is Changing The Way You Think The Only Way To Feel Better?**

It is equally important to make physical, behavioral, and environmental changes. For example, relaxation training (physical change) and exposure to feared stimuli (behavioral change) are important aspects of overcoming anxiety. To help feel better, it also can be helpful to make changes in your environment. Reducing stress, learning to say no to unreasonable demands made by other people, spending more time with supportive people or in enjoyable activities, and using employee protections to reduce discrimination or harassment on the job are all environmental changes that can help you feel better. Some environments are so harmful that without removing oneself from danger, other techniques will be ineffective on their own.

## **CHANGING THE WAY YOU THINK: COGNITIVE STRATEGIES FOR IBS**

The first step in changing the way you think is to become aware of your automatic thoughts in situations which have emotional meaning to you. Once you become more aware of your automatic thoughts, you will be in a better position to determine whether your interpretation was the most adaptive way to think about the situation. If it was not, then you may want to consider developing more adaptive, alternative or balanced ways of thinking in future situations in order to reduce the experiencing of extreme emotional reactions. After identifying problematic thoughts in various past situations, you can work on developing more adaptive alternatives. Once developed, these alternative thoughts can be applied whenever you encounter similar situations in the future.

### **Automatic Thoughts**

We all experience times when we have an emotional reaction that seems stronger or more extreme than a situation requires. By identifying the thoughts we are having, our emotional reactions usually make perfect sense. Think of thoughts as a clue to understanding emotions. To understand our emotions, we must learn to identify the thoughts that accompany them. Thoughts that pop into our heads automatically throughout the day are called automatic thoughts. We don't plan or intend to think in a certain way. In fact, we are usually not even aware of our automatic thoughts. One of the purposes of the cognitive approach is to bring automatic thoughts into awareness. Awareness is the first step toward change and better problem solving.

### **How Do We Become Aware Of Our Own Automatic Thoughts?**

Although we have automatic thoughts that are of a positive, neutral, and negative variety all the time, it is the automatic thoughts that help us to understand our strong emotional reactions that are of most interest. These thoughts can be words, images, or memories. As illustrated earlier, different people can have different automatic thoughts in a similar situation. Place yourself in the situation of the bus passing by without stopping, or being invited to the party. What might your automatic thoughts be? In any given situation, there are a variety of possible ways to interpret what the events mean. In the situation of the bus passing by, you may feel upset because you will be late for an important appointment and be thinking that others will judge you incompetent. On the other hand, you may feel happy because you think that you have justifiable reason for being late. The interpretation that you make determines your emotional reaction.

**To identify automatic thoughts** in situations, first reconstruct an emotionally-charged situation in your imagination until you re-experience the emotions that were associated with it. Then, ask yourself the following questions until you have identified the thoughts that help you understand your emotional reactions:

- What was it about the situation or event that was most upsetting to me?
- What was going through my mind just before I started to feel this way?
- What does this say about me if the thought is true?
- What am I afraid might happen?
- What is the worst thing that could happen if the thought is true?

- What does this mean about me, my life, my future?
- What does this mean about how other people feel/think about me?
- What does this mean about the other person or people in general?
- What images or memories do I have in this situation?

### Where's the Evidence?

The next step is to consider information that does and does not support the automatic thoughts you identify in an emotionally charged situation. It is helpful to consider your thoughts as hypotheses, or guesses in attempting to look for the evidence. Looking at the evidence both for and against our conclusions is the secret to reducing the intensity of the emotional reaction. When we have negative automatic thoughts, we usually dwell on information that confirms our conclusions. Actively search your memory for experiences that contradict your conclusions. If you are experiencing a very strong emotion or holding a belief that seems absolutely true to you, it can be hard to see the evidence that does not support your beliefs. The following questions, which remind you to look at a situation from many different perspectives, will help you find **alternative evidence**:

- Have I had any experiences that show that this thought is not completely true all the time?
- If my best friend or someone I loved had this thought, what would I tell them?
- If my best friend or someone who loves me knew I was thinking this thought, what would they say to me?
- What evidence would they point out to me that would suggest my thoughts were not 100% true?
- When I have felt this way in the past, what did I think about that helped me feel better?
- Are there any strengths or positives in me or the situation that I am ignoring?
- Am I jumping to any conclusions that are not completely justified by the evidence?
- Am I engaging in all-or-nothing thinking?
- Am I employing ultimatum-type words? (e.g., always, forever, never, should, must, ought, can't, every time)
- Am I thinking in terms of probabilities or certainties?
- What are the actual odds of my belief coming true?
- Am I confusing low probabilities with high probabilities?
- Am I blaming myself for something over which I do not have complete control?
- Am I going along with others' demands at the expense of my own well-being?

It is helpful to write down the evidence you uncover while answering the above questions. Seeing it all at once will make you feel somewhat better than you would just thinking about one piece at a time.

## **Alternative or Balanced Thinking**

Sometimes a little bit of information shifts our interpretation of a situation 180 degrees. When there is evidence that does not support your original automatic thought, think of an alternative explanation for the situation. The alternative view of a situation you consider should put all the evidence you uncovered in perspective. Sometimes the evidence does not lead to a total shift in perspective. Often the new view of a situation will be a more balanced perspective than a totally different alternative view. For example, suppose that you are invited to a party as in one of the previous examples. What are some alternative thoughts you could have. You might think, "I am looking forward to meeting new people", "I am looking forward to spending time with Jill", "I really enjoy the food that Jane and Steve usually serve", "Most people are more concerned with their own lives than noticing what I do", "I have been to parties during my lifetime in which I didn't experience bowel symptoms."

Alternative or balanced thinking is often more positive than the initial automatic thought, but it is not merely the substitution of a positive thought for a negative thought. Alternative or balanced thinking takes into account both negative and positive information. The following questions can help you to arrive at a **balanced or alternative thought**:

- Based on the evidence, is there an alternative way of thinking about or understanding the situation?
- If someone I cared about was in this situation, had these thoughts, and had this information available, what would be my advice to them?
- How would I suggest that they understand the situation?
- If my thought is true, what is the worst outcome?
- If my thought is true, what is the best outcome?
- If my thought is true, what is the most realistic outcome?
- Can someone I trust think of any other way of understanding this situation?

If you have constructed a balanced/alternative thought that is believable, you will probably notice that the intensity of your uncomfortable feelings has diminished. The goal of the cognitive approach is not to eliminate emotions. Instead, it was designed to help you gain a broader perspective on a situation so that your emotional reactions are balanced responses to the total circumstances of your life.

## Stress Tracker 2

Date	Event Who? What? Where? When?	Emotional Rating (how upset?) 1...5...10	Emotional Reaction (feelings - for example, sad, anxious, angry)	Cognitive Reaction (thoughts - what is it that makes this event so upsetting?)	Outcome What happened after initial reaction?	Alternative Response (other possible thoughts, behaviors)
	While hosting a social gathering for work colleagues, I experienced bowel cramping and gas	8 8	embarrassed afraid	Why now? Why did I host this party? If I spend too much time in the washroom people will begin to wonder what's wrong with me?	More muscle tension; heart racing; bowel attack; reluctance to host parties in future.	Just because I have some cramping, doesn't mean I'll have an attack. People may not notice anyway. Maybe I need to listen to my body and slow down for a few minutes right now.
	I was assigned a task for immediate completion by my boss an hour before the end of the day, but also had other deadlines to meet.	6 6	anger anxiety	How will I get this done? He should have asked me if I had time. What a jerk.	Spent 30 minutes trying to organize task priorities; stayed late to complete own work; had to cancel dinner with family	I'll do as much as I can. My boss is under pressure too. Most people understand that sometimes deadlines need to be stretched.
	Late for an important meeting because caught in traffic jam.	8 8 8	anxiety frustration shame	I am going to be late. My boss will think I am disorganized. I will never get that promotion.	Got to the meeting late. Apologized, and was able to do my presentation after the break instead of before the break.	I'm on time 99% of the time, I have often been complimented on my organizational skills. Decisions about promotion are made based on an employee's work performance over time, not one instance.
	Fight with teenage son about curfew/friends.	9 9	anger guilt	Why doesn't he listen? Where did I go wrong? He sure is stubborn. I hope he doesn't get mixed up with the wrong crowd.	Son stormed out of house and didn't come back until after curfew. I talked further with my wife about ways to deal with son.	My son is struggling with issues of independence and becoming an adult. He's a good kid. I'll talk to him about who he's spending time with. Together, we'll develop some flexible rules that we can all live with.
	Having to work through lunch.	8 7	anxiety resentment	I am hungry. I am tired. I can't stand this.	Finished some of the work, but developed a headache.	It's always this way at tax time. I'll give myself a break tonight.



## **COPING THOUGHTS FOR MANAGING IBS SYMPTOMS**

Although stress management is important and can have a positive impact on your IBS symptoms, and physical and emotional well-being, sometimes you may require short-term thinking strategies to help you cope better. The first step is to become aware of what sorts of thoughts you have when you currently experience bowel symptoms. Consider these sorts of self-statements:

"I have no control over my pain." (diarrhea, constipation, etc.)  
"I'll never get better."  
"This is going to get worse and worse until I go crazy."  
"This should never have happened to me."  
"I should have gotten better quicker than this."  
"I can't function when I get bowel symptoms."  
"No one else can really understand my condition."  
"I'll never be able to enjoy life again."  
"It's all my (job's, boss's, doctor's, family's, spouse's) fault."  
"It's all my fault that I'm in this mess."  
"I can't do many things I enjoy because of bowel symptoms."  
"If I let my bowel symptoms affect my work, others will think there's something wrong with me."  
"If I let my symptoms get in the way of my responsibilities, others will deem me incompetent."

