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Effect of nurse-led gut-directed hypnotherapy upon health-related quality of life in patients with irritable bowel syndrome

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Aims and objectives. This study quantified health-related quality of life in a group of irritable bowel syndrome patients and measures changes following a treatment programme of nurse-led gut-directed hypnotherapy.

Background. It is well recognized that health-related quality of life can be severely impaired in patients suffering form the irritable bowel syndrome. Current conventional treatment for irritable bowel syndrome is often unsatisfactory. In contrast it has been shown that gut-directed hypnotherapy is an effective treatment of irritable bowel syndrome with up to three-quarters of patients reporting symptomatic improvement.

Design/method. Seventy-five patients (55 females/20 males, median age 37·1 years, age range 18–64) comprised the study group. Physical symptoms of irritable bowel syndrome were recorded using seven-day diary cards. On presentation the predominant symptoms were abdominal pain (61%), altered bowel habit (32·5%), and abdominal distension/bloating (6·5%) in the patient group. An irritable bowel syndrome quality of life questionnaire was used to define health-related quality of life. Psychological well-being was measured using the Hospital Anxiety and Depression Scale. Data analysis was carried out using MINITAB, Release 12 for Windows.

Results. Physical symptoms statistically improved after hypnotherapy. There were also significant statistical improvements ($P < 0{\cdot}001$) in six of the eight health-related quality of life domains measured (emotional, mental health, sleep, physical function, energy and social role). These improvements were most marked in female patients who reported abdominal pain as their predominant physical symptom. Anxiety and depression improved following treatment.

Conclusion. Gut-directed hypnotherapy has a very positive impact on health-related quality of life with improvements in psychological well-being and physical symptoms. It appears most effective in patients with abdominal pain and distension.

Relevance to clinical practice. This study demonstrates that by integrating complementary therapies into conventional care that gastrointestinal nurses have a potential role in the management of irritable bowel syndrome.

Key words: gut-directed hypnotherapy, health-related quality of life, irritable bowel syndrome, nurse-led clinics, nursing

Introduction

It has been estimated that between 10% and 15% of adults suffer from irritable bowel syndrome (IBS) and the physical, social and economic consequences of this illness are considerable (Drossman *et al.* 1993). IBS accounts for up to 50% of all referrals to out-patient gastroenterology clinics (Smith *et al.* 2004). It is characterized by physical symptoms including altered bowel habit, abdominal pain and distension (Heaton *et al.* 1982). Patients frequently report non-colonic symptoms, such as lethargy, nausea and backache (Whorwell *et al.* 1986). In addition, anxiety and psychosocial problems are common in IBS and have a large impact upon general well-being (Drossman & Thompson 1992).

Therefore IBS can have a significant impact on health-related quality of life (HRQoL) and several studies have clearly shown that HRQoL is adversely affected by IBS (Houghton *et al.* 1996, Luscombe 2000, El-Serag *et al.* 2002). This may be because of physical symptoms, psychological stress (Talley *et al.* 1996), sexual dysfunction (Guthrie *et al.* 1987) and effects upon employment, leisure, travel and diet (Drossman *et al.* 1993).

Given the absence of biological markers of IBS activity there has been a growing interest in the assessment of HRQoL in IBS and it is now recognized as an important outcome measure in IBS and several measurement tools have been developed (Patrick *et al.* 1998, Chassany *et al.* 1999). The objective of the present study was to measure the impact gut-directed hypnotherapy has upon HRQoL as reported by patients.

Diagnosis of IBS

The symptoms of IBS may be chronic or recurrent and can vary between patients in nature and severity. Diagnosis must be based on the presence of key symptoms and IBS is diagnosed positively on the basis of symptom criteria and the exclusion of organic gastrointestinal (GI) illnesses (Camilleri & Choi 1997). Symptom-based diagnostic criteria have been used to define IBS for some time, initially the manning criteria in the 1970s followed by Rome I criteria in 1992 (Thompson *et al.* 1989). The most recent criteria are the Rome II guidelines summarized in Fig. 1 (Thompson *et al.* 1999).

