Perceptual Style and Behavioral Pattern of Individuals With Functional Gastrointestinal Disorders

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The present research examined the perceptual style and coping pattern characterizing individuals with functional gastrointestinal disorders. A matched case-control design was adopted to compare differences among the target group of individuals with functional gastrointestinal disorders (n = 40), a pain control group of individuals with rheumatism (n = 40), and the community control group of healthy individuals (n = 40). Perceptual style was measured by both monitoring and blunting responses to hypothetical stressful situations, and coping pattern was measured by the use of coping strategies in real-life stressful events. Results revealed that participants with functional gastrointestinal disorders differed from their healthy and rheumatic counterparts in having higher monitoring and lower blunting scores and using action-oriented coping strategies regardless of the controllability of stressful situations.

Key words: functional gastrointestinal disorders, stressful events, perceptual style, coping, anxiety

Functional dyspepsia and irritable bowel syndrome are two common problems characterized by functional gastrointestinal symptoms (see Sahay & Axon, 1995; Wittelman & Tytgat, 1995). Researchers have attempted to relate these two functional gastrointestinal disorders to certain pathogenetic physical mechanisms, but inconsistent results have been obtained (see Wittelman & Tytgat, 1995). Without identifiable organic or biochemical causes, however, it has been shown that individuals with these functional gastrointestinal disorders have more negative perceptions of their psychological well-being (e.g., Alexander & Tantry, 1993; Kane, Strohlein, & Harper, 1993), somatic conditions (e.g., Haug, Svebak, Wilhelmsen, Berstad, & Ursin, 1994; Morris, Chapman, & Mayou, 1992), and medical treatment (e.g., Morris et al., 1992; Wilhelmsen, Haug, Ursin, & Berstad, 1995) than healthy individuals and those with peptic ulcer. Moreover, a recent study (Haug, Wilhelmsen, Ursin, & Berstad, 1995) revealed that anxiety, rather than dyspepsia, was the most frequent complaint from participants with these functional gastrointestinal disorders.

Despite the growing interest in exploring psychological symptoms, not many attempts have been made to explore psychological factors related to functional gastrointestinal disorders. To fill this knowledge gap, the present research sought to explore some psychological factors associated with functional gastrointestinal symptoms. One possible factor that differentiates individuals with functional gastrointestinal symptoms from those without such symptoms is monitoring perceptual style. Monitoring and blunting are "cognitive informational styles" (Miller, 1989), the former referring to the tendency to focus one's attention on threatening signals and the latter referring to the tendency to focus one's attention away from threat-related cues (see Miller, Combs, & Kruus, 1993).

Previous research (Hui, Shiu, & Lam, 1991; Morris et al., 1992) has revealed that individuals with functional gastrointestinal disorders have more negative perceptions than healthy individuals. More interesting, it has been shown that individuals with functional gastrointestinal disorders report poorer appraisals of their own health and more somatic complaints than individuals with more severe symptoms (i.e., gastrointestinal symptoms involving structural damage, such as peptic ulcer). In this light, we posited that individuals with functional gastrointestinal disorders may be characterized by a monitoring perceptual style. Specifically, relative to individuals without functional gastrointestinal symptoms, individuals with functional gastrointestinal symptoms may be (a) more likely to focus their attention on threatening information and (b) less likely to distract themselves from threat-related cues.

Apart from perceptual style, another possible factor that differentiates individuals with functional gastrointestinal symptoms from those without such symptoms is discrimina-
tiveness in coping pattern. Previous research (e.g., Billings & Moos, 1985; Chan, 1994) has shown that ineffective use of coping strategies is related to anxiety, depression, and somatic problems. In a myriad of research (e.g., Gal & Lazarus, 1975; Marx & Schulze, 1991), action-oriented coping strategies such as direct action and confrontation have generally been found to mitigate anxiety and depression, but emotion-focused coping strategies such as relaxation and distraction have generally been found to magnify anxiety and depression. However, other studies have revealed stress-magnifying effects of action-oriented strategies and stress-reducing effects of emotion-focused coping (e.g., Collins, Baum, & Singer, 1983; Levenson, Mishra, Hamer, & Hastillo, 1989).