If you can identify with these sorts of self-statements, then perhaps you can consider replacing them with some less pessimistic positive coping self-statements like these:

"I can cope."  
"Relax. I can manage the pain."  
"I have managed this situation before. I can do it again."  
"I'll use relaxation strategies to cope with the situation."  
"I am learning new coping skills every day."  
"I am not a bad person because I have bowel symptoms."  
"The symptoms come and go. I know how to handle them."  
"No one thinks less of me because I have these symptoms."  
"I am a good worker."  
"I am a loving person."  
"If I let go of the tension, I will feel better."  
"I can take mini-breaks to relax when I need to."  
"My symptoms may be a sign that I'm working too hard."  
"My symptoms may be a sign that I'm not taking care of my needs."

On the other side of this page, there is space for you to identify any negative self-statements you may have noticed from the past and counter with some positive thoughts of your own:

**Negative Self-Statements**

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**Positive Self-Statements**

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By becoming more aware of negative coping thoughts, and injecting more positive ones, you will have yet another strategy that you can use in difficult situations, in addition to the relaxation strategies we have already learned.



## DEALING EFFECTIVELY WITH INTERPERSONAL STRESS

Perhaps the greatest source of stress in our daily lives comes from feeling the need to meet the expectations of others. Whether on the job, at school, or at home, seemingly every facet of our lives involves interacting with other people. When others expect or demand more than we can reasonably produce, interpersonal stress can be the result. It is sometimes hard to determine when we have the right to refuse a demand from somebody else, that is, whether the demand is reasonable or unreasonable, particularly if it comes from an employer, parent, spouse, or child. In these cases, it is sometimes easier to just give in to the demand and scramble to meet it even though it inconveniences us greatly. Over a lifetime, having to meet many such demands from others can lead to psychological burn out or exhaustion and chronic physical health problems because we never seem to get a chance to rest and meet our own needs for recuperation. Sometimes, we are driven more by our own need to provide for others, rather than what they might actually think if we say no, because we believe or have been taught to feel that it is impolite to refuse requests from others and that this is how we are judged as people. This section will cover ways in which to become more aware of interpersonal stress in your life and how to deal with it effectively.

Consider the following statements:

Do you think that:

1. *You should always take other people's advice seriously, especially doctors and health care professionals who take time out of their busy schedules just for you?*
2. *You should always respect the views of others, especially if they are in a position of authority?*
3. *It is selfish to put your needs before others' needs?*
4. *You shouldn't take up others' valuable time with your problems?*
5. *You should always try to be logical, consistent, and in control?*
6. *You always have the right to say and do exactly what you feel?*

Or do you think that:

- You have a right to question or disregard the advice of others?*
- You have the right to your own opinions and convictions?*
- You have the right to put yourself first sometimes?*
- You have a right to ask for help or emotional support?*
- You have a right to make mistakes, change your mind, or decide on a different course of action?*
- You realize that sometimes you can and need to hear the other person out and can initially keep your opinions to yourself?*

Statements 1 through four in the left column can lead to passive behavior. When people behave passively, they tend to let others push them around, do not stand up for themselves, and do what they are told, regardless of how they feel about it. **Passive behavior communicates the interpersonal message: "You count, I don't."**

Statements five and six in the left column can lead to aggressive behavior. When people behave aggressively, they tend to blame, threaten, and accuse people without regard for their feelings. Also, they tend not to listen to what others have to say. **Aggressive behavior communicates the interpersonal message: "I count, you don't."**

All of the statements in the right column are assertive statements. Assertive behavior involves direct statements and actions regarding your feelings, thoughts, and wishes. You stand up for your own rights and take into account the rights and feelings of others. You listen attentively and let other people know that you have heard them. You are open to negotiation and compromise, but not at the expense of your own rights and dignity. You can make direct requests and direct refusals. You can deal effectively with criticism, without becoming hostile or defensive. **Assertive behavior communicates the interpersonal message: "I count, you count."**

While passive behavior leads to being taken advantage of by others, and aggressive behavior leads to alienating yourself from others, assertive behavior helps you deal more effectively with interpersonal stress and the symptoms of irritable bowel syndrome. Problems in clear and direct interpersonal communication on the job, at home, or in the doctor's office can be corrected with assertiveness.

Consider the following examples:

Example 1: Your reckless brother wants to borrow your car. You don't want to lend it to him because you don't feel confident that he won't crash it. What do you say?

*Passive: Oh, all right, but please be careful.*

*Aggressive: You've got a lot of nerve asking to borrow my car. I'm not that stupid.*

*Assertive: I don't feel comfortable about the way you drive, so I won't be lending it to you. That doesn't mean that I don't want to help you. Have you thought of renting a car while yours is in for repairs?*

Example 2: Waiting in line at the post office, you are about to be served when someone cuts in and says, "I just have a quick question." There are many people waiting, for various reasons. What would you do?

*Passive: Okay, go ahead.*

*Aggressive: Don't you think I've got better things to do than to wait here and listen to your problem?*

*Assertive: I've been waiting quite a while and it is my turn now. I don't expect to be very long either.*

Based on the responses provided in examples 1 and 2 on the previous page, complete the following example with responses that you think fit the three categories:

Example 3: You are just about to answer a question that your brother has asked you and, while considering your answer, your father answers for you. He has done this ever since you were young. You would like to answer for yourself. Your responses to your father are:

Passive:

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Aggressive:

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Assertive:

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# ROADBLOCKS TO ASSERTION

## Nonassertive Myths

There are commonly held beliefs that some people hold that make it difficult for them to assert themselves. These beliefs are called myths because they are assumed to be true but are rarely tested against reality, and when they are, they are usually found to be untrue. The following are a few examples.

### *Myth of a Good Friend/Close Family*

"He should have known that I didn't want that". "She should have understood why I said that". What you are really saying is "He or she should have been able to read my mind". The assumption or belief is that good friends and close family are able to know how you feel about everything at any given moment. However, even couples who have been married for years cannot anticipate or know everything about the way their partner feels. In addition, what you hold as important is not necessarily the same as what other friends or family hold as important. For example, you may believe punctuality is important. If a friend is late for a meeting with you, you may think "If he took me seriously or really cared about me, he would be on time". Your friend, though, may see no relationship between how seriously he takes you and how punctual he is, and not understand why you are offended. The best way to resolve this is by open discussion. Communicate what you expected or thought, to let your friends and family know what is important, and be prepared to listen to their views.

### *Myth of Obligation*

"If my friend asks me a favor, I have to agree if I am a true friend". "If I ask a friend a favor, he/she has to agree if that person is a true friend". The assumption is that you are obligated to do whatever a friend asks and vice versa, no matter what. It is like asking a favor is a test of the friendship. If you believe this myth, you will never feel comfortable about asking or giving favors, because you will not see that there is a choice involved. That is, when someone asks you to do something you may feel resentful because you will not be able to say no (because a true friend must comply). Also, it may be difficult to ask anyone to do anything because you will believe they cannot say no.

### *Myth of Sex Roles*

"I shouldn't do that because it is not appropriate for a woman (man)". The assumption here is that you cannot do something or say something simply because you are female (or male). You may confuse what you truly want to say, do or feel with what is the current social view of what men or women should do. Remember, sex roles rarely represent the true nature of females or males, but the view society currently has, which changes from one country to the next, and across one decade to the next. Decide what is right for you, rather than what you think is expected of you. Don't let others use your gender to discount what you are saying. For example, you may be told you are a nagging wife, when what you are really trying to do is give an opinion or stand up for yourself.

## **Emotional Barriers to Assertion: Feelings that get in the Way**

### *Anxiety*

We may not act assertively because of anxiety about what would happen as a result of our assertiveness. For example, we may fear hurting someone's feelings, being criticized, or even losing a friend.

### *Guilt*

We may believe that we should always be able to please others. If we fail to do this, for example, by refusing a request, we may feel guilty. To avoid this feeling of guilt, we then may avoid acting assertively whenever we feel we might displease someone.

### *Fear of Feeling/Looking Ignorant or Stupid*

We may avoid expressing our ideas assertively or asking questions because we are afraid of what others might think.

