Journal of Psychosomatic Research 74 (2013) 493–500

Contents lists available at SciVerse ScienceDirect

Journal of Psychosomatic Research

Negative aspects of close relationships are more strongly associated than supportive personal relationships with illness burden of irritable bowel syndrome ☆

Jeffrey M. Lackner [a,*], Gregory D. Gudleski [a], Rebecca Firth [a], Laurie Keefer [b], Darren M. Brenner [b], Katie Guy [c], Camille Simonetti [a], Christopher Radziwon [a], Sarah Quinton [b], Susan S. Krasner [a,d], Leonard Katz [a], Guido Garbarino [c], Gary D. Iacobucci [a], Michael D. Sitrin [a]

[a] Department of Medicine, University at Buffalo School of Medicine, SUNY, Buffalo, NY, United States
[b] Department of Medicine, Northwestern University Feinberg School of Medicine, Chicago, IL, United States
[c] Science Department, Mamaroneck High School, Mamaroneck, NY, United States
[d] Department of Anesthesiology, University at Buffalo School of Medicine, SUNY, Buffalo, NY, United States

ARTICLE INFO

Article history:
Received 6 February 2013
Received in revised form 8 March 2013
Accepted 18 March 2013

Keywords:
Interpersonal interactions
Social networks
Social support
Health
Comorbidity
Pain
Coping

ABSTRACT

Objective: This study assessed the relative magnitude of associations between IBS outcomes and different aspects of social relationships (social support, negative interactions).
Method: Subjects included 235 Rome III diagnosed IBS patients (M age = 41 yrs, F = 78%) without comorbid GI disease. Subjects completed a testing battery that included the Interpersonal Support Evaluation List (Social Support or SS), Negative Interaction (NI) Scale, IBS Symptom Severity Scale (IBS-SSS), IBS-QOL, BSI Depression, STAI Trait Anxiety, SOMS-7 (somatization), Perceived Stress Scale, and a medical comorbidity checklist.
Results: After controlling for demographic variables, both SS and NI were significantly correlated with all of the clinical variables (SS r's = .20 to .36; NI r's = .17 to .53, respectively; ps < .05) save for IBS symptom severity (IBS-SSS). NI, but not SS, was positively correlated with IBS-SSS. After performing r-to-z transformations on the correlation coefficients and then comparing z-scores, the correlation between perceived stress, and NI was significantly stronger than with SS. There was no significant difference between the strength of correlations between NI and SS for depression, somatization, trait anxiety, and IBSQOL. A hierarchical linear regression identified both SS and NI as significant predictors of IBS-QOL.
Conclusions: Different aspects of social relationships – support and negative interactions – are associated with multiple aspects of IBS experience (e.g. stress, QOL impairment). Negative social relationships marked by conflict and adverse exchanges are more consistently and strongly related to IBS outcomes than social support.

Introduction

Irritable bowel syndrome (IBS) is a common, potentially disabling gastrointestinal (GI) disorder characterized by abdominal pain associated with altered bowel habits (e.g., diarrhea, constipation, or both in an alternating manner). With a prevalence rate of 10–20% in developed countries [1], IBS is one of the most common illnesses seen in primary care and GI practices [2]. Because IBS symptoms are painful, emotionally bothersome, intrusive and mimic symptoms of organic GI diseases, IBS results in significant direct (e.g. use of healthcare-related services such as physician visits, diagnostic tests, and prescription or over the-counter medication) and indirect (work absenteeism, diminished quality of life) costs to patients, the health care industry, and employers [3].

Lacking a reliable biomarker, IBS is best understood from the perspective of a biopsychosocial model [4] that emphasizes the reciprocal and interactive influences of biological, environmental, and psychological processes. Of psychosocial factors, stress exerts an enduring and robust impact on various aspects of IBS [5]. One way that stress influences IBS is by increasing risk of symptom onset. One example comes from research [6] of patients who develop IBS after a bout of infectious gastroenteritis (i.e. post infectious IBS or PI-IBS). While most patients rapidly recover from bacterial gastroenteritis, up to a third of patients experience persistent GI symptoms with a portion of those affected meeting diagnostic criteria for IBS [7]. The onset of stressful life events within three months of the infectious illness represents a major risk factor for developing IBS-PI. A close inspection [8,9] of the type of stressful life events that occur in close temporal proximity to the bacterial infection in individuals who subsequently develop PI-IBS [6] suggests a high

☆ Grant support: This study was funded by NIH Grant No. DK77738.
* Corresponding author at: Department of Medicine, University at Buffalo School of Medicine, SUNY, ECMC, 462 Grider Street, Buffalo, NY 14215, United States. Tel.: +1 716 898 5671; fax: +1 716 898 3040.
E-mail address: lackner@buffalo.edu (J.M. Lackner).

0022-3999/$ – see front matter © 2013 Elsevier Inc. All rights reserved.
http://dx.doi.org/10.1016/j.jpsychores.2013.03.009

frequency of adverse changes in social relationships such as the death of a loved one, disagreements with a supervisor, or the end of a marriage.

The notion that negative aspects of social relationships influence health outcomes is a growing area of investigation [10] After all, humans are social creatures who have an inherent biological need to form and maintain strong, stable, and positive relationships [11], which exposes them to periods of distress when interpersonal encounters take on a tone of conflict, rejection, criticism or intrusiveness. There is considerable research linking negative interactions to psychological well-being [12]. Much less is known about the adverse effects of negative interactions on physical health outcomes [13].

