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Adaptation of a Multicomponent Treatment for Irritable Bowel Syndrome to a Small-Group Format

Edward B. Blanchard[1] **and Shirley P. Schwarz**
State University of New York at Albany

We evaluated a multicomponent treatment program for IBS that had been adapted to a small-group format. Patient acceptance was satisfactory with 14 of 17 potential patients completing treatment. No reductions of GI symptoms were noted in a 12-week symptom-monitoring baseline phase; diarrhea became significantly worse. Treatment led to significant ($p < .05$) reductions in abdominal pain and diarrhea. Nine of 14 (64.3%) patients were clinically improved.

Descriptor Key Words: irritable bowel syndrome; relaxation training; thermal biofeedback; cognitive stress coping.

In a recent report (Neff & Blanchard, 1987) we described a multicomponent treatment program for irritable bowel syndrome (IBS) that was effective, when administered on an individual basis, across three small-scale replications: 2 out of 4 patients, 6 out of 10 patients, and 4 out of 7 patients were clinically improved. A 1-year follow up of 14 of the latter 17 patients found 8 of the 14 (57.1%) still classified as a clinical success on the basis of records from a symptom diary (Schwarz, Blanchard, & Neff, 1986).

That treatment program comprised 12 *individual* sessions of approximately 1 hour's duration over 8 weeks. Given the general concern with cost containment in health care, an obvious extension of this work was to evaluate this treatment in a small-group format. This report describes a quasi-experimental evaluation (Campbell & Stanley, 1966) of this treatment.

[1]Address all correspondence to Dr. Edward B. Blanchard, Center for Stress and Anxiety Disorders, 1535 Western Avenue, Albany, New York 12203.

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METHOD

Subjects

Fourteen patients (3 males, 11 females) with IBS completed treatment. Age ranged from 21 to 73 ($\bar{X}$ = 38.4 years). They reported IBS symptoms for an average of 6.3 years (see Table II). One female patient dropeed out after 4 weeks of treatment. Two male patients who completed 12 weeks of symptom monitoring declined treatment when told it would be in a small-group format.

The patients were diagnosed as suffering from IBS by their personal physicians[2] (who also gave permission for them to participate) on the basis of inclusion symptoms and exclusion of inflammatory bowel disease, lactose intolerance, and any other GI disorder. They received a second diagnosis from project staff based upon the Latimer (1983) criteria: the presence of abdominal pain and/or tenderness; bowel-habit disturbance, diarrhea, constipation, or alternating diarrhea and constipation; duration of symptoms of at least 6 months; and a perception by the patient of an association between stressful events and GI symptoms. All but one patient (no. 8) met all of these criteria.

Measures

Our chief dependent measure was the GI Symptom Diary (Neff & Blanchard, 1987), in which patients kept a daily record of their principal gastrointestinal symptoms. They rated their symptoms at the same time each day, using a 5-point rating scale where 0 indicates the symptom is not a problem and 4 indicates it is debilitating. The IBS symptoms rated were abdominal pain, abdominal tenderness, diarrhea, constipation, flatulence, belching, nausea, and vomiting. Patients were asked to rate all these symptoms, not just the ones that were problematic for them, and to add any others which they experienced but which were not on the list. They were also asked to report whether their IBS symptoms caused them to avoid certain foods or activities and whether they had used any medications to alleviate or control their IBS symptoms. Following an initial interview, patients began recording the symptom diaries.

[2]The medical specialites of the referring (and diagnosing) physician were gastroenterology (9 instances), internal medicine (5), and family medicine (2).

Twelve of 14 patients completed a 12-week pretreatment symptom-monitoring phase. The other 2 patients completed only a 2-week symptom-monitoring baseline. All patients completed a similar 2-week symptom-monitoring phase at posttreatment.

Treatment Procedures

Patients were seen in small groups (n = 3 to 6). Two therapists, a Ph.D. psychologist with several years experience in treating psychosomatic disorders and an RN in her 1st year of doctoral study in clinical psychology, conducted all sessions.