Aetiology of IBS

There is no universal agreement about the aetiology of IBS; it has been speculated that trigger factors could include stress, lifestyle, candida, prolonged use of antibiotics, post-gastroenteritis, emotional trauma, or a combination of these factors.

These criteria state that within the preceding 12 months there should be at least 12 consecutive weeks of abdominal discomfort or pain that has two of the following three features:
- relieved with defecation; and /or
- onset associated with a change in frequency of stool; and/or
- onset associated with a change in form of stool.

(Thompson *et al.* 1999)

Figure 1 Rome II criteria for diagnosing IBS.

Pathophysiology of IBS

The underlying cause of IBS is poorly understood because there are no objective or biochemical disease markers. Consequently, treatment options are often focused on the relief of specific symptoms. Several proposed mechanisms to explain IBS symptoms, include:
- Abnormal perception of GI events;
- Altered intestinal motility;
- Inflammation caused by infection;
- Reduced GI compliance.

There is clearly a close relationship between the central nervous system and the gut, which is referred to as the brain/gut axis. Gut function at the end-organ level is controlled by a very intricate nerve supply, the enteric nervous system. The nerve fibres of the enteric system that line the gut transmit messages of sensations and pain to higher centres in the brain via the afferent arm of the autonomic nervous system.

Treatment of IBS

At present, there is no 'gold standard treatment' for this IBS. Little is known of the pathophysiology of IBS and, as a consequence, medical treatment is often ineffective (Akehurst & Kaltenthaler 2001). In recent years there has been growing interest in the use of complementary therapies in gastroenterology.

Pharmacological treatments

Treatment of IBS by conventional means is often disappointing, with symptoms often failing to respond to traditional treatment. Despite the development of several new drugs drug therapies for IBS are of a limited value and have a poor evidence base (Spiller 1999). Pharmacological options tend to focus upon the predominant IBS symptom(s) and, generally, treatment is empirical and patients may need to receive a number of different agents. The drug chosen usually depends on the patient's presenting symptoms; constipation-predom-

inant IBS is treated differently from diarrhoea-predominant disease. Pharmaceutical agents currently recommended by the British Society of Gastroenterology are summarized in Fig. 2 (Jones *et al.* 2000).

Non-pharmacological interventions: nursing role

Previous research has suggested that a majority of nurses hold negative attitudes towards IBS sufferers. IBS patients are viewed as attention seeking, unable to cope with life, demanding and waste doctors' time (Dancey & Backhouse 1993). However, more recently it has been clearly indicated that these negative perceptions have changed dramatically and that present-day nurses fully understand the need for specialist advice, support and reassurance for IBS patients (Nunn 2003). An understanding of the role of nurses in the assessment and management of patients with IBS, with specific regard to education, reassurance and psychological well-being, is now well established (Smith 2003).

Although it is unlikely that psychological factors cause IBS, they appear to exert a strong influence on some patients with the conditions. Disturbances of mood such as anxiety and depression have also been shown to influence GI function and to occur commonly in IBS patients (Camilleri & Choi 1997).

A clear relationship has been established between psychiatric illness, psychosocial morbidity and IBS in patients who seek medical help. Compared with healthy volunteers, IBS patients have higher scores for anxiety, hostile feelings, sadness, depression, and interpersonal sensitivity as well as sleep disturbance (Gomborone 1995).

There is, however, some difficulty interpreting the implications of the comorbidity between IBS and psychiatric disorders such as anxiety and depression. For example, although anxiety, via the autonomic nervous system, has direct effects upon the GI tract and may lead to exacerbation pain, it is also reasonable to suggest that the symptom of abdominal pain in itself may lead to increased feelings of anxiety. Thus, anxiety may be a cause or a consequence of the symptoms of IBS.