IBS represents an ideal disease state to study the relationship between negative social exchanges and physical health. As noted above and elsewhere there is suggestive evidence that IBS patients are reactive to interpersonal stressors [8,9], and psychological treatments [14] that systematically help the patient resolve their interpersonal problems yield improvement in GI symptoms. IBS is more common among women [15] and women are more likely to experience negative aspects of close relationships [16]. They are more likely to be sensitive to negative social interactions and invest more time and energy in social relationships than men [17–19]. Despite having more close relationships and receiving and giving more support than men, women report higher negative interactions and psychological distress [20]. Interactions that are a source of discord and tension can function as a potent source of stress which if persistent can aggravate GI symptoms by dysregulating brain–gut interactions. In this respect, we would expect that IBS patients who report more negative social exchanges would report more severe IBS symptoms.

Because social relations form a conduit for the exchange of support, they do not necessarily have deleterious effects on health outcomes. Indeed, supportive relationships can protect individuals from a multitude of health problems, and the absence of supportive relationship can increase the risk of serious health outcomes [21,22]. In the case of IBS, Lackner et al. [23] found that social support was inversely related to global IBS symptom severity, abdominal pain, and perceived stress in IBS patients. The researchers found cross sectional data consistent with a stress buffering effect of social support (i.e. support mitigates against the potentially adverse impact of stressful events on abdominal pain which is regarded as a cardinal symptom of IBS). The effect of stress on pain was lessened for those IBS patients with stronger support systems. Psychological stress had a more pronounced effect on pain for those with limited support. Levels of perceived support were unrelated to quality of life impairment.

Thus there are conceptual and empirical reasons to believe that both negative and positive aspects of social relationships are associated with physical health problems in IBS patients. A natural extension of these two lines of research is to determine whether IBS outcomes are more strongly associated with the positive or negative aspects of social relationships. This is an important issue that may help identify interactional patterns that, if targeted, can improve the quality of relationships in important networks (e.g., physician–patient) that influence the physical health and well-being of IBS patients whose symptoms are unresponsive to standard medical treatments. While most of health research has focused on the beneficial aspects of social relationships (e.g., social support), there is reason to believe that negative interactions may have more explanatory value. Negative exchanges have been found to more strongly relate to well-being than positive exchanges. In research with the elderly, Rook et al. [24] refers to this phenomenon as the "negativity effect". Whether the "negativity effect" extends to a younger population of mostly female individuals with functional GI disease is unclear. The primary purpose of this study was to assess the relative magnitude of the association between the severity of somatic complaints and positive vs. negative components of social relationships in a sample of severely affected IBS patients recruited from two academic medical centers as part of an NIH funded clinical trial. Secondary goals were to study the association between the quality of social relationships and other aspects of IBS experience including distress (anxiety, depression), quality of life impairment due to IBS symptoms, and extraintestinal problems including a number of comorbid medical disorders and medically unexplained symptoms (somatization).

Method

Participants

Participants included 235 consecutively evaluated IBS patients recruited primarily through local media coverage and community advertising and referral by local physicians to a tertiary care center at an academic medical center. To qualify, participants must have met Rome III IBS diagnostic criteria [26] without organic gastrointestinal disease (e.g., IBD, colon cancer) as determined by a board-certified study gastroenterologist. Rome criteria define IBS as recurrent abdominal pain or discomfort at least 3 days per month over the last 3 months that is associated with at least 2 of the following: 1) improvement with defecation, 2) onset associated with a change in stool form, or 3) onset associated with a change in the frequency of stool [25]. Because this study was conducted as part of a clinical trial for moderate to severely affected patients with IBS, participants must have also reported IBS symptoms of at least moderate intensity (i.e., symptom occurring at least twice weekly for 6 months and causing life interference). Exclusion criteria were: presence of a comorbid organic GI disease (e.g., IBD) that would adequately explain GI symptoms; mental retardation; current or past diagnosis of schizophrenia or other psychotic disorders; and current diagnosis of unipolar depression with suicidal ideation; current diagnosis of psychoactive substance abuse. Institutional review board approval and written, signed consent were obtained before the study began. This study was completed in full compliance with the Declaration of Helsinki.

Procedure

After a brief telephone interview to determine whether participants were likely to meet basic inclusion criteria, participants were scheduled for a medical examination to confirm IBS diagnosis [26] and psychometric testing, which for the purposes of this study included the test battery described below.

Measurement methods

IBS symptom severity

The Irritable Bowel Syndrome Symptom Severity (IBS-SSS; [79]) is a 5-item instrument used to measure severity of abdominal pain, frequency of abdominal pain, severity of abdominal distension, dissatisfaction with bowel habits, and interference with quality of life, each on a 100-point scale. For four of the items, the scales are represented as continuous lines with endpoints 0% and 100%, with different descriptors at the endpoints and adverb qualifiers (e.g., "not very," "quite") strategically placed along the line. Respondents mark a point on the line between the two endpoints reflecting the extremity of their judgment. The proportional distance from zero is the score assigned for that scale (hence scores range from 0 to 100). The endpoints for the severity items are "no pain" and "very severe," for satisfaction, the endpoints are "not at all satisfied" and "very satisfied," and for interference they are "not at all interferes" to "completely interferes." A final item asks the number of days out of 10 the patient experiences abdominal pain and the answer is multiplied by 10 to create a 0 to 100 metric. The items are summed and thus the total score can range from 0 to 500.

Quality of life

The IBS-QOL [27] is a 34-item measure constructed specifically to assess quality of life impairment due to IBS symptoms [28]. Each item