The procedures are described in more detail in Neff and Blanchard (1987). Components include (1) education about normal bowel functioning, (2) progressive relaxation, including relaxation by recall and cue-controlled relaxation, (3) six sessions of thermal-biofeedback, and (4) cognitive stress-coping techniques. Adaptation to the small-group format required several modifications. At the first session an individual's potential embarrassment about talking about her "bowel problem" in a group context was addressed.

The thermal-biofeedback training was accomplished with Cyborg J-42 trainers. Each patient had an individual unit oriented such that the digital feedback was visible only to that person. Headphones were available for auditory feedback. The thermistor was attached to the dorsal surface of the third phalanx of the left index finger in each instance. If a patient had shown very good control of hand warming by the fourth session, he or she was then asked to try both cooling and warming in the same session. Patients were given small alcohol-in-glass thermometers for home practice.

They were also given an audio cassette tape of the full 16-muscle group relaxation induction (about 24 minutes) for home practice, made with the voice of the therapist who did the relaxation training; when nearing completion of the relaxation training sessions, they were also given a tape of "relaxation by recall" recorded with the same therapist's voice.

In the cognitive therapy only minimal attention was devoted to individual stressful situations. Patients were asked to volunteer one item from their diaries for discussion. Thus, this portion was more general and didactic than when administered on an individual basis.

Patients were generally supportive of each other and after a few sessions readily discussed aspects of their GI problems and stressful events in their lives.

All patients had previously been tried on various medication regimens and/or special diets. These were held constant during the course of their in-

volvement in the project, i.e., symptom-monitoring baseline and 12 weeks of treatment.

RESULTS

Symptom Diary Data

In Table I are presented the group mean weekly scores for each of the primary symptoms that patients reported at four different periods—namely, the initial 2 weeks of the 12-week symptom-monitoring phase, 2 weeks immediately prior to treatment, 2 weeks posttreatment, and 2 weeks at a 6-week follow-up. We have subjected the data in Table I to analysis using correlated t tests.

For the 12-week symptom-monitoring phase, we compared the first 2 weeks with the last 2 weeks: Only constipation showed an arithmetic decrease in intensity; there were no significant changes in any symptom except diarrhea, which worsened ($t(11) = 2.11$, $p < .05$).

Comparing pre- to posttreatment revealed a reduction in all symptoms except vomiting, which was only minimally reported at either time, and significant reductions in both abdominal pain ($t(13) = 1.98$, $p < .05$) and diarrhea ($t(13) = 2.28$, $p < .05$). The pretreatment means were also compared with those obtained at follow-up; statistically significant improvements occurred in constipation ($t(9) = 2.84$, $p < .05$) and flatulence ($t(9) = 1.92$, $p < .05$), but diarrhea was worse.

In our previous work, a composite primary symptom reduction (CPSR) score has been calculated for each patient in order to evaluate clinical effec-

Table I. Mean Symptom Values Throughout the Study

Symptoms	Beginning of 12-week symptom monitoring ($n = 12$)	Pre-Tx ($n = 14$)	Post-Tx ($n = 14$)	6-week follow-up ($n = 10$)
Abdominal tenderness	3.63	3.50	2.50	2.80
Abdominal pain	5.21	4.89	2.86[b]	2.35
Constipation	4.38	3.43	2.64	1.35[d]
Diarrhea	1.92	2.61[a]	.89[c]	3.75
Flatulence	4.75	5.25	3.64	3.30[e]
Belching	3.13	3.36	2.39	2.50
Nausea	1.79	2.25	1.07	1.55
Vomiting	0	.04	.04	0

[a]Patients significantly worse after 12 weeks of symptom monitoring ($t = -2.11$, $p < .05$).
[b]Patients significantly improved after 8 weeks of treatment ($t = 1.98$, $p < .05$).
[c]Patients significantly improved after 8 weeks of treatment ($t = 2.28$, $p < .05$).
[d]Patients significantly improved at 6-week follow-up over pretreatment levels ($t = 2.84$, $p < .05$).
[e]Patients significantly improved at 6-week follow-up over pretreatment levels ($t = 1.92$, $p < .05$).

tiveness. The CPSR is the average of the one, two, or three symptom reduction scores (STS) for primary IBS symptoms relevant to a particular patient. The formula for each SRS is:

$$\text{Symptom Reduction Score} = 100 \times \frac{\text{Pretreatment Weekly Average Symptom Score} - \text{End of Treatment Weekly Average Symptom Score}}{\text{Pretreatment Weekly Average Symptom Score}}$$

We have called a patient clinically improved if his or her CPSR was 50% or greater. On the basis of this criterion, 9 of 14 patients (64.3%) were clinically improved, essentially replicating the results of Neff and Blanchard (1987).