## INTERPERSONAL RIGHTS AND RESPONSIBILITIES

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### Rights

### Responsibilities

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To speak up

To listen

To take

To give

To have problems

To find solutions

To be comforted

To comfort others

To work

To do your best

To make mistakes

To correct your mistakes

To laugh

To make others happy

To have friends

To be a friend

To criticize

To praise

To have your efforts rewarded

To reward others' efforts

To independence

To be dependable

To cry

To dry tears

To be loved

To love others

To take time for rest and relaxation

To allow others to rest and relax

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### Assertive Responding Exercises

The exercises below are designed to give you practice in considering and developing assertive responses for a variety of situations. The situations presented are common ones which you may have encountered before in your life. The task is to fill in the blank with an assertive response. Remember that an assertive response communicates the interpersonal messages: "I count, You count"; "I respect myself and you"; and "I expect you to respect me." **Choose at least 5 situations which you feel you can best relate to and fill in assertive responses for those 5 situations only.**

1. You take your car to the garage for an oil change and receive a bill for that plus wheel alignment and new spark plugs. You say, \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. You arrange to take turns driving to work with a friend. Each day you drive she has an errand to run on the way home. When she drives, there are no stops made. You say, \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. When you entertain your co-workers, the conversation always turns to shop-talk. You are planning a party and prefer to avoid the usual topics. You say, \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. You're in the bank. The teller asks, "Who's next?" It's your turn. A woman who came in after you says, "I am." You say, \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. You're in a taxi and you suspect that the driver is taking you by a roundabout route. You say, \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
6. You are in a restaurant in the no-smoking section. The person next to you lights up a cigarette. You say, \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
7. You have frequently had adverse reactions to medications in the past. Your doctor gives you a prescription without telling you what side-effects to expect. You say, \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## DEVELOPING AN ASSERTIVE RESPONSE

### 1. *Evaluate Your Rights*

Refer back to your *Interpersonal Rights and Responsibilities* sheet. What do you have a right to ask for in this situation?

### 2. *Designate a Time*

Find a mutually convenient time to discuss the problem with the other person involved. Of course, in some situations, on-the-spot assertiveness is required.

### 3. *State the Problem Situation in Terms of its Consequences for You*

Don't expect other people to be mind readers. Most people are wrapped up in their own thoughts and problems and will have very little idea about what's going on with you unless you state your case explicitly. Clearly outline your point of view, even if what you're describing seems obvious to you. Describe the problem as objectively as you can without using language that blames or judges.

### 4. *Express Your Feelings*

By telling other people about your feelings, you let them know how greatly their behavior affects you and your reactions. Even if the person you're addressing completely disagrees with your position, he or she can at least appreciate your strong feelings on an issue.

Each of us owns our personal feelings. Though it might at first seem hard to believe, nobody causes you to have feelings of fear, anger, or sadness. Other people say and do all kinds of things but it is your perception - your interpretation - of their behavior that is ultimately responsible for what you feel. You don't necessarily choose how you react to people, yet your reaction is based on your perception of the meaning of what they say or do.

In expressing feelings, always be sure to own your reactions rather than blaming them on someone else. You can still point out what the other person did to stimulate your feelings, but be willing to take ultimate responsibility for them. The best way to ensure this is by always remembering to begin statements about your feelings with I rather than You. I - statements acknowledge your responsibility for your feelings, while You - statements generally accuse or judge others, putting them on the defensive and obstructing communication.



5. *Make Your Request*

- a) **Use Assertive Nonverbal Behavior.** Stand squarely, establish eye contact, maintain an open posture, and work on staying calm and self-composed.
- b) **Keep Your Request Simple.** One or two easy-to-understand sentences will usually suffice.
- c) **Avoid Asking for More than One Thing at a Time.**
- d) **Be Specific.** Ask for exactly what you want in direct and specific terms.
- e) **Use I - Statements** like: "I would like ...", "I want to ...", "I would appreciate it if ..."
- f) **Object to Behaviors - Not Personalities.** Referring to problem behavior preserves respect for the other person. Making judgements about others usually puts them on the defensive.
- g) **Don't Apologize for Your Request.**
- h) **Make Requests, Not Demands or Commands.**

6. *State the Consequences of Gaining (or not gaining) the Other Person's Cooperation*

With close friends or intimate partners, stating positive consequences of their compliance with your request can be an honest offer of give-and-take rather than manipulation.

In cases where you are dealing with someone with a history of being resistant and uncooperative, you may describe the natural consequences (usually negative) of a failure to cooperate. If at all possible, any negative consequences should naturally flow out of the objective reality of the situation rather than being something that you arbitrarily impose.

## **Developing An Assertive Response: Sample Scenario**

Jean would like a half hour of uninterrupted peace and quiet while she does her relaxation exercise. Her husband, Frank, has had the tendency to disrupt her quiet time with questions and other attention-seeking maneuvers. Before confronting him she wrote out an assertive response as follows:

1. *Evaluate Your Rights*

"I have a right to have some quiet time to myself."

"I have a right to take care of my need for relaxation."

"I have a right to have my husband respect my needs."

2. *Designate a Time*

"When Frank gets home from work tonight, I'll ask him if we can sit down and discuss this issue. If it's not convenient for him tonight, we'll schedule a time within the next couple of days."

3. *State the Problem Situation in Terms of it's Consequences*

"I've let you know several times that I need half an hour each day for relaxation and I've even shut the door, but you still come in and ask me questions. This disturbs my concentration and interferes with an important part of my program."

4. *Express Your Feelings*

"I feel frustrated when my attention is disrupted. I'm angry when you don't respect my right to have some time for relaxation."

5. *Make Your Request*

"I would like to be uninterrupted during the time my door is closed, other than in cases of dire emergency. I'd like you to respect my right to have half an hour of quiet time each day."

6. *State the Consequences of Gaining Cooperation*

"If you respect my need to have some quiet time, I'll be much better able to spend some time with you afterwards and be a good companion."

## WHEN SIMPLE ASSERTION FAILS: ADVANCED PROTECTIVE SKILLS

In some situations, simple assertion will be met with strong resistance. At these times, we may find that others are behaving irrationally and will not respond to reasonable behavior on our part. In these circumstances, you may need to use protective skills. These are less than ideal in that they rarely resolve a situation in a mutually satisfactory way, but they help us to deal with impossible situations. Protective skills should only be used where we receive an unreasonable response from someone and a more constructive solution is not going to be possible.

### Protection 1: *The Broken Record Technique*

This consists of stating repeatedly what you want in a calm, direct manner with the persistence of a broken record. You can use this technique in situations where you're unwilling to do what the other person suggests, but you find yourself somewhat captive to the other person's persistence. Using the technique, you stay focused on what you want and don't give in to the other person's will. You simply state what you want as many times as you need to, without change or embellishment.

### Protection 2: *Fogging*

Fogging is best used with someone who is being critical of you. It involves agreeing in part with the criticism. You honestly agree with some part of the criticism even when you don't believe all of it. You need to do this in a calm, quiet tone of voice without being defensive or sarcastic. If you don't agree with the specific criticism, you can agree with the general principle behind it and say, "You may be right." When you agree with people, they have little tendency to come back and criticize or argue further. When you respond defensively or argumentatively, it provides something to spar with.

### Protection 3: *Content-to-Process Shift*

This strategy changes the focus of your discussion with someone from the content to a description of what's going on between you. If someone responds to your assertive request in almost any way other than hearing you and replying (eg., changing the topic), you can point out what he or she is doing and bring the focus back to your request.

### Protection 4: *Defusing*

This is a delaying tactic best used when someone responds to your assertive request with intense anger or any other extreme display of emotion. In close relationships, it's important to allow other people to express their strong feelings. Yet at such times they are less likely to be open to hearing your assertive request. It's better to say, "I can see that you're very upset - let's discuss this later."

### Protection 5: ***Sorting Issues***

Often people will mix up issues in order to persuade you to act the way they want. Don't be confused by this tactic. For example, someone close to you might say, "Since you won't lend me the money, it is clear that you don't really care about me." It is important to sort the issues here, for example, "It is not that I don't care for you, it is just that I don't wish to lend money." You may need to combine the broken record technique with this one to get maximum effectiveness.

### Protection 6: ***Assertive Inquiry***

This skill is used to deal with manipulative criticism. It involves asking clarifying questions in order to prompt the other person to be direct; for example, "What is it about what I'm doing that bothers you?" Having the issue clearly defined in an open manner increases the probability of finding a solution to the situation.

### Protection 7: ***Don't Apologize for Asserting Your Needs***

Some people find it easy to get others to do what they want by trying to make them feel guilty. If we have desires to appear perfect or please everyone, we may feel guilty if we don't achieve them. If you find yourself feeling guilty, the first thing to do is ask yourself why you are feeling guilty - what have you not done that you told yourself you "should" have done? The words, "I'm sorry" are frequently overused. The person who is always saying sorry is feeling guilty when there is no need. It is useful to avoid using the words unless you genuinely feel there are good reasons to apologize.

## PROTECTIVE ASSERTION EXAMPLES

### *Broken Record Technique*

Saleslady: May I help you?

You: Yes, thank you. I would like to return this dress and I would like my money back.

Saleslady: We don't usually refund money. Why are you returning the dress?

You: I would like to return this dress and I would like my money back.

Saleslady: Didn't you try the dress on in the store?

You: I would like to return this dress and I would like my money back.

Saleslady: Well, if you're sure you don't want the dress, I'll give you a credit.

You: I don't want a credit, thank you. I want my money back.

Saleslady: Perhaps you would like to exchange the dress for another one. Let me show you some of the other dresses that would look nice on you.

You: No, thank you. I would like to return this dress and I would like my money back.

Saleslady: I've never done that before. I might get into trouble.

You: I understand that this is a problem for you. However, I would like to return this dress and I would like my money back.

Saleslady: I'll have to get some authorization from the manager.

You: O.K.

Manager: May I help you?

You: Yes, thank you. I would like to return this dress and I would like my money back.

Manager: Is there something wrong with the dress?

You: No. I would just like to return it and I would like my money back.

Manager: I'm sorry that you don't like the dress. Here is your refund, and I do hope you will find something else you like in the store.

You: Thank you very much.

## ***Fogging Technique***

Coworker: I have to leave early, and the boss needs this in a half hour, so I'll leave it on your desk. Thanks.

