Brief Report: Writing about Chronic Fatigue Increases Somatic Complaints

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Abstract

Participants were instructed to imagine that either they or a friend were suffering from chronic fatigue syndrome (CFS) and were asked to fabricate a story about how CFS affected their own or their friend's daily functioning. Control participants were not given an imagination exercise but were asked to write about their study choice. After the writing exercise, all participants completed the Symptom Checklist-90 (SCL-90). Participants who had written a story about how CFS symptoms affected daily life (either their own life or that of a friend) had higher scores on the Somatization subscale of the SCL-90 than controls. This finding resembles the misinformation effect documented by memory research, and suggests that elaborative writing about illness, through its symptom-escalating power, has iatrogenic potential.

Keywords: chronic fatigue syndrome, medically unexplained symptoms, misinformation, somatization

Introduction

Medical doctors often encounter patients with symptoms for which no organic basis can be found (Kroenke & Price, 1993). Such medically unexplained symptoms (MUS) are associated with significant distress, functional impairment, and increased health care utilisation (Heinrich, 2004).

Evidence suggests that psychological mechanisms play a crucial role in the development of MUS (see Rief & Broadbent, 2007, for an overview). Rief and Barsky (2005) argued that misinterpreting benign somatic sensations as signs of illness lies behind the creation of MUS. According to their perception-filter model of MUS, the sensory organs are permanently sending neural impulses to the brain.

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Usually, this sensory input is filtered by the lower nervous system centres to prevent overflow of higher cortical structures. However, when sensory signals are amplified or the filter activity is decreased, people may become consciously aware of the sensory input and normal bodily sensations may be interpreted as abnormal signs. When these signs are attributed to an illness, misinterpreted somatic sensations may lead to MUS. Rief and Barsky (2005) provided a list of factors affecting the perception-filter model of MUS. Thus, over-arousal, distress, and sensitisation would lead to amplified sensory signals, selective attention, health anxiety, and low levels of distraction would result in reduced filter activity, and excitability, memory, and expectations would affect cortical perception.

The present study aimed at decreasing the filter activity hypothesized by Rief and Barsky's (2005) model by asking healthy participants to write about somatic symptoms. We reasoned that writing fictional stories about a somatic illness would activate a mental schema or representation of that illness. Due to this activated schema, people would become overly focused on the everyday sensations linked to this illness, leading to elevated levels of self-reported somatic symptoms. Many studies show that memory can be distorted by presenting participants with misleading post-event information. If participants are shown a video of a car collision and they are subsequently asked whether or not they have seen broken glass while there was none in the video, many of them will report that they have seen broken glass (Loftus & Palmer, 1974). Research in the area of memory distortion buttress the idea that fabricating stories may affect people's mental schema, thereby increasing the likelihood that events depicted in these stories took place in reality. A good example is provided by Polage (2004), who had her participants evaluate the probability of different childhood events (e.g., having experienced a hospitalization overnight). Participants were instructed to fabricate stories about some of the events they previously had evaluated as unlikely. During a follow-up session, they were again asked to evaluate the likelihood of the childhood events. Polage found that a significant minority (i.e., 10 to 16%) eventually came to believe the autobiographical stories they had fabricated.

The idea that writing about illness is associated with elevated symptom reporting seems to be at odds with the idea that writing about emotions may have mental and physical health benefits (Baikie & Wilhelm, 2005; Pennebaker, 2004). However, Pennebaker's (2004) 'expressive writing paradigm' is based on patients with chronic disease who are instructed to write about traumatic or highly emotional experiences, not on healthy participants who are asked to write about the problems in life they encountered because of their symptoms. Possibly, asking patients to write about emotional events may have beneficial health effects, while asking normal people to write about illness may have detrimental effects.

In the present study psychology undergraduates were either asked to write about chronic fatigue syndrome (CFS) symptoms or about their reasons to study psychology. In keeping with the perception-filter model of MUS (Rief & Barsky,

2005), we expected that participants asked to write about CFS symptoms would report more somatic symptoms than those who were requested to write about why they had chosen to study psychology.

Method

Participants

Fifty-one undergraduate psychology students (14 men) volunteered to take part in a study on personality features of future psychologists. The experiment was approved by the standing ethical committee of the Faculty of Psychology and Neuroscience of Maastricht University. Participants received course credit in return for their participation. Their mean age was 19.2 years (*SD*=1.4; range 17-24 years). All of them reported to be in good health. They were randomly assigned to one of the three groups.