Attempting to resolve this inconsistency, Cheng, Chiu, Hong, and Cheung (1999) used a situational analysis to examine intraindividual differences in the use of coping strategies across different stressors. Their findings showed that participants with the lowest anxiety and depression levels tended to deploy more action-oriented strategies in controllable situations but more emotion-focused strategies in uncontrollable situations. In contrast, those who experienced the highest anxiety and depression levels were those who consistently deployed action-oriented coping regardless of the controllability of stressful situations.

In light of these findings, we propose that participants with functional gastrointestinal symptoms may differ from those without such symptoms in their discriminativeness in coping pattern. Appraising experienced stressful events as having a greater impact (Hui et al., 1991), individuals with functional gastrointestinal symptoms may be more motivated to deploy action-oriented strategies to handle stressful events than are others and may thus have a relatively nondiscriminative action-oriented coping pattern that distinguishes them from those without such symptoms.

In summary, the present research was an initial attempt to examine cognitive and behavioral characteristics of individuals with functional gastrointestinal disorders. We hypothesized that individuals with functional gastrointestinal disorders would be characterized by a monitoring perceptual style and a nondiscriminative action-oriented coping pattern across stressful events involving distinct levels of controllability. We hypothesized that individuals without such symptoms would be less likely to constantly monitor threatening cues and more likely to moderate their use of action-oriented coping regardless of the controllability of stressful events.

Method

Overview

In the present research, both monitoring perceptual style and discriminativeness in coping pattern were examined. A questionnaire comprising eight hypothetical stressful situations was used to assess monitoring perceptual style. Participants indicated their use of monitoring and blunting responses in each of these situations, and these two types of responses were aggregated to form monitoring and blunting scores, respectively.

As a means of assessing discriminativeness in coping patterns, a semistructured interview schedule was developed for use in this study. The more flexible format of semistructured interviews allows researchers to examine stressful events and coping responses at the same time. To elaborate, when a participant reports that she or he has experienced a particular stressful life event, researchers can immediately ask follow-up questions on how she or he coped with it. Therefore, the nature of a stressful life event and, more important, its corresponding coping responses can be obtained. Such a flexible procedure allows researchers to examine these "stress-and-coping pairs," which facilitate the identification of any discriminative use of coping strategies across different types of stressful events. Moreover, participants and researchers may not always perceive the nature of coping behaviors in the same manner (Stone & Neale, 1984). The highly standardized structure of coping questionnaires tends to restrict participants' responses to a limited number of options, and such limited options may reflect researchers' rather than participants' perception of the nature of coping strategies. To prevent such a shortcoming, our interview schedule allows participants to categorize their coping behaviors in an idiosyncratic manner and thus provides richer information on their perception of the nature of coping strategies.

Participants

Participants were 120 Hong Kong adults (60 women and 60 men). Their ages ranged from 29 to 57 years ($M = 39.38$, $SD = 6.39$). This sample comprised three groups, with 40 participants (20 women and 20 men) in each group. The first group was the target group of individuals with functional gastrointestinal disorders; 32 of these individuals had functional dyspepsia, and 8 had irritable bowel syndrome. The proportion of individuals with these two types of functional gastrointestinal disorders was highly similar to that shown in their case records (reported by hospitals in Hong Kong; see Lam, Hui, Shiu, & Ng, 1995). Individuals with these disorders were randomly selected from the registration lists provided by the gastroenterology sections of the Queen Mary Hospital and the Tung Wah Hospital. Only those who were diagnosed endoscopically as having functional rather than structural gastrointestinal symptoms were included.

The second group was the pain control group of individuals with rheumatism, recruited from the Apleichau Clinic. Because abdominal pain is a major symptom of functional dyspepsia and irritable bowel syndrome, a pain control group was included to ensure that any characteristics identified in individuals with functional gastrointestinal disorders were related to their psychological rather than somatic symptoms. In our pilot study, participants were asked to rate their pain severity along a 10-cm visual analog scale with "having no pains at all" at one extreme and "having severe pains at the other." Results revealed that individuals with rheumatism ($M = 7.04$, $SD = 1.06$) and those with functional gastrointestinal disorders ($M = 6.80$, $SD = 1.15$) reported a highly similar level of pain severity, $F(1, 48) = 0.59$, ns.