Symptom	Drug
Abdominal pain	Anti-spasmodics (mebeverine, alverine citrate)
	Tricyclic anti-depressants (amitriptyline)
	5-HT receptor antagonists (tegaserod)
Diarrhoea	Anti-diarrhoeal agents (loperamide, cholestyramine)
Constipation	Osomotic laxative (movicol)
	Dietary fibre

(Jones *et al.* 2000)

Figure 2 Drug management of IBS.

Phrases, such as, 'I can't stomach that' or 'gut feeling' highlight the very significant role the gut plays as a vehicle of somatic expression. An understanding of role of psychosocial factors is therefore required to optimize the nursing care of the IBS patient.

Gut-directed hypnotherapy has been shown to improve physical symptoms in IBS patients. Whorwell *et al.* (1984, 1987) reported 80% improvement in abdominal pain, bowel habit and abdominal distension in a group of IBS patients treated by hypnotherapy. This group subsequently showed that hypnotherapy had a positive effect upon a range of other features of this disease and that treatment reduced the rate of absenteeism from work (Houghton *et al.* 1996). More recently, gut-directed hypnotherapy has been demonstrated to be an effective long-term treatment strategy for IBS (Gonsalkorale *et al.* 2003).

There is evidence that nurses can integrate the principles of hypnotherapy into their clinical practice (Larkin 1999). Chapman (2004) has suggested that GI nurses may be the ideal health professional to practice hypnotherapy for patients with IBS. In this study the effect of nurse-led gut-directed hypnotherapy upon physical, symptoms, psychosocial aspects and HRQoL was prospectively evaluated in a group of IBS patients.

Patients and methods

Seventy-five IBS patients underwent gut-directed hypnotherapy. This was conducted as part of a nurse-led treatment programme, which also included education and support. All patients fulfilled the Rome II diagnostic criteria (Thompson *et al.* 1999). Organic GI diseases were excluded by clinical evaluation and by specific radiological and endoscopic tests as appropriate and by long-term clinical follow-up. Predominant symptoms, based upon analysis of weeklong diary recordings are shown in Table 1. Symptom severity was scored 0 (none), 1 (mild), 2 (moderate) and 3 (severe) and this was totalled for each symptom over the seven-day period of the diary.

Table 1 Predominant IBS symptom at presentation

Symptom	No. of patients (%)
Abdominal pain	46 (61)
Abdominal distension	5 (6·5)
Diarrhoea predominant	11 (15)
Constipation predominant	8 (11)
Alternating bowel habit	5 (6·5)

Health-related quality of life

All patients completed a standard IBS-QoL questionnaire (Hahn *et al.* 1997). Briefly, this validated questionnaire comprises 30 items each with eight subscales, with responses of five or six grades, each scoring 0–100.

Psychological assessments

Anxiety and depression were measured using the Hospital Anxiety and Depression questionnaire (Zigmond & Snaith 1983). Gut-directed hypnotherapy was performed by the researcher in line with British Medical and Dental Hypnotherapy guidelines (Heap & Aravind 2001). Prior to hypnotherapy, the concept that the gut is a contractile muscular tube was introduced to the patient. Hypnotherapy was induced by eye fixation and this was followed by conventional deepening and relaxation techniques. Patients were instructed to place their hands upon the site of maximal abdominal discomfort and suggestions of warmth and comfort in this region were made. This was followed by a sequence of suggestions directed to reducing GI symptoms, based upon lessening of muscular contraction in the gut. This process was combined with the use of visual imagery; for example the hypnotherapist encourages the patient to imagine the gut as a river. The constipated patient is encouraged to perceive the river as motionless; the patient then is encouraged to perceive the river flowing freely. The therapist develops the concept of appropriate changes in flow, the flow increases in the constipated patient and decrease in the patient with diarrhoea. Patients are also instructed to place their hands on the abdomen and induce feelings of comfort and warmth in this region. Treatment sessions were concluded by standard ego strengthening exercises. This technique involves the employment of direct suggestions of a highly general nature, aimed at increasing the confidence and positive well-being of the subject (Heap & Aravind 2001). Self-hypnosis was taught at an early stage of treatment and patients were given audiocassettes for use at home to reinforce the effects of hypnotherapy.