You: Sorry, but I've got a deadline as well from Debbie, so I won't be able to do it.

Coworker: But I'm sure yours can wait. This is really important, and I can't miss my appointment. I know Debbie is out this afternoon, so if you get it to her first thing tomorrow, I'm sure it will be fine.

You: I understand that it's important, and you can't miss your appointment, but I've got a deadline as well, so I won't be able to do it.

Coworker: But you can stay late. You said the kids are staying with your parents.

You: Yeah, that's true, but I've got a deadline as well, so I won't be able to do it.

Coworker: But your deadline can't be more important than mine.

You: That may be true, but I've got a deadline as well, so I won't be able to do it.

Coworker: Why are you being so difficult? You know I haven't been feeling well. I thought you were my friend.

You: I can see why you think I'm being difficult, but I've got a deadline as well, so I can't do it.

Coworker: Are you sure there is no way you can do it?

You: Sorry, but I've got a deadline as well, so I won't be able to do it.

Coworker: Okay, I'll see if Bob can do it.

### ***Content-to-Process Shift***

You: I'd like you to call me when you know you'll be getting home late.

Your Husband: Yes, Sarge.

You: Humor is fine, but it's getting us off the point.

Your Husband: What's the point?

You: I'd really appreciate it if you'd let me know when you'll be getting home late.

Your Husband: You know, I just thought of something. Those nights I get home late, why don't you just not worry about saving dinner for me - I'll pick up something on the way home.

You: You're getting off the point - and I'm beginning to feel very frustrated that you're not listening.

Your Husband: So, you want me to call you if I'm going to be late.

You: Yes, you've got it.

### ***Defusing***

You: I'd like to have mother come down for the holidays.

Your Spouse: What!? Not again! You're going to do this to me again! I absolutely won't have it.

You: I can see that you're upset and I can even understand. Let's talk about it another time.

### ***Assertive Inquiry***

You: Could you drive me to the store now?

Your Spouse: Why don't you get off my case?

You: Why is it such a problem for you to take me to the store now?

Your Spouse: I'm tired of having to take you so many places.

ID# \_\_\_\_\_

### Interpersonal Stress Tracker

Date	Event Who? What? Where? When?	Emotional Reaction (feelings - eg, sad, anxious, angry) Rating 1...5...10	Cognitive Reaction (thoughts - what is it that makes this event so upsetting?)	Alternative Cognitive Response (What are some other ways I can think about this? Is there an alternative perspective?)	Alternative Behavioral Response (Is there an assertive alternative? What else could I say/do?)
	While hosting a social gathering for work colleagues, I experienced bowel cramping and gas	8 embarrassed 8 afraid	Why now? Why did I host this party? If I spend too much time in the washroom people will begin to wonder what's wrong with me?	Just because I have some cramping doesn't mean that I will have an attack. Maybe I need to listen to my body and slow down for a few minutes right now.	I can ask my husband to take over the hosting for awhile, while I take a break, relax, pretend I am a guest.
	I was assigned a task for immediate completion by my boss an hour before the end of the day, but also had other deadlines to meet.	6 anger 6 anxiety	How will I get this done? He should have asked me if I had time. What a jerk.	I'll do as much as I can. My boss is under pressure too. Most people understand that sometimes deadlines need to be stretched.	I will tell my boss I also have other deadlines to meet, and negotiate which ones should take priority. I will ask for more notice next time. I could request overtime for the additional work if I have to stay late.
	Late for an important meeting because caught in traffic jam.	8 anxiety 8 frustration 8 shame	I am going to be late. My boss will think I am disorganized. I will never get that promotion.	I'm on time 99% of the time. I have often been complimented on my organizational skills. Decisions about promotion are made based on an employee's work performance over time, not one instance.	I will apologize for being late, and let the others know I can do my presentation near the end of the meeting.
	Fight with teenage son about curfew/friends.	9 anger 9 guilt	Why doesn't he listen? Where did I go wrong? He sure is stubborn. I hope he doesn't get mixed up with the wrong crowd	My son is struggling with issues of independence and becoming an adult. He's a good kid. I'll talk to him about who he's spending time with. Together, we'll develop some flexible rules that we can all live with.	I will tell my son that I care about him and am willing to listen to his needs and negotiate a reasonable compromise.





## **EFFECTIVE TIME/ACTIVITY MANAGEMENT STRATEGIES FOR COPING WITH IBS**

Many people who suffer with IBS report that they follow very hectic daily schedules involving a number of activities, both at home, and at work. Many have the perception that there never seems to be enough time to complete all that needs to be done such that time itself becomes the obstacle. This perception often leads to what has become known as "time-hurry" behavior or time-urgency. However, this response is ineffective because time passes at a predetermined rate no matter what we do. Furthermore, for an individual who believes that it is more important to meet others' needs first, no matter how big or small, the time to meet one's own needs for rest, relaxation, and recreation almost never comes.

Time or activity management has become an important stress management strategy for individuals suffering with a variety of chronic illnesses such as hypertension, chronic pain, chronic fatigue, and irritable bowel syndrome. It involves a number of helpful strategies for managing our activities within the existing time available.

### *I. Identifying How You Currently Spend Your Time: The Time Pie*

An exercise that is helpful in determining what you do during a day is to draw a pie chart (or time pie). Break up your 24-hour day into the time periods (or wedges of the pie) your different activities require. For example, you may have wedges for sleeping, working at your job, meeting with friends, talking on the phone, reading, watching TV, doing housework, playing with the kids, and so on. This can be an eye-opening activity that people seldom perform. If your schedule is drastically different each day, you may want to create a different time pie for each day of the week. Or, you may only want to create one for weekdays and one for weekends. After you draw your time pie(s), answer the following questions:

1. How many hours of my day are devoted to meeting others' needs?
2. Do all of these activities really need my involvement, or am I reluctant to let go out of habit?
3. How many hours do I have of high-quality recuperative time?
4. What activities can I share with or assign to the person or persons who are currently requiring my time?
5. What activities that I am not currently engaging in would I like to add to (or put back into) my routine?
6. What steps can I take to make my present time pie into a more acceptable time pie?

When you have answered these questions, create a new, more acceptable, but realistic time pie for yourself.

### *II. Setting Priorities And Breaking Activities Into Smaller Steps*

Another helpful time/activity management strategy is to make a list of all the things you have to do and re-order the list so that the most important things come first. Then, keeping in mind that there is only a fixed amount of time in any given day, begin with the most

important thing first. It is also important to evaluate what can reasonably be accomplished in one wedge of the time pie and not blindly attempt to accomplish what we would like to do if everything fell into place. You may also find that there are some activities that seem important at first that you can actually move to another day, delegate to another person, or drop altogether.

If procrastination is a problem, it can help to break complex tasks down into smaller steps so that you can target completing them one-step-at-a-time. It also helps to remind oneself that making mistakes is crucial to trial-and-error learning, that few mistakes are actually irrevocable, and that most people are willing to forgive occasional errors without losing respect for us as people.

### *III. Implementing An Appropriate Activity-Rest Cycle*

This strategy is nothing more than insuring that you never work yourself into exhaustion, frustration, pain, or bowel symptoms. The way to do this is to schedule rest breaks at regular intervals. These breaks can last from 2 minutes to 15 minutes depending on what you are doing. During these breaks you can practice a relaxation technique, go for a walk, stretch, visit with a co-worker, or lie down. The ultimate goal of activity-rest cycling is for you to be able to work without stress, pain, fatigue, or bowel symptoms for approximately 2 hours followed by a 5- to 10-minute relaxation break.

Common roadblocks to activity-rest cycling are beliefs such as:

"I don't do enough as it is. How can I take a break?"

"I have to do things like everyone else, or at least like my mother (or father) did."

"I'm too busy to take a break. What will my family do?"

"I can't ask for help, understanding, or a change in schedule."

"My bowel symptoms are always the same no matter what I do."

### *IV. Monitoring Time-Urgency*

This strategy is a useful way to become aware if you are engaging in time-urgent behavior that may be an indication of time-related stress. First identify a few situations from your day such as while driving, eating, waiting in a line, working, or being in conversation with others. Next, examine your behavior in those situations. What do you notice about your perceived level of time pressure, frustration, and physical feelings? If you are experiencing signs of time-related stress, then you may consider ways in which to relieve yourself of this unwanted source of stress.

### *V. Implementing Strategies For Reducing Time-Urgency*

This final approach enables you to practice behaviors which are incompatible with time-urgency. The purpose of the approach is to desensitize you to the effects of a slower pace by allowing you to experience the emotional and physical benefits of lowered stress. These behavioral exercises are presented for you in a handout.