The third group was the community control group of healthy individuals, recruited from all walks of life and from a single community. Descriptions of this research were posted in businesses, and individuals who were interested in understanding more about physical and mental health were invited to participate. In our matched case-control design, participants in the two control groups matched those in the target group on sex, age, education level, and socioeconomic status.

To eliminate the possibility of overlapping among different participant groups, we screened the recruited participants with functional gastrointestinal disorders or rheumatism in advance to ensure that they (a) had experienced only the target symptoms for more than 4 weeks and (b) had not experienced symptoms from the
Table 1  
Examples of Monitoring (M) and Blunting (B) Items From the Extended Version of the Miller Behavioral Style Scale

<table>
<thead>
<tr>
<th>Situation</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dentist</td>
<td>I would watch the flow of water from my mouth to see if it contained blood. (M)</td>
</tr>
<tr>
<td></td>
<td>I would try to think about pleasant memories. (B)</td>
</tr>
<tr>
<td>Hostage</td>
<td>I would make sure I knew where every possible exit was. (M)</td>
</tr>
<tr>
<td></td>
<td>I would try to sleep as much as possible. (B)</td>
</tr>
<tr>
<td>Layoff</td>
<td>I would try to remember any arguments or disagreements I might have had with the supervisor that would have lowered his opinions of me. (M)</td>
</tr>
<tr>
<td></td>
<td>I would go to the movies to take my mind off things. (B)</td>
</tr>
<tr>
<td>Airplane</td>
<td>I would listen carefully to the engines for unusual noises and would watch the crew to see if their behavior was out of the ordinary. (M)</td>
</tr>
<tr>
<td></td>
<td>I would settle down and read a book or magazine or write a letter. (B)</td>
</tr>
<tr>
<td>Business Dinner</td>
<td>I would pay attention to my behaviors to check if they will annoy others. (M)</td>
</tr>
<tr>
<td>Ballgame</td>
<td>I would sit in a quiet corner and pretend not to see anyone. (B)</td>
</tr>
<tr>
<td></td>
<td>I would judge my performance by noticing the time when the audience boos. (M)</td>
</tr>
<tr>
<td>Early Cancer</td>
<td>I would ignore the audience’s reactions. (B)</td>
</tr>
<tr>
<td></td>
<td>I would pay attention to any signs of deteriorating health. (M)</td>
</tr>
<tr>
<td></td>
<td>I would avoid thinking of the cancer and make myself busy with other things. (B)</td>
</tr>
<tr>
<td>Terminal Cancer</td>
<td>I would pay attention to any signs of deteriorating health. (M)</td>
</tr>
<tr>
<td></td>
<td>I would avoid thinking of the cancer and make myself busy with other things. (B)</td>
</tr>
</tbody>
</table>

Measures

Monitoring perceptual style. Participants’ perceptual style was measured with the Miller Behavioral Style Scale (MBSS; Miller, 1980; Miller & Mangan, 1983), which comprises four hypothetical stressful situations: Dentist, Hostage, Layoff, and Airplane. To broaden the diversity of the hypothetical situations, Cheng and associates (1999) constructed four additional situations—Business Dinner, Ballgame, Early Cancer, and Terminal Cancer—based on both theoretical (Carver & Scheier, 1981, 1982) and empirical (e.g., Baumeister, 1984; Heaton & Sigall, 1989; Miller, Brody, & Summerton, 1988; Miller, Rodolzot, Schroeder, Mangan, & Sedlacek, 1996) grounds. The monitoring and blunting items of the original MBSS situations and those of the newly constructed situations were reliably correlated (correlations ranged from .51 to .76 and from .58 to .79, respectively, ps < .001), indicating that these two sets of items were tapping the constructs of monitoring and blunting, respectively. The extended version of the MBSS (eight situations) has adequate internal consistency (α = .81 for the monitoring subscale, α = .70 for the blunting subscale).