Procedure and Materials

All participants were first given a patient brochure on CFS. They were asked to read this brochure carefully because many psychology students would later be working as a psychologist in a health care setting. It was stated that empathizing with patients with somatic complaints was an essential skill for psychologists. The brochure was created by the authors[1] and contained two pages of information about the prevalence, symptoms, and treatment of CFS. Next, all participants were requested to write a detailed story. In the first group (*n*=17), participants had to imagine that they were suffering from CFS. They were asked to write a story on how their CFS symptoms would affect their functioning during a typical day in their life. They were instructed to write this story in a way they would tell a psychologist about their problems. In the second group (*n*=17), participants had to imagine that a close friend of theirs was suffering from CFS. They were asked to write a story on how this friend's CFS symptoms would affect his or her functioning during a typical day in his or her life. They were instructed to write this story in a way they would tell a psychologist about their friend's problems. In the third group (*n*=17), the control group, participants were asked to write a story about why they had decided to study psychology. Participants were given up to 20 minutes to write their story. After they had written the story, all participants were asked to complete two filler questionnaires and the Symptom Checklist-90 (SCL 90; Derogatis, Lipman, & Covi, 1973). The SCL-90 is a self-report checklist that was developed as a screening instrument for clinical and research purposes. It addresses a wide variety of psychological symptoms. Its 90 items measure 8

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[1] An English version of this brochure may be obtained from the first author.

symptoms dimensions (e.g., somatization, obsessive-compulsive symptoms, depression, anxiety). Participants are requested to indicate on a five-point scale how much they have been bothered or distressed by the symptoms on the list over the last 4 weeks (anchors: 0 = *not at all*; 4 = *very much*). In the present experiment, we focused on the Somatization subscale of the SCL-90. This scale consists of 12 items measuring somatic complaints. Illustrative items are "soreness in your muscles" and "heavy feeling in your arms or legs". For each of the SCL-90 subscales (including the Somatization scale), scores are summed to obtain a total scale score.

Results

Analysis of Variance (ANOVA) was used to find out if there were significant differences between the three groups on the SCL-90 subscales. There was a reliable difference between the groups with respect to the Somatization subscale ($F(2,48)=5.76$, $p<.01$). No significant differences between the groups were found on the other SCL-90 subscales. Follow up t-tests revealed significant differences in somatization scores between the groups. Participants who were asked to write a story about how their CFS symptoms affected their life had higher somatization scores ($M=19.5$; $SD=5.1$) than those in the control group ($M=13.9$; $SD=2.2$) ($t(32)=4.17$, $p<.01$). Participants who were instructed to write a story about how a friend's CFS symptoms affected his or her life also had higher somatization scores ($M=18.6$; $SD=7.0$) than control participants ($t(32)=2.63$, $p<.05$). There were, however, no significant differences in scores on the SCL-90 Somatization scale between the participants who had to write a story about how their CFS symptoms affected their life and those who were asked to write a story about how a friend's CFS symptoms affected their friend's life.

Discussion

Our results suggest that writing about CFS may lead to elevated self-reported somatic symptoms. This finding is in line with predictions based on the perception-filter model of MUS (Rief & Barsky, 2005). That is, writing about an illness may affect the filter component in this model. By asking individuals to write about an illness, their mental schema of that illness becomes activated, making them overly attentive to vague and ambiguous sensations that could be part of the illness. This focus on everyday sensations may then lead to an increase in somatic symptoms. Thus, it can be argued that having individuals to elaborate on the characteristics and consequences of an illness may play a role in the development of MUS. This iatrogenic route has been recognized by many authors. For example, it has been argued that when health care practitioners order additional examinations,

consultations, interviews, and/or diagnostic tests, patients may become hyper attentive to normal bodily sensations and will start to interpret these sensations as symptoms of serious illness (Hatcher & Arroll, 2008).

The idea that writing about an illness promotes somatic symptom reporting accords well with two phenomena showing that, under certain circumstances, people may misinterpret their bodily sensations. The first phenomenon is the medical students' syndrome (Hunter, Lohrenz, & Schartzam, 1964). According to Moss-Morris and Petrie (2001), the tendency of a nontrivial proportion of medical students to diagnose themselves with diseases they are currently studying can be explained by the creation of a mental schema of these diseases. This schema encourages students to focus on symptoms consistent with the schema, while ignoring inconsistent symptoms. The second phenomenon is the finding that people's symptoms are susceptible to misinformation. In a previous study, we told participants who scored moderately on two somatic symptoms that they had raised scores for these symptoms (Merckelbach, Jelicic, & Pieters, 2011). Most participants were blind to the discrepancies between their original symptom ratings and the upgraded scores they were misinformed about. Furthermore, at a one-week follow-up retest, blind participants revised their symptom ratings in the direction of the misinformation (i.e. they increased their ratings of these symptoms). The most plausible explanation for the biasing effect of misinformation on somatic symptoms is that the perception and interpretation of these symptoms are sensitive to misinformation because the symptoms in question are vague and ambiguous. This phenomenon is reminiscent of extensive research on how misinformation may create robust pseudo-memories. Thus, confronting individuals repeatedly with false information about a fictitious event (e.g., having a skin sample removed in childhood age as a part of a medical procedure), causes many of them to develop detailed recollections of this event. In this type of research, misinformation is provided by external sources and is targeted at vague, autobiographical episodes (Frenda, Nichols, & Loftus, 2011). Our point is that misinformation may also be generated internally, e.g., by writing about an illness, and may affect the interpretation of vague bodily sensations.