Patients received between five- and seven-and-a-half-hour hypnotherapy sessions over a three-month period. Ethical approval for the study was obtained from the local research ethics committee.

Follow-up

Symptom assessment, HRQoL and psychological measurements were undertaken before and three months after treatment.

Statistical analysis

The Wilcoxon signed test was used to compare data obtained before and after therapy. This non-parametric procedure was used as it was not possible to make an assumption about the distribution of the data in the chosen study population. Item measurement theory was used to assess HRQoL results. The response to each questioned was converted to a score ranging from 0 to 100 and these were combined to produce 'scale scores'.

Results

All patients were fully compliant with the study and completed the treatment course.

Physical symptoms

The mean severity, frequency and duration of physical symptoms significantly improved following hypnotherapy (Table 2). This was most marked for abdominal pain and distension. Altered bowel habit was more difficult to analyse because this varied greatly between patients and a perception of improved bowel habit was not reflected in changes of stool frequency or consistency.

Health-related quality of life

The results of HRQoL assessments are summarized in Table 3. It should be noted that low scores reflect good quality of life. Prior to treatment emotional dysfunction and tiredness were particularly prominent. All mean HRQoL scores significantly improved after hypnotherapy; the greatest change being in emotional dysfunction and insomnia. There were no clear gender differences, either at baseline or in response to therapy.

Psychological aspects

The results of the Hospital Anxiety and Depression Scale (HAD) scores are summarized in Table 4. Both before and after hypnotherapy anxiety was more frequent than depression although both were more common than the published

Table 2 Physical symptoms before and after treatment

Predominant symptom	Mean pre-Tx (SD) score	Mean post-Tx (SD) score
Abdominal pain ($n = 75$)	16·2 (11·1)	11·68** (10·4)
Abdominal distension	15·4 (12·3)	11·9** (10·7)

**$P < 0{\cdot}05$.

Table 3 Mean HRQoL scores (SD) before and after treatment

	All patients ($n = 75$)		Male patients ($n = 20$)		Female patients ($n = 55$)	
	Before Tx	After Tx	Before Tx	After Tx	Before Tx	After Tx
Emotional	63·2 (21·3)	33·6 (15·6)*	63·4 (18·2)	31·9 (18·2)*	63·1 (22·6)	34·2 (14·7)*
Mental health	44·4 (21·0)	23·8 (13·3)*	44·0 (23·4)	21·3 (14·9)*	44·5 (20·3)	24·8 (12·7)*
Sleep	38·1 (23·9)	19·9 (20·3)*	39·6 (25·1)	20·0 (19·2)*	37·5 (23·7)	19·8 (20·8)*
Energy	56·6 (24·3)	31·5 (17·9)*	48·0 (21·9)	25·5 (19·0)*	59·8 (24·5)	33·8 (17·1)*
Physical health	41·1 (26·6)	24·9 (18·6)*	39·7 (22·6)	21·7 (19·2)*	41·6 (28·2)	26·2 (18·3)*
Diet	47·5 (22·3)	33·4 (19·0)**	38·3 (20·6)	28·3 (24·1)	50·9 (22·1)	35·3 (16·6)*
Social role	46·2 (22·4)	25·9 (14·3)*	48·5 (21·9)	23·5 (16·7)*	45·4 (22·8)	26·8 (13·3)*
Physical role	39·5 (25·9)	21·8 (18·3)**	44·3 (28·5)	20·7 (16·0)*	37·7 (24·9)	22·3 (19·3)**

*$P < 0{\cdot}001$; **$P < 0{\cdot}05$.