For each hypothetical situation, participants were asked to vividly imagine themselves encountering the situation. Their task was to decide whether they would use a given strategy in handling each of the situations. Eight possible responses, four relating to monitoring and four relating to blunting, were included in each hypothetical situation. Examples of monitoring and blunting responses for these situations are shown in Table 1.

Following Miller’s (1992) scoring method, the monitoring responses endorsed in each of the eight hypothetical situations were aggregated to form a monitoring score ranging from 0 to 32. The blunting responses endorsed in each hypothetical situation were aggregated to form a blunting score, also ranging from 0 to 32. Consistent with previous research (see Miller, 1992), we found that these two subscales are relatively independent (r = -.13, ns), and thus we report monitoring and blunting scores separately.

Discriminativeness in coping pattern. The newly developed semistructured interview schedule consisted of three major sections. Several specific questions were included in each section. The first section comprised questions tapping the number and the subjective appraisals of stressful events experienced in the previous 3 months, whereas the second section comprised questions tapping coping strategies deployed to handle each experienced stressor. The third section included an appraisal scale assessing the anxiety level experienced when encountering the stressful events.

Participants were told that their task was to recall events experienced within the previous 3 months that had a large effect on their lives or led to changes in how they felt about themselves, their relationships with others, and their well-being. These instructions, as used in the study of Compas, Davis, Forsythe, and Wagner (1987), defined stressful events in layperson terms. Participants were first instructed to report a controllable stressful event, defined as “a stressful event having an outcome amenable to change with one’s effort.” If participants recalled that they had experienced controllable stressful events, they were asked to describe one of them in detail, with specific emphasis on its perceived impact. Participants were asked to rate the impact of each experienced stressor on a 7-point scale ranging from having no impact at all (1) to having an extremely great impact (7).

Because this measure is not simply a life-event measure but a questionnaire combining stressful events and coping responses, a nil response in the first section on stressful experiences would generate extensive amounts of missing data not only in this section but also in subsequent sections. To minimize this problem, we encouraged participants who reported experiencing no controllable
stressful events within the previous 3 months to recall any controllable stressful events occurring within the previous 6 or even 12 months. In this research, 19 participants (4 from the functional gastrointestinal group, 6 from the rheumatic group, and 9 from the healthy group) reported experiencing no controllable stressful events within the previous 3 months but one or more controllable stressful events within the previous 6 to 12 months. These participants did not differ significantly on any measures from others in their own group.

Participants were then instructed to recall all of the strategies deployed to handle the particular event and to classify the nature of each recalled strategy into one of nine major categories. The first deployment to handle the particular event and to classify the nature of others in their own group. Participants did not differ significantly on any measures from functional gastrointestinal group, 6 from the rheumatic group, and stressful events within the previous 3 months to recall any.

These participants did not differ significantly on any measures from others in their own group. Furthermore, a category labeled "other" was included in case participants found it difficult to categorize their coping responses. Additional questions could be asked for further elaboration and clarification if necessary.

After determining which stressful events to include, the judges classified the events by type into one of six categories (e.g., see Ellard, Beaurepaire, Jones, Piper, & Tennant, 1990): death, employment, finances, living environment, interpersonal relations, or illness. Participants' endorsement of stressful events in each event type was aggregated, and multivariate analysis of variance (MANOVA) results revealed no within-subject or between-subjects differences in the types of stressful events experienced (Fs < 1.78, ns). For the coping responses, the judges classified the data into dichotomous codes based on participants' categorizations of coping behaviors. To elaborate, the judges assigned a code of 1 (i.e., having used the strategy) to a particular coping category if participants had classified their coping behaviors into it, but they assigned a code of 0 (i.e., not having used the strategy) to a particular coping category if participants had not classified their coping behaviors into it.

Procedure

Interviews were conducted with a single participant at a time in a cubicle of the respective hospital or clinic in which participants were recruited. Healthy individuals were interviewed in cubicles at the University of Hong Kong. Each participant was asked to sign a written consent form that included a brief description of the purpose and procedures of this research. After signing the consent form, participants were asked to complete the extended version of the MBSS and then to attend the interview session. On completion of the interview, all participants were debriefed and thanked for taking part.