Adequacy of Self-Regulatory Treatment

Relaxation Depth. During the five sessions devoted to relaxation training, an observer rated the depth of relaxation for each patient on Schilling and Poppen's (1983) Behavioral Relaxation Rating Scale (BRRS). The BRRS evaluates whether 10 different behavioral criteria of relaxation are achieved

Table II. Subject Characteristics and Composite Primary Symptom Improvement Scores

Patient no.	Sex	Age	Primary symptoms[a]	Duration of symptoms (years)	Composite primary symptom reduction score
1	F	28	P,C	6	83%
2	F	73	P,C	12	−20%
3	F	44	P,D	3	52%
4	F	25	P,C	6	−6%
5	F	54	P,C,D	4	100%
6	M	31	P,C,D	4	100%
7	F	31	P,D	10	33%
8	F	38	P	20	100%
9	F	30	P,C,D	4	53%
10	F	40	P,C,D	1	12%
11	F	38	P,C	3	−69%
12	M	21	P,C	1	65%
13[b]	M	51	P,D	0.8	100%
14[b]	F	34	P,D	14	62%
15	M	35	P,D	1	Decline Tx
16	M	28	P,D	4	Decline Tx

[a]P = abdominal pain and tenderness, C = constipation, D = diarrhea.
[b]Two-week baseline only.

or not. The average depth of relaxation across all patients and all sessions was 6.7, indicating a moderate degree of relaxation. Only two patients had average values below 6.0. All but two patients appeared moderately relaxed within the treatment setting.

Temperature Control. We examined the temperature data from the six clinic-based biofeedback sessions by calculating the degree of change from baseline to highest temperature achieved by each patient during each session; these ranged from 0 to 19.9° F, with means across sessions of 1.3° F, 5.5° F, 7.0° F, 2.2° F, 5.5° F, and 7.4° F, respectively. The data were then subjected to a one-way repeated-measures ANOVA, which was statistically significant ($F(5, 60) = 4.40$, $p < .002$). Thus, there was progressively better control of temperature across the treatment sessions. We analyzed the temperature data obtained during the final two biofeedback sessions to evaluate each patient's ability to increase his or her hand temperature from baseline. During session 5, 10 patients raised hand temperature, 2 did not, and 2 were absent. During the final session, 13 patients raised hand temperature and 1 did not. The average highest temperature for these two sessions ranged from 87.1 to 97.4, with a mean of 91.7° F.

DISCUSSION

The results show that our treatment can be adapted successfully to a small-group format and can achieve essentially the same results as were obtained on an individual basis. This contention is supported both by the symptom diary and the CPSR measures; indeed, many of our patients have expressed satisfaction with the group format, particularly from the aspect of finding they are not alone with this chronic ailment.

There are limitations to the above conclusions: (1) The sample was small; (2) no direct comparison to an individually treated group was made; (3) IBS symptoms show a fair degree of variability; and (4) the follow-up is fairly brief. Obviously, replication and extension are needed.

Moreover, there are some drawbacks to the group format. Two males who had been through the pretreatment assessments, including 12 weeks of symptom monitoring, and were ready to join a group withdrew abruptly, and one female patient dropped out of treatment after 4 weeks. We assume that all three found the group approach difficult or embarrassing. It is also our impression that the cognitive treatment was not as effectively administered in the group setting as it could have been on an individual basis, where a patient's individual needs and problems could have been addressed in more depth.

We conclude that this multifaceted treatment approach for IBS works well and lends itself to a group format with some minor modifications. The

potential cost-effectiveness and the mutual support of the patients are definite benefits to be considered.

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