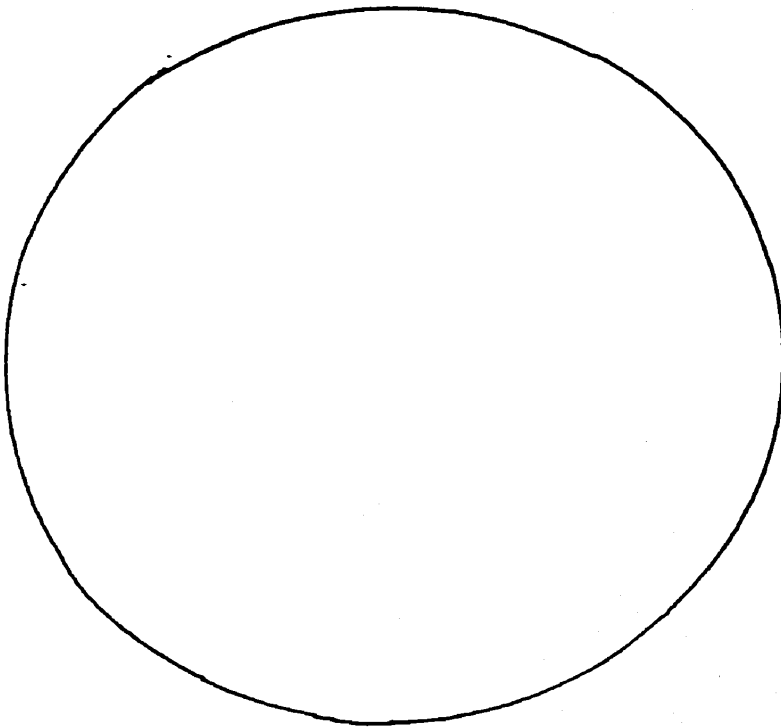
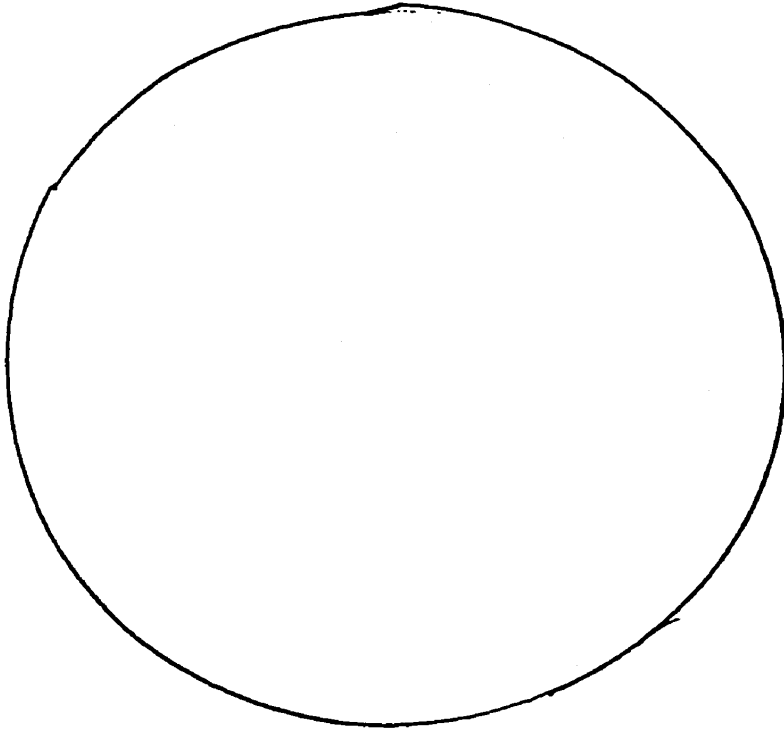
## BEHAVIORAL STRATEGIES FOR REDUCING TIME-URGENCY

1. **Walk, talk, and eat more slowly:** Gives calmer, less tension-filled feedback from the body to the brain, which helps to reduce feelings of time pressure.
2. **Practice doing one thing at a time:** Reduces time pressure as described above, enhances feelings of control, and also helps to restore the ability to focus on one thing, which counteracts the racing-mind syndrome.
3. **Practice listening without interrupting:** Teaches patience and listening skills. Helps develop interest in others' thoughts and ideas, which counteracts egocentrism.
4. **Linger at the table after eating:** Enhances interpersonal relationships and patience.
5. **Drive in one of the slow lanes:** Establishes a slower pace and generally less tension with driving, encourages less attention on speed, and reduces some excessive competitiveness in driving situations.
6. **Stand in a long line and use your mind creatively to take advantage of the wait:** Develops patience and a sense of mastery in waiting situations; encourages creativity for pleasurable thoughts, rather than impatient ones.
7. **Refrain from projecting your time urgency on others:** Helps develop internal monitor, plus encourages awareness of the impact one's behavior has on others.
8. **Create gaps in your daily schedule to allow for unexpected events or to give you free time:** Counteracts tendency to overschedule; helps facilitate a more relaxed pace during daily activities.
9. **Leave off watch:** Curbs habitual attention to time, which reduces the feeling of being controlled by time; helps one be more relaxed during the day. (*Note:* Direct participants who insist they need a watch to place it in a pocket or handbag, so it is available with some extra effort.)
10. **Practice *thinking* about one thing at a time:** Slows racing-mind syndrome; also encourages skills in concentration and focusing.
11. **Routinely practice a meditation or relaxation exercise:** Helps to develop a relaxation response, which can be called on in times of stress.
12. **Listen to soothing music for 30 minutes and do nothing else:** Encourages relaxation, slowing of the mind, and focusing skills.
13. **Practice focusing on the process, rather than just the completion of a task:** Encourages focus on the present rather than the future (i.e., the finish). Also allows for experiencing the process, which may include some pleasurable or joyful moments. Facilitates the retention of memories of the process.
14. **Try to schedule your morning before work so it is not rushed; ideally, give yourself a little idle time:** Allows the day to start with a more relaxed pace, which can often influence the pace of the day; gives feelings of control, because rushing makes one feel out of control.
15. **Tape record conversations at dinner with the family and listen to yourself:** Aids in development of self-monitor, helps "seeing" oneself as others do; this enhances understanding of others' responses.
16. **Take small breaks during long periods of work:** Allows more effective management of pace and tension of work; encourages mental rest and refreshes one's energy level.

🖋️ Please complete and bring to next session.

ID # \_\_\_\_\_

Time Pie A



✎ Please complete and bring to next session.

ID#: \_\_\_\_\_

### TIME URGENCY REDUCTION PRACTICE LOG

Dates: \_\_\_\_\_

This form is designed to help you practice strategies for reducing time-hurry behavior. Choose 3 of the behavioral strategies for time urgency reduction from your handout and practice each of them at least 3 times during the upcoming week.

Time Urgency Reduction Strategies	Circle Days Practiced	Outcome (Easy - Difficult) (1 - 10)	Describe Your General Reaction (Thoughts/Feelings/Physical Reactions)
1. _____ _____ _____	Thur. Fri. Sat. Sun. Mon. Tue. Wed.		
2. _____ _____ _____	Thur. Fri. Sat. Sun. Mon. Tue. Wed.		
3. _____ _____ _____	Thur. Fri. Sat. Sun. Mon. Tue. Wed.		

## **STRATEGIES FOR MAINTAINING NEW COPING BEHAVIORS AND PREVENTING FUTURE SETBACKS**

One of the most important ways you can maintain your new coping style beyond this program is to review the positive changes you have made and realize that you are responsible for these changes. Some participants find it difficult to do this and assume that it was the actual treatment sessions or the therapists who made improvements happen. In actual fact, it was the effort that you put in by coming to the sessions and implementing the coping behaviors into your daily life that initiated these changes. And, it will be the continued application of these strategies that help maintain these improvements and prevent future setbacks.

That being said, experience tells us that no matter how hard we try to keep things running smoothly at home or at work, there are always obstacles that get in the way of effective coping. It is important to remember that it is not the adversity itself that determines our fate, but how we choose to cope with that adversity. This implies that we always have a second chance to recover from setbacks that at the time seem overwhelming. The best way to prepare for future setbacks and prevent more serious problems is **PPR** (not CPR):

- Prevention:** Continue to implement regular stress management strategies that help you to cope with daily demands.
- Preparation:** Identify high-risk situations in which problems are likely to occur. Develop strategies for managing these high-risk situations effectively.
- Recovery:** Develop strategies to evaluate and recover from setbacks when they do occur.

The positive thing to remember is that you have already learned and likely acquired the skills necessary to carry out these steps on your own. You now know more about how your sympathetic nervous system is affected by environmental events, internal thoughts and feelings, and interpersonal stress. You have also learned various strategies to monitor and reduce the physical and emotional symptoms of stress. Remember that when your habitual level of stress or tension is reduced, you have lessened the potential for stress to trigger gastrointestinal symptoms.

A final question to ask yourself is, "How important is my physical and emotional well-being to me?" Try to examine some of the reasons why you may have neglected your own needs in the past and develop a strategy to reduce the likelihood of this happening again in the future.

To assist yourself in preparing for future setbacks, feel free to review the practice exercises that you completed over the course of the group. We will review some of these during our final session.

## RELAPSE PREVENTION AND REVIEW

ID#: \_\_\_\_\_

1. Review of Therapy Gains (i.e., What has changed and/or improved for you? Evaluate your progress in relation to some of the goals that you set in your self-management contract.)
  
2. What do you think has been responsible for these changes?
  
3. What have you learned that was particularly useful?
  
4. Describe, in your own words, all of the preventative and recuperative self-care strategies that were discussed and practiced during the past 9 weeks.
  
5. List any anticipated obstacles or triggers that could interfere with your future gastrointestinal health or lead you to neglect your needs (e.g., increased work demands, time pressure, family crises, symptom flare-ups, lifelong beliefs about what determines our self-worth or makes us a desirable person to others, etc.)
  