Results

Table 2 presents descriptive statistics for all of the major variables. Because the number of stressful events was dissimilar for different participants, probability of strategy usage, rather than total amount of strategy usage, was examined. Probability of strategy usage (0–1) was calculated by dividing the aggregated frequency of a coping strategy by the total number of stressful events reported.

To examine overall group differences, we conducted a multivariate analysis of covariance on the major variables; demographic variables (i.e., sex, age, education level, and socioeconomic status) served as covariates. A significant group effect was revealed, F(14, 101) = 6.57, p < .001, indicating that the three groups differed in both perceptual style and behavioral pattern.

Monitoring Perceptual Style

A major aim of this research was to examine the hypothetical differences in monitoring perceptual style among
the participant groups. A MANOVA was performed to examine between-subjects (group) effects on endorsement of monitoring and blunting responses. Results revealed a significant group effect on both monitoring and blunting, F(2, 117) = 3.75, p < .05, MSE = 0.06. Univariate tests revealed significant group effects on monitoring and blunting as well (Fs > 4.40, ps < .05). Post hoc Tukey honestly significant difference (HSD) tests further indicated that such differences were attributable to higher monitoring and lower blunting scores among participants with functional gastrointestinal disorders than among participants in the other two groups (ps < .05). These results supported our prediction that participants with functional gastrointestinal disorders were characterized by a monitoring perceptual style, as indicated by their higher monitoring and lower blunting scores than those of the other groups.

**Discriminativeness in Coping Pattern**

Another major aim of this research was to examine the hypothetical differences in discriminativeness in coping patterns across stressful events of distinct controllability. As mentioned at the outset, coping pattern was assessed by deployment of coping strategies in both controllable and uncontrollable stressful situations.

We used a MANOVA to examine both between-subjects (group) differences and within-subject (controllability) differences in the deployment of coping strategies across stressful events of distinct controllability. Results revealed significant main effects for group, F(2, 117) = 4.00, p < .001, MSE = 0.05, and for controllability, F(1, 118) = 9.19, p < .001, MSE = 0.06. However, these main effects should be interpreted in light of the significant Group × Controllability interaction, F(2, 117) = 6.98, p < .001, MSE = 0.06. Figure 1 presents the probabilities of strategy usage in both controllable and uncontrollable situations by the three groups.

To further explore this interaction effect, we conducted two sets of post hoc repeated measures MANOVAs. First, we examined within-subject (controllability) effects for each participant group. For participants with functional gastrointestinal disorders, results revealed a nonsignificant controllability effect, F(1, 38) = 5.03. For healthy participants, however, a significant controllability effect was found, F(1, 38) = 8.99, p < .001. Post hoc paired t tests revealed that healthy participants tended to use more direct-action strategies in controllable than in uncontrollable stressful situations, but they used more divert attention, acceptance, relaxation, and escape strategies in uncontrollable than in controllable stressful situations (ts > 2.82, ps < .01). For participants with rheumatism, the controllability effect was also significant, F(1, 38) = 14.48, p < .001. Post hoc paired t tests showed that rheumatic participants tended to use more direct-action strategies in controllable than in uncontrollable stressful situations but used more acceptance, social support, and escape strategies in uncontrollable than in controllable stressful situations (ts > 4.09, ps < .01).

Second, we examined both group and controllability effects for each of the nine coping strategies. Significant Group × Controllability differences were found in the use of direct-action, acceptance, social support, and escape strategies (Fs > 9.88, ps < .001). Results of the post hoc Tukey HSD tests showed that participants with functional gastrointestinal disorders used more direct-action strategies than those in the other two groups, but significant differences were confined to uncontrollable stressful situations. Rheumatic participants used more acceptance strategies than those in the other groups in controllable stressful situations; participants with functional gastrointestinal disorders used fewer such strategies than those in both other groups in uncontrollable situations. In uncontrollable stressful situations only, rheumatic participants used more social support strategies than those in the other two groups. Participants with functional gastrointestinal disorders used more escape