False recollections are often maintained even when participants are confronted with contradictory evidence (Frenda et al., 2011). Much the same might be true for symptom intensity escalation due to misinformation. We recently described the case of a 58 year old woman who was misdiagnosed by her neurologist with Alzheimer's disease (Merckelbach, Jelicic, & Jonker, 2012). The neurologist provided her with misleading test results and interviewed her several times about treatment options for Alzheimer's disease. After she had learned that she did not have any neurological disease at all, the woman still believed for some time that she was suffering from Alzheimer's disease.

Four limitations of our study deserve some comment. Firstly, it is well documented that the personality trait neuroticism exacerbates symptom reporting

(Rosmalen, Neeleman, Gans, & de Jonge, 2007). Although participants were randomly allocated to the three groups, one of the experimental groups could have contained more participants high in neuroticism than the other groups. In this group, high somatization scores would be the result of neuroticism rather than the effect of writing about illness. However, the finding that both groups in which participants had to write about CFS had higher somatization scores than the control group makes the possibility unlikely that one experimental group consisted of more participants high in neuroticism. In future research on the effect of writing about illness, it would perhaps be wise to measure neuroticism and use this as a covariate in the statistical analyses.

Secondly, our sample consisted of only 51 psychology students and most of them were women. There is some evidence that, when it comes to reporting somatic symptoms, women are more susceptible to misinformation than men (e.g., Passchier, Hunfeld, Jelicic, & Verhage, 1993). Therefore, our results may not be generalizable to men (especially in the general population). Future research on the effects of writing about illness should use a greater sample with a more even handed distribution of women and men, preferably from the general population.

Thirdly, the current experiment does not provide a clear demonstration of the causal chain that is involved in symptom escalation and writing about illness. This has to do with the fact that we measured symptoms only at post-test. We relied on such post-test only design because we could not rule out the possibility that a pre-test works against experimental effects, due to people's preference for consistent symptom reporting across pre- and post-tests. Clearly, this issue warrants further study. A complex design including pre-test only, post-test only, and pre-test post test conditions might provide a more compelling demonstration that writing about illness causes elevated symptom reporting.

The fourth limitation concerns the specificity of the effect. The present study yielded tentative evidence that the symptom escalating effects of writing is a specific phenomenon: It emerged for the Somatization subscale, but not for the other SCL-90 subscales. Nevertheless, this specificity warrants systematic study. It seems plausible to assume that there are constraints on the type of symptoms that lend themselves to inflation due to writing or, more generally, symptom elaboration. It seems likely that ambiguous symptoms such as pain, fatigue, concentration difficulties, and other subjective experiences that reflect general malaise are more sensitive to elaboration and filter breakdown in the perception-filter model of Rief and Barsky (2005) than objectively identifiable symptoms with little subjective concomitants (e.g., high blood pressure; airway obstruction; see Turner, 2006). Studies that systematically vary the type of illness about which participants write and the type of symptoms that are measured may shed more light on this issue.

Summing up, our finding resembles the misinformation effects documented by memory research, and suggests that elaborative writing about illness, through its symptom-escalating effect, has iatrogenic potential.

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Kratko izvješće: Pisanje o kroničnom umoru povećava somatske pritužbe

Sažetak

Sudionici su dobili uputu zamisliti pate li oni sami ili njihov prijatelj od sindroma kroničnoga umora (SKU; engl. *Chronic fatigue syndrome*) te se od njih tražilo da izmisle priču o utjecaju SKU na njihovo ili prijateljevo svakodnevno funkcioniranje. Sudionici u kontrolnoj skupini nisu dobili zadatak zamišljanja, već se od njih tražilo da pišu o svom izboru studija. Nakon vježbe pisanja svi su sudionici ispunili listu simptoma (SCL-90, *Symptom Checklist-90*). Sudionici koji su pisali o utjecaju SKU-a na svakodnevno funkcioniranje (vlastito ili prijateljevo) imali su više rezultate na SCL-90 subskali somatizacije nego ispitanici kontrolne skupine. Ovaj je nalaz sličan efektu lažnoga informiranja zabilježenome u istraživanjima pamćenja te upućuje na to da opširno pisanje o bolesti putem pojačavanja simptoma ima jatrogeni učinak.

Ključne riječi: sindrom kroničnoga umora, medicinski neobjašnjivi simptomi, pogrešne informacije, somatizacija