Table 4 Mean (SD) HAD scores before and after treatment

	All patients ($n = 75$)		Male patients ($n = 20$)		Female patients ($n = 55$)	
	Before Tx	After Tx	Before Tx	After Tx	Before Tx	After Tx
Anxiety	49·7 (17·8)	37·9* (14·0)	52·1 (19·3)	37·4** (17·5)	48·8 (17·4)	38·0** (12·6)
Depression	30·5 (15·3)	26·2 (13·1)	32·6 (14·5)	24·7 (14·4)	29·8 (15·6)	26·8 (12·7)

**$P < 0{\cdot}05$.

normal range. The mean anxiety score significantly improved after treatment in both male and female patients. In contrast, the mean scores for depression were similar before and after hypnotherapy.

Discussion

The patients involved in this study were typical of those seen routinely in all general GI clinics. As a group they had both physical and psychosocial symptoms leading to impaired HRQoL. These features were quantified using diary cards and by completion of validated questionnaires. Gut-directed hypnotherapy was associated with significant overall improvements in all symptoms and these findings have directly led to the continuation of a nurse-led gut-directed hypnotherapy clinical service.

The majority of IBS physical symptoms are subjective and difficult to measure. Diary cards are widely used in clinical trials and are most useful in assessing stool frequency. In this study patients subjectively graded the severity of a range of symptoms including abdominal pain and distension. Diary card analysis showed impressive changes in mean pain scores and distension after hypnotherapy (although the relatively small number of subjects who recorded distension as a predominant problem limits the power of the latter). It was more difficult to show changes in bowel function because this varied greatly between patients and with time. The problem for many patients involved in this study was unpredictability of bowel function, varying from days of constipation to periods of loose and frequent stool, rather than consistent diarrhoea or constipation. Diary card analysis could not measure this variability when data were amalgamated and as a consequence changes after intervention were difficult to define.

Anxiety was a common finding in the study group and this has also been noted by other groups in IBS patients (Thompson *et al.* 1997). It contrasts with a relatively low incidence of depression defined by the HAD scores. The cause of anxiety was identified in this study although uncertainty about diagnosis and prognosis, severity of the physical symptoms including faecal urgency and incontinence, impact of the disease upon employment and underlying psychological make-up, may have been important to varying degrees in most patients. Hypnotherapy resulted in a clear improvement in mean anxiety scores and to a lesser improvement in mean depression scores. Others have also commented upon this observation (Palsson *et al.* 2002). The mechanisms by which hypnotherapy alleviates anxiety are speculative and are an area for potential research. Improvement in HRQoL seen in this study may have been due to alleviation of physical symptoms, resolution of anxiety or to other factors.

The impressive changes following hypnotherapy in emotional well-being and insomnia suggest that reduction in anxiety was an effect of hypnotherapy. However, it could also be argued that nursing support itself might contribute to a reduction of anxiety in this patient group. Nurses in GI

clinics should to be aware of the ways in which patients will best respond and the potential benefits of nursing support. Modification of diet, exercise, and stress management have all been demonstrated to lead to improvement in symptoms of IBS. Additionally patients may benefit from attending a self-help group, such as the IBS Network.

This study did not include a control group who might either have undergone no treatment or received an alternative form of standard therapy. The difficulties of either approach are not inconsiderable; a 'no-treatment' arm would probably have been both unethical and unacceptable to the patients and no pharmacological treatments have proven value in IBS. This may be viewed as a limitation in this study. Nevertheless it is difficult to know in this particular trial how much improvement in HRQoL was due to the great deal of attention that each patient received from the nurse therapist and how much benefit was attributable to the specific effect of hypnotherapy. Clearly, further controlled clinical trials are needed in this field, despite the ethical and practical difficulties that these imply.

Despite these limitations, this study does indicate a potential role for GI nurse specialists with appropriate training and education to become therapists of gut-directed hypnosis for the management of IBS.

Contributions

Study design: GS; data analysis: GS; manuscript preparation: GS.

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