<table>
<thead>
<tr>
<th>Variable</th>
<th>FGD group (n = 40)</th>
<th>Healthy group (n = 40)</th>
<th>Rheumatism group (n = 40)</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Stressful events</td>
<td>2.33</td>
<td>1.99</td>
<td>2.25</td>
<td>1.85</td>
</tr>
<tr>
<td>Perceived impact</td>
<td>6.21</td>
<td>2.03</td>
<td>3.48</td>
<td>2.15</td>
</tr>
<tr>
<td>Monitoring</td>
<td>24.28</td>
<td>4.18</td>
<td>21.33</td>
<td>6.70</td>
</tr>
<tr>
<td>Blunting</td>
<td>13.00</td>
<td>4.96</td>
<td>19.65</td>
<td>5.71</td>
</tr>
<tr>
<td>Divert attention</td>
<td>.19</td>
<td>.14</td>
<td>.37</td>
<td>.15</td>
</tr>
<tr>
<td>Perspective taking</td>
<td>.28</td>
<td>.25</td>
<td>.38</td>
<td>.23</td>
</tr>
<tr>
<td>Direct action</td>
<td>.79c</td>
<td>.29</td>
<td>.51</td>
<td>.23</td>
</tr>
<tr>
<td>Catharsis</td>
<td>.57c</td>
<td>.30</td>
<td>.34</td>
<td>.28</td>
</tr>
<tr>
<td>Acceptance</td>
<td>.19</td>
<td>.30</td>
<td>.41</td>
<td>.27</td>
</tr>
<tr>
<td>Social support</td>
<td>.23a</td>
<td>.21</td>
<td>.34</td>
<td>.28</td>
</tr>
<tr>
<td>Relaxation</td>
<td>.18a</td>
<td>.18</td>
<td>.35</td>
<td>.24</td>
</tr>
<tr>
<td>Spiritual support</td>
<td>.28a</td>
<td>.31</td>
<td>.29</td>
<td>.23</td>
</tr>
<tr>
<td>Escape</td>
<td>.26a</td>
<td>.21</td>
<td>.36</td>
<td>.27</td>
</tr>
<tr>
<td>Anxiety</td>
<td>7.75b</td>
<td>1.58</td>
<td>3.85</td>
<td>1.33</td>
</tr>
</tbody>
</table>

Note. Within each row, means that do not share a common subscript differ from each other (Tukey's honestly significant difference post hoc test, p < .05). FGD = functional gastrointestinal disorders.
strategies than their healthy counterparts in controllable stressful situations but used fewer such strategies than those in the other two groups in uncontrollable situations.

In addition, it should be noted that, for the catharsis strategy, only a significant group effect was obtained, $F(2, 117) = 7.14, p < .01$. Although participants generally did not differ in the use of this strategy across situations of distinct levels of controllability, participants with functional gastrointestinal disorders used more catharsis strategies than did those in the other two groups.
As predicted, participants with functional gastrointestinal disorders were characterized by a nondiscriminative action-oriented coping pattern, as indicated by their relatively consistent deployment of direct-action strategies regardless of the perceived controllability of stressful events. However, both healthy and rheumatic participants tended to display a more variable coping pattern in response to different stressful events. Specifically, they tended to use more action-oriented strategies (direct action) when the stressor was perceived as controllable but more emotion-focused strategies (acceptance and escape) when the stressor was perceived as uncontrollable.

Discussion

As a first attempt to explore cognitive and behavioral characteristics of individuals with functional gastrointestinal disorders, our research extends previous work in revealing some psychological factors related to functional gastrointestinal symptoms. Consistent with our hypotheses, participants with functional gastrointestinal disorders had a monitoring perceptual style, as indicated by their tendency to pay close attention to their body condition and adopting in less blunting. Moreover, they also adopted a nondiscriminative action-oriented coping pattern regardless of the controllability of stressful events.