6. What specific and realistic steps will you take to maintain your gains and cope with the above obstacles or triggers?

Remember that setbacks and flare-ups may happen, but **THIS DOES NOT MEAN FAILURE**. Setbacks are normal since you do not have 100% control over your symptoms or life stresses. The most important thing you can do is have a plan of action to manage the flare-ups, and use preventive strategies to look after yourself in the best possible way in the meantime.



**Appendix 10**

**Treatment Credibility Rating Scales**





**Appendix 11**

**Treatment Protocol Integrity Checklists**

## GROUP CBT FOR IBS PROTOCOL CHECKLIST: SESSION 1

1. Session Date: DD/MO/YR \_\_\_\_/\_\_\_\_/\_\_\_\_
- \_\_\_\_\_ 2. Rater (1=Jason, 2=Joanna)
- \_\_\_\_\_ 3. Wave (1, 1b, 2, 2b, 3, 3b)
- \_\_\_\_\_ 4. Tape available for this session (1=yes, 2=no)
- \_\_\_\_\_ 5. Tape started at beginning of session (1=yes, 2=no, 3=don't know)
- \_\_\_\_\_ 6. Tape audible for entire session (1=yes, 2=no, 3=don't know)

Session Content Rate each item using this scale (1=yes, 2=no, 3=don't know, 4=not finished in this session, 5=session still ongoing when tape ended)

- \_\_\_\_\_ 7. Review of Symptom Monitoring Homework To Date
- \_\_\_\_\_ 8. Present basic format for group sessions (e.g., education/topic, discussion of previous week's exercises, coping strategies)
- \_\_\_\_\_ 9. Present and discuss myths and facts about IBS and psychological therapy
- Present biopsychosocial model of IBS (i.e., refer to handout of Drossman schematic model)
- \_\_\_\_\_ 10. Genetics and Early Life Experiences
- \_\_\_\_\_ 11. Bowel Motility and Sensitivity Research
- \_\_\_\_\_ 12. Role of Psychosocial Factors in IBS
- \_\_\_\_\_ 13. Mechanism by which Psychosocial Factors and Gut Physiology Interact (ie., CNS-ENS Axis: Thoughts+Feelings - Gut Physiology)

Reviewer's Additional Comments:

## CBGT FOR IBS PROTOCOL CHECKLIST : SESSION 2

1. Session Date: DD/MO/YR \_\_\_\_/\_\_\_\_/\_\_\_\_
- \_\_\_\_\_ 2. Rater (1=Jason, 2=Joanna)
- \_\_\_\_\_ 3. Wave (1, 1b, 2, 2b, 3, 3b)
- \_\_\_\_\_ 4. Tape available for this session (1=yes, 2=no)
- \_\_\_\_\_ 5. Tape started at beginning of session (1=yes, 2=no, 3=don't know)
- \_\_\_\_\_ 6. Tape audible for entire session (1=yes, 2=no, 3=don't know)

Session Content Rate each item using this scale (1=yes, 2=no, 3=don't know, 4=not finished in this session, 5=session still ongoing when tape ended)

- \_\_\_\_\_ 7. Review Readings and Answer Questions from Session 1
- \_\_\_\_\_ 8. Impact of IBS on Behavior / Physical Symptoms / Thoughts and Feelings?  
(Use Whiteboard to record patient examples)

### Stress Management for IBS

- \_\_\_\_\_ 9. Importance of Stress Management for IBS
- \_\_\_\_\_ 10. What is the Stress Response?
- \_\_\_\_\_ 11. What is the Association Between Thoughts, Feelings, and IBS?
- \_\_\_\_\_ 12. Present Cognitive-Behavioral Model of IBS
- \_\_\_\_\_ 13. Overview of CBT Approach and Importance of Home Practice
- \_\_\_\_\_ 14. Goal Setting and Behavioral Contracting
- \_\_\_\_\_ 15. Assign Weekly Exercise: IBS Self-Management Contract

Reviewer's Additional Comments:

**CBGT FOR IBS PROTOCOL CHECKLIST: SESSION 3**

- 1. Session Date: DD/MO/YR \_\_\_\_ / \_\_\_\_ / \_\_\_\_
- \_\_\_\_\_ 2. Rater (1=Jason, 2=Joanna)
- \_\_\_\_\_ 3. Wave (1, 1b, 2, 2b, 3, 3b)
- \_\_\_\_\_ 4. Tape available for this session (1=yes, 2=no)
- \_\_\_\_\_ 5. Tape started at beginning of session (1=yes, 2=no, 3=don't know)
- \_\_\_\_\_ 6. Tape audible for entire session (1=yes, 2=no, 3=don't know)

Session Content Rate each item using this scale (1=yes, 2=no, 3=don't know, 4=not finished in this session, 5=session still ongoing when tape ended)

- \_\_\_\_\_ 7. Collect Symptom Diaries and answer questions
- \_\_\_\_\_ 8. Review patient behavioral contracts
- \_\_\_\_\_ 9. Present Rationale for Relaxation Therapy
- \_\_\_\_\_ 10. Relaxation Practice Guidelines
- \_\_\_\_\_ 11. Difficulties with Relaxation and Suggestions for Handling Difficulties
- \_\_\_\_\_ 12. Relaxed Abdominal Breathing Exercise
- \_\_\_\_\_ 13. Discussion of Relaxed Abdominal Breathing Exercise  
Training in Stress Tracking
- \_\_\_\_\_ 14. Identifying Situations, Emotional Reactions, Thoughts, and Outcome  
(Use Patient or Therapist-Generated Example)
- \_\_\_\_\_ 15. Provide Instructions for filling out Stress Tracker 1
- \_\_\_\_\_ 16. Assign Weekly Exercises: Relaxation Log (1) for Relaxed Breathing  
Practice, Stress Tracker 1 (1), Symptom Diary Week 4

Reviewer's Additional Comments:

**CBGT FOR IBS PROTOCOL CHECKLIST: SESSION 4**

- 1. Session Date: DD/MO/YR \_\_\_\_/\_\_\_\_/\_\_\_\_  
\_\_\_\_\_
- 2. Rater (1=Jason, 2=Joanna)  
\_\_\_\_\_
- 3. Wave (1, 1b, 2, 2b, 3, 3b)  
\_\_\_\_\_
- 4. Tape available for this session (1=yes, 2=no)  
\_\_\_\_\_
- 5. Tape started at beginning of session (1=yes, 2=no, 3=don't know)  
\_\_\_\_\_
- 6. Tape audible for entire session (1=yes, 2=no, 3=don't know)  
\_\_\_\_\_

Session Content Rate each item using this scale (1=yes, 2=no, 3=don't know, 4=not finished in this session, 5=session still ongoing when tape ended)

- \_\_\_\_\_ 7. Collect Symptom Diaries Week 4
- \_\_\_\_\_ 8. Return Behavioral Contracts to Patients
- \_\_\_\_\_ 9. Review Relaxed Breathing Practice
- \_\_\_\_\_ 10. Introduce Progressive Muscle Relaxation (PMR)
- \_\_\_\_\_ 11. Practice PMR
- \_\_\_\_\_ 12. Discuss PMR Practice
- \_\_\_\_\_ 13. Review Stress Tracker 1 Exercise
- \_\_\_\_\_ 14. Introduce Cognitive Restructuring
- \_\_\_\_\_ 15. Illustrate Using Patient-Generated Examples from Stress Tracker 1
- \_\_\_\_\_ 16. Assign Weekly Exercises: Relaxation Practice Log (2) for PMR, Stress Tracker 2 (1), Symptom Diary Week 5

Reviewer's Additional Comments:



## CBGT FOR IBS PROTOCOL CHECKLIST: SESSION 5

1. Session Date: DD/MO/YR \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_
- \_\_\_\_\_ 2. Rater (1=Jason, 2=Joanna)
- \_\_\_\_\_ 3. Wave (1, 1b, 2, 2b, 3, 3b)
- \_\_\_\_\_ 4. Tape available for this session (1=yes, 2=no)
- \_\_\_\_\_ 5. Tape started at beginning of session (1=yes, 2=no, 3=don't know)
- \_\_\_\_\_ 6. Tape audible for entire session (1=yes, 2=no, 3=don't know)

Session Content Rate each item using this scale (1=yes, 2=no, 3=don't know, 4=not finished in this session, 5=session still ongoing when tape ended)

- \_\_\_\_\_ 7. Collect Symptom Diaries Week 5
- \_\_\_\_\_ 8. Review Progressive Muscle Relaxation (PMR) Practice
- \_\_\_\_\_ 9. Introduce Imaginal Relaxation
- \_\_\_\_\_ 10. Practice Imaginal Relaxation
- \_\_\_\_\_ 11. Review Cognitive Restructuring and Questions
- \_\_\_\_\_ 12. Review Stress Tracker 2 (1): Solicit patient examples from the past week and work through them on the board
- \_\_\_\_\_ 13. Introduce Coping Thoughts as an Applied Coping Strategy
- \_\_\_\_\_ 14. Assign Weekly Exercises: Relaxation Practice Log (3) for Imaginal Relaxation Practice, Stress Tracker 2 (2), Symptom Diary Week 6

Reviewer's Additional Comments:

## CBGT FOR IBS PROTOCOL CHECKLIST: SESSION 6

1. Session Date: DD/MO/YR \_\_\_\_ / \_\_\_\_ / \_\_\_\_  
\_\_\_\_\_
2. Rater (1=Jason, 2=Joanna)  
\_\_\_\_\_
3. Wave (1, 1b, 2, 2b, 3, 3b)  
\_\_\_\_\_
4. Tape available for this session (1=yes, 2=no)  
\_\_\_\_\_
5. Tape started at beginning of session (1=yes, 2=no, 3=don't know)  
\_\_\_\_\_
6. Tape audible for entire session (1=yes, 2=no, 3=don't know)  
\_\_\_\_\_

Session Content Rate each item using this scale (1=yes, 2=no, 3=don't know, 4=not finished in this session, 5=session still ongoing when tape ended)

7. Collect Symptom Diaries Week 6  
\_\_\_\_\_
8. Review Imaginal Relaxation Practice  
\_\_\_\_\_
9. Introduce and Practice Shortened Progressive Muscle Relaxation (PMR)  
\_\_\_\_\_
10. Review Stress Tracker 2 (2): Solicit patient examples from the past week and work through them on the board  
\_\_\_\_\_
11. Introduce Interpersonal Stress and Assertive Coping  
\_\_\_\_\_
12. Examples of Interpersonal Situations and Various Responses (Use Examples from Weekly Reading)  
\_\_\_\_\_
13. Roadblocks to Assertion: Myths and Emotional Barriers  
\_\_\_\_\_
14. Interpersonal Rights and Responsibilities  
\_\_\_\_\_
15. Assign Weekly Exercises: Stress Tracker 2 (3), Assertive Responses to Sample Situations, Symptom Diary Week 7  
\_\_\_\_\_

Reviewer's Additional Comments:

## CBGT FOR IBS PROTOCOL CHECKLIST: SESSION 7

1. Session Date: DD/MO/YR \_\_\_\_ / \_\_\_\_ / \_\_\_\_

\_\_\_\_\_ 2. Rater (1=Jason, 2=Joanna)

\_\_\_\_\_ 3. Wave (1, 1b, 2, 2b, 3, 3b)

\_\_\_\_\_ 4. Tape available for this session (1=yes, 2=no)

\_\_\_\_\_ 5. Tape started at beginning of session (1=yes, 2=no, 3=don't know)

\_\_\_\_\_ 6. Tape audible for entire session (1=yes, 2=no, 3=don't know)

Session Content Rate each item using this scale (1=yes, 2=no, 3=don't know, 4=not finished in this session, 5=session still ongoing when tape ended)

\_\_\_\_\_ 7. Collect Symptom Diaries Week 7

\_\_\_\_\_ 8. Review Applied Relaxation

\_\_\_\_\_ 9. Review Stress Tracker 2 (3): Solicit patient examples from the past week and work through them on the board

\_\_\_\_\_ 10. Review Assertive Responding Exercise

Introduce Advanced Assertiveness Material

\_\_\_\_\_ 11. Developing An Assertive Response (Review Example Handout)

\_\_\_\_\_ 12. Introduce Protective Assertion Skills (Therapists Role-Play Protective Assertion Examples)

\_\_\_\_\_ 13. Introduce Interpersonal Stress Tracking

\_\_\_\_\_ 14. Assign Weekly Exercises: Interpersonal Stress Tracker (1), Symptom Diary Week 8

Reviewer's Additional Comments:

## CBGT FOR IBS PROTOCOL CHECKLIST: SESSION 8

1. Session Date: DD/MO/YR \_\_\_\_ / \_\_\_\_ / \_\_\_\_  
\_\_\_\_\_
2. Rater (1=Jason, 2=Joanna)  
\_\_\_\_\_
3. Wave (1, 1b, 2, 2b, 3, 3b)  
\_\_\_\_\_
4. Tape available for this session (1=yes, 2=no)  
\_\_\_\_\_
5. Tape started at beginning of session (1=yes, 2=no, 3=don't know)  
\_\_\_\_\_
6. Tape audible for entire session (1=yes, 2=no, 3=don't know)  
\_\_\_\_\_

Session Content Rate each item using this scale (1=yes, 2=no, 3=don't know, 4=not finished in this session, 5=session still ongoing when tape ended)

- \_\_\_\_\_ 7. Collect Symptom Diaries Week 8
- \_\_\_\_\_ 8. Review Applied Relaxation
- \_\_\_\_\_ 9. Review/Discuss Interpersonal Stress Management Strategies
- \_\_\_\_\_ 10. Review Interpersonal Stress Tracker: Solicit patient examples from the past week and work through them on the board  
Introduce Time/Activity Management Skills
- \_\_\_\_\_ 11. Introduce Concept of Time-Hurry Behavior or Time-Urgency
- \_\_\_\_\_ 12. Identifying Current Time Use: The Time Pie
- \_\_\_\_\_ 13. Introduce Concept of Activity-Rest Cycling
- \_\_\_\_\_ 14. Behavioral Strategies for Reducing Time Urgency
- \_\_\_\_\_ 15. Assign Weekly exercises: Interpersonal Stress Tracker (2), Symptom Diary Week 9, Time Pie, Time Urgency Reduction Practice Log

Reviewer's Additional Comments:

## CBGT FOR IBS PROTOCOL CHECKLIST: SESSION 9

1. Session Date: DD/MO/YR \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_
- \_\_\_\_\_ 2. Rater (1=Jason, 2=Joanna)
- \_\_\_\_\_ 3. Wave (1, 1b, 2, 2b, 3, 3b)
- \_\_\_\_\_ 4. Tape available for this session (1=yes, 2=no)
- \_\_\_\_\_ 5. Tape started at beginning of session (1=yes, 2=no, 3=don't know)
- \_\_\_\_\_ 6. Tape audible for entire session (1=yes, 2=no, 3=don't know)

Session Content Rate each item using this scale (1=yes, 2=no, 3=don't know, 4=not finished in this session, 5=session still ongoing when tape ended)

- \_\_\_\_\_ 7. Collect Symptom Diaries Week 9
- \_\_\_\_\_ 8. Review Interpersonal Stress Tracker (2): Solicit patient examples from the past week and work through them on the board
- \_\_\_\_\_ 9. Review Time Pie Exercise
- \_\_\_\_\_ 10. Review Behavioral Drills for Reducing Time Urgency Exercise
- \_\_\_\_\_ 11. Introduce Relapse Prevention Strategies
- \_\_\_\_\_ 12. Assign Weekly Exercises: Symptom Diary Week 10, Time Urgency Reduction Practice Log (2), Relapse Prevention and Review Form

Reviewer's Additional Comments:

**CBGT FOR IBS PROTOCOL CHECKLIST: SESSION 10**

1. Session Date: DD/MO/YR \_\_\_\_/\_\_\_\_/\_\_\_\_
- \_\_\_\_\_ 2. Rater (1=Jason, 2=Joanna)
- \_\_\_\_\_ 3. Wave (1, 1b, 2, 2b, 3, 3b)
- \_\_\_\_\_ 4. Tape available for this session (1=yes, 2=no)
- \_\_\_\_\_ 5. Tape started at beginning of session (1=yes, 2=no, 3=don't know)
- \_\_\_\_\_ 6. Tape audible for entire session (1=yes, 2=no, 3=don't know)

Session Content Rate each item using this scale (1=yes, 2=no, 3=don't know, 4=not finished in this session, 5=session still ongoing when tape ended)

- \_\_\_\_\_ 7. Collect Symptom Diaries Week 10
- \_\_\_\_\_ 8. Review Behavioral Drills for Reducing Time Urgency Exercise
- \_\_\_\_\_ 9. Review Relapse Prevention Questions and Strategies
- \_\_\_\_\_ 10. Termination Issues and Closing Thoughts
- \_\_\_\_\_ 11. Hand out Post-Treatment Packages

Reviewer's Additional Comments:

**Appendix 12**

**Pain Stages of Change Questionnaire**

## PART D: COPING WITH PAIN

This questionnaire was designed to help us better understand the way you view your pain problem. Each statement describes how you may feel about this particular problem. Please indicate the extent to which you tend to agree or disagree with each statement. In each example, please make your choice based on how you feel right now, not how you have felt in the past or how you would like to feel. If you do not experience abdominal pain as one of your symptoms, then substitute your primary symptom (e.g, diarrhea) in place of the word "pain" and answer accordingly. If you choose to substitute another symptom in place of "pain", please indicate the symptom you have chosen: \_\_\_\_\_.

	Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree
1. I have been thinking that the way I cope with my pain could improve.	1	2	3	4	5
2. I am developing new ways to cope with my pain.	1	2	3	4	5
3. I have learned some good ways to keep my pain problem from interfering with my life.	1	2	3	4	5
4. When my pain flares up, I find myself automatically using coping strategies that have worked in the past, such as a relaxation exercise or mental distraction technique.	1	2	3	4	5
5. I am using some strategies that help me better deal with my pain problem on a day-to-day basis.	1	2	3	4	5
6. I have started to come up with strategies to help myself control my pain.	1	2	3	4	5
7. I have recently realized that there is no medical cure for my pain condition, so I want to learn some ways to cope with it.	1	2	3	4	5
8. Even if my pain doesn't go away, I am ready to start changing how I deal with it.	1	2	3	4	5
9. I realize now that it's time for me to come up with a better plan to cope with my pain problem.	1	2	3	4	5
10. I use what I have learned to help keep my pain under control.	1	2	3	4	5
11. I have tried everything that people have recommended to manage my pain and nothing helps.	1	2	3	4	5
12. My pain is a medical problem and I should be dealing with physicians about it.	1	2	3	4	5
13. I am currently using some suggestions people have made about how to live with my pain problem.	1	2	3	4	5



	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Unsure</b>	<b>Agree</b>	<b>Strongly Agree</b>
14. I am beginning to wonder if I need to get some help to develop skills for dealing with my pain.	1	2	3	4	5
15. I have recently figured out that it's up to me to deal better with my pain.	1	2	3	4	5
16. Everybody I speak with tells me that I have to learn to live with my pain, but I don't see why I should have to.	1	2	3	4	5
17. I have incorporated strategies for dealing with my pain into my everyday life.	1	2	3	4	5
18. I have made a lot of progress in coping with my pain.	1	2	3	4	5
19. I have recently come to the conclusion that it's time for me change how I cope with my pain.	1	2	3	4	5
20. I'm getting help learning some strategies for coping better with my pain.	1	2	3	4	5
21. I'm starting to wonder whether it's up to me to manage my pain rather than relying on physicians.	1	2	3	4	5
22. I still think despite what doctors tell me, there must be some surgical procedure or medication that would get rid of my pain.	1	2	3	4	5
23. I have been thinking that doctors can only help so much in managing my pain and that the rest is up to me.	1	2	3	4	5
24. The best thing I can do is find a doctor who can figure out how to get rid of my pain once and for all.	1	2	3	4	5
25. Why can't someone just do something to take away my pain?	1	2	3	4	5
26. I am learning to help myself control my pain without doctors.	1	2	3	4	5
27. I am testing out some coping skills to manage my pain better.	1	2	3	4	5
28. I have been wondering if there is something I could do to manage my pain better.	1	2	3	4	5
29. All of this talk about how to cope better is a waste of my time.	1	2	3	4	5
30. I am learning ways to control my pain other than with medications or surgery.	1	2	3	4	5

**Appendix 13**  
**Homework Checklist**



**Appendix 14**

**Client Satisfaction Questionnaire**

## CLIENT SATISFACTION QUESTIONNAIRE

ID#: \_\_\_\_\_

This questionnaire is designed to help us obtain your feedback on our program in order to improve our level of service in the future. Please give us your impressions of the program by answering the following questions.

---

1. How would you rate the quality of the service you received?

1  
Excellent

2  
Good

3  
Fair

4  
Poor

---

2. Did you get the kind of service you wanted?

1  
No, definitely not

2  
No, not really

3  
Yes, generally

4  
Yes, definitely

---

3. To what extent did this program meet your needs?

1  
Almost all of my needs  
have been met

2  
Most of my needs  
have been met

3  
Only a few of my needs  
have been met

4  
None of my needs  
have been met

---

4. If a friend were in need of similar help, would you recommend our program to him or her?

1  
No, definitely not

2  
No, I don't think so

3  
Yes, I think so

4  
Yes, definitely

---

5. How satisfied were you with the amount of help you received?

1  
Quite Dissatisfied

2  
Indifferent or Mildly  
Dissatisfied

3  
Mostly Satisfied

4  
Very Satisfied

---

6. Did the services you received help you to deal more effectively with your problems?

1  
Yes, they helped  
a great deal

2  
Yes, they helped  
somewhat

3  
No, they really  
didn't help

4  
No, they seemed to  
make things worse

---

7. In an overall, general sense, how satisfied were you with the service you have received?

1  
Very Satisfied

2  
Mostly Satisfied

3  
Indifferent or Mildly  
Dissatisfied

4  
Quite Dissatisfied

---

8. If you were to seek help again, would you come back to our program?

1  
No, definitely not

2  
No, I don't think so

3  
Yes, I think so

4  
Yes, definitely

---

**Appendix 15**  
**Group Attitude Scale**

## PART I: IMPRESSIONS ABOUT GROUP

This is a questionnaire designed to assess how you felt about being in this group. Please read each item carefully and circle the number which best describes your impressions of the group.

	Agree	Disagree
1. During the course of this group, I always wanted to remain a member of it.	1 2 3 4 5 6 7 8 9	
2. I liked my group.	1 2 3 4 5 6 7 8 9	
3. I looked forward to coming to this group.	1 2 3 4 5 6 7 8 9	
4. I didn't care what happened in this group.	1 2 3 4 5 6 7 8 9	
5. I felt involved in what was happening in my group.	1 2 3 4 5 6 7 8 9	
6. I seriously considered dropping out of the group.	1 2 3 4 5 6 7 8 9	
7. I dreaded coming to this group.	1 2 3 4 5 6 7 8 9	
8. I wished it were possible for the group to end sooner.	1 2 3 4 5 6 7 8 9	
9. I was dissatisfied with the group.	1 2 3 4 5 6 7 8 9	
10. If it were possible to move to another group, I would have.	1 2 3 4 5 6 7 8 9	
11. I felt included in the group.	1 2 3 4 5 6 7 8 9	
12. In spite of individual differences, a feeling of unity existed in my group.	1 2 3 4 5 6 7 8 9	
13. Compared to other groups I know of, I felt my group was better than most.	1 2 3 4 5 6 7 8 9	
14. I didn't feel a part of the group's activities.	1 2 3 4 5 6 7 8 9	
15. I feel it would have made a difference to the group if I were not here.	1 2 3 4 5 6 7 8 9	
16. If I were told my group would not meet on a given day, I would feel badly.	1 2 3 4 5 6 7 8 9	
17. I felt distant from the group.	1 2 3 4 5 6 7 8 9	
18. It made a difference to me how this group turned out.	1 2 3 4 5 6 7 8 9	
19. I feel my absence would not have mattered to the group.	1 2 3 4 5 6 7 8 9	
20. I would feel badly if I had to miss a meeting of this group.	1 2 3 4 5 6 7 8 9	

**Appendix 16**

**Post-Treatment Global Evaluation Questionnaire**



## PART A: GLOBAL EVALUATION SCALE

ID#: \_\_\_\_\_

The following scale contains questions about components of our program. For each item, please circle the number that best reflects how well our program helped you to learn or achieve the following (**as compared to before the treatment program**):

### Overall Evaluation

1. In general, evaluate your gastrointestinal symptoms *during the past 4 weeks* (as compared to before the program).

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Worse than before	Unchanged	Somewhat relieved	Considerably relieved	Completely relieved

2. In general, evaluate your abdominal pain *during the past 4 weeks* (as compared to before the program).

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Worse than before	Unchanged	Somewhat relieved	Considerably relieved	Completely relieved

3. Evaluate your general level of effectiveness at managing stress *during the past 4 weeks* (as compared to before the program).

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Worse than before		Somewhat better		Much improved

### General Learning (Knowledge) (as compared to before the program)

4. Rate your general understanding about Irritable Bowel Syndrome.

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
About the same		Somewhat better understanding		Much better understanding

5. Rate your general understanding about the effects of stress on the mind and body.

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
About the same		Somewhat better understanding		Much better understanding

6. To what extent did you achieve the goals you set early in the program?

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Not at all		Achieved some goals		Achieved most goals

Relaxation Strategies

7. (a) How effective are you at achieving a relaxed state when using a relaxation strategy that was presented in the group?

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Not at all effective		Somewhat effective		Very effective

(b) How often do you use a relaxation strategy that was presented in the group?

<b>0.</b>	Never
<b>1.</b>	Once/week
<b>2.</b>	More than once/week
<b>3.</b>	Once/day
<b>4.</b>	Twice/day

(c) For you, how important is using a relaxation strategy to cope with Irritable Bowel Syndrome?

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Not important		Somewhat important		Very important

(d) Rank order, from first to third, the relaxation strategy that you found most effective for coping with Irritable Bowel Syndrome:

_____	Abdominal breathing
_____	Progressive tensing and releasing
_____	Pleasant imagery

Identifying Symptom Triggers

8. (a) How effective are you at tracking situations, emotions, and thinking in order to identify symptom triggers?

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Not at all effective		Somewhat effective		Very effective

(b) How often do you use this strategy?

<b>0.</b>	Never
<b>1.</b>	Once/week
<b>2.</b>	More than once/week
<b>3.</b>	Several days/week
<b>4.</b>	Every day

(c) For you, how important is identifying symptom triggers for coping with Irritable Bowel Syndrome?

0                      1                      2                      3                      4  
Not important                      Somewhat important                      Very important

Thinking Strategies

9. (a) How effective are you at identifying and changing unproductive thinking to more realistic thinking?

0                      1                      2                      3                      4  
Not at all effective                      Somewhat effective                      Very effective

(b) How often do you use this coping strategy?

0. Never  
1. Once/week  
2. More than once/week  
3. Several days/week  
4. Every day

(c) For you, how important are thinking strategies for coping with Irritable Bowel Syndrome?

0                      1                      2                      3                      4  
Not important                      Somewhat important                      Very important

Dealing with Interpersonal Stress

10. (a) How effective are you at asserting your needs with others? (i.e., family, friends, boss, physicians)

0                      1                      2                      3                      4  
Not at all effective                      Somewhat effective                      Very effective

(b) How often do you assert your needs with others?

0. Never  
1. Once/week  
2. More than once/week  
3. Several days/week  
4. Every day

(c) For you, how important is asserting your needs for coping with Irritable Bowel Syndrome?

0                      1                      2                      3                      4  
Not important                      Somewhat important                      Very important



**Appendix 17**  
**Medication Tracker**