This research revealed certain relationships between psychological factors and functional gastrointestinal symptoms. In light of the body of research on gastric functioning, one possible interpretation is that the monitoring perceptual style and nondiscriminative action-oriented coping pattern may influence symptom severity. To elaborate, research on gastric distention (Coffin, Azpiroz, Guermer, & Malagelada, 1994; Lemann et al., 1991; Mearin, Cucala, Azpiroz, & Malagelada, 1991) has shown that participants with functional gastrointestinal disorders are more sensitive to experimental stimuli to their stomach than are healthy participants. They also have been shown to perceive a greater extent of discomfort at lower stimulation levels than their healthy counterparts. Such hypersensitivity to threatening bodily cues among individuals with functional gastrointestinal disorders suggests that they are predisposed by a monitoring perceptual style, which may influence not only their appraisals of health condition but also their anxiety levels.

Moreover, a study on gastric motor functioning (Bennett et al., 1992) showed that participants with functional gastrointestinal disorders who adopted a fighting spirit when encountering stressful events reported prolonged gastric motor dysfunctions. These results suggest that their nondiscriminative usage of action-oriented coping to "fight" the stressors leads to a greater severity of functional gastrointestinal symptoms and higher anxiety levels as well. This body of research indicates that individuals with functional gastrointestinal disorders may be predisposed by a monitoring perceptual style and a nondiscriminative action-oriented coping pattern that may influence their somatic symptoms and anxiety levels.

In light of previous discussions of health problems (e.g., Carver, Scheier, & Pozo, 1992; Kaplan, 1990), another possible interpretation of these relationships is that functional gastrointestinal symptoms may influence one's perceptual style and coping behaviors. Despite the absence of any clear organic diseases and apparent causes identified for functional gastrointestinal disorders (e.g., see Sahay & Axon, 1995; Wittmann & Tytgat, 1995), individuals with these disorders suffer from chronic functional gastrointestinal difficulties, such as acute abdominal pain and disturbed bowel habits (see Morris, 1991; Talley & Piper, 1985). However, their somatic difficulties have frequently not been treated via medical care, but with general advice and reassurance (see Edwards, Forman, & Walton, 1985; Warrardoff, Knottnerus, Huijnen, & Starmans, 1989). Receiving limited medical explanations and treatment from health care professionals, individuals with functional gastrointestinal disorders may seek alternative ways to relieve their unpredictable and distressing somatic symptoms, such as by paying close attention to their body condition and adopting more action-oriented coping behaviors. In this respect, their increased concerns with their functional gastrointestinal symptoms may influence their perceptual style and coping behaviors.

Taken together, it is possible that one's perceptual style and coping pattern may influence one's functional gastrointestinal symptoms, but it is equally possible that the symptoms may influence one's perceptual style and coping pattern. Moreover, it is even possible that perceptual style, coping patterns, and functional gastrointestinal symptoms may all derive from the personality dimension of neuroticism. With regard to the correlational nature of our research design, these notions remain largely speculative. The present research should thus be supplemented with multivariate longitudinal or experimental designs to clarify the causal relationships between these two psychological factors and the symptoms of functional gastrointestinal disorders.

Apart from the correlational nature of this research, another cautionary note regarding the generalizability of the present findings should be addressed. It is noteworthy that these cognitive and behavioral characteristics were found in individuals with functional dyspepsia and irritable bowel syndrome in medical settings. Application of the present results to those who do not seek medical consultation and individuals with other kinds of functional gastrointestinal disorders remains unknown, and thus researchers should not assume that all individuals with functional gastrointestinal disorders are characterized by these two psychological factors. To assess the replicability and generalizability of our findings, further research could widen the scope of target participants to those who do not seek medical treatment and individuals with other types of functional gastrointestinal disorders (e.g., functional dysphagia or pelvic floor dysmotility).

To conclude, this research provides new insights into the body of functional gastrointestinal research by revealing that individuals with functional gastrointestinal disorders are characterized by a monitoring perceptual style and nondiscriminative action-oriented coping pattern across different situations. Such new findings highlight the importance of.
exploring psychological characteristics related to functional gastrointestinal symptoms. Although the organic or biochemical causes of functional gastrointestinal disorders remain unknown, health care professionals can provide patients with more details on gastrointestinal problems by enhancing patients’ awareness of their cognitive and behavioral characteristics related to their symptoms.

References


