

Memory bias for health-related information in somatoform disorders

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Abstract

Objective: Cognitive processes are considered to be relevant to the etiology and maintenance of somatoform disorders (SFDs). The aim of this study was to assess explicit and implicit information-processing bias for disorder-congruent information in SFDs. **Methods:** A clinical sample of 33 patients suffering from multiple somatoform symptoms (SSI-3/5) and 25 healthy controls performed an encoding task with computer-presented word lists (illness related, negative, positive, neutral content), subsequently

followed by explicit memory tests (free recall and recognition) and an implicit test (word-stem completion). **Results:** The somatoform group showed a memory bias for illness-related stimuli in the word-stem completion task, whereas the two groups did not differ in explicit memory tests. This effect could not be explained by comorbid depression. **Conclusion:** These results provide some support for current theories on SFDs.

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Keywords: Information-processing bias; Cognitive model; Memory; Somatoform disorder; Somatization

Introduction

Somatoform disorders (SFDs), according to the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR)* and the *International Classification of Diseases, Tenth Revision (ICD-10)*, cover a heterogeneous range of conditions, all of them sharing the central feature of bodily symptoms that cannot be fully explained by any medical factor. The impact of SFDs on the health care system is tremendous, as SFDs are among the most prevalent psychiatric disorders and, moreover, are associated with severe impairment in important areas of functioning and with high health care utilization [1–4].

In current models of SFDs, information-processing aspects are considered to be relevant [5–8]. These include an abnormal amplifying perceptual style [5], restrictive

assumptions about health and body functions [9], and an enduring tendency to misinterpret bodily sensations and other health-related information as evidence of serious physical illness [10]. The interaction of perceptual and interpretative biases of ambiguous body signals can result in a vicious circle of anxiety, physiological arousal, and intensification of symptoms (Fig. 1). Furthermore, organic causal beliefs and vulnerability attributions have been found to be associated with dysfunctional illness behavior [11], which in turn might contribute to the process of the syndrome becoming chronic.

In cognitive-behavioral theories of SFDs, it has been outlined that beliefs about physical sensations signaling serious illnesses increase anxiety concerning health, which can then lead to selective cognitive biases favoring information that confirms illness belief while discounting information that contradicts it. Cognitive biases can occur at different stages of information processing, either at the encoding-of-information stage, indicated by an attentional (or preattentive) bias for disorder-relevant stimuli (“integrative process”), or at the point of volitional retrieval of information from memory, indicating deeper elaboration of schema-congruent information (“elaboration

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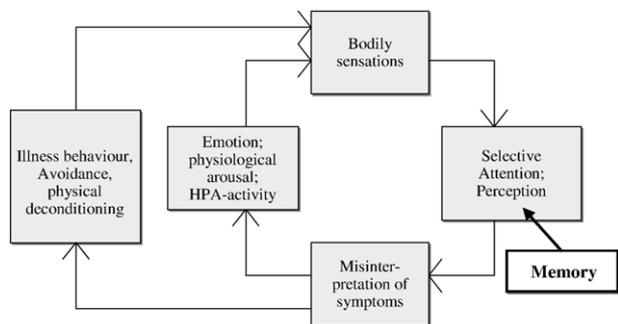


Fig. 1. The cognitive–psychobiological model of SFDs (modified from Rief and Nanke [6]).

process”). Aspects of information processing have also contributed to the understanding of mood and anxiety disorders. Williams et al. [12,13] provided a cognitive model of information processing in order to account for different mnemonic and attentional biases found in these disorders (e.g., Refs. [14–16]). According to Williams et al., anxiety is associated with automatic encoding of fearful stimuli, whereas depression is more likely associated with elaboration of negative emotional stimuli. Accordingly, the bias occurring at integration stage can be revealed by implicit tests such as perception-based or word-stem completion tasks, whereas biases related to elaboration stages of information processing can be revealed by explicit memory tests (e.g., free recall or recognition of previously learned material).

The influence of memory in SFDs has been investigated in a few studies only, with most of them studying explicit memory effects. In regard to chronic pain disorders, a couple of findings suggest a memory bias for pain-related information (sensory words) [17]. However, these findings should be generalized to SFDs with caution, as many of the studies investigated chronic pain conditions with some kind of pathophysiological findings (e.g., arthritis), and information processes might differ from SFDs. Results from studies regarding hypochondriasis are mixed. Durso et al. [18] could not demonstrate biases for health-related information with a recognition task in hypochondriac students. However, in a study by Brown et al. [19], hypochondriacal individuals did not show a perceptual bias for health-related information but did, however, demonstrate evidence suggesting a memory bias: Within-group comparisons showed that two hypochondriacal samples recalled more health-related words than nonhealth words, whereas the effects in control samples were not significant. Pauli and Alpers [20] reported that patients with hypochondriasis and somatoform pain disorder and patients with hypochondriasis without pain disorder showed an enhanced immediate recall of pain-related words.

Only very few studies assessed memory bias in subjects suffering from multiple somatoform symptoms, such as in somatization disorder or undifferentiated SFDs. Rief et al.

[21], using a word category decision task and subsequent free recall, did not demonstrate a disorder-specific explicit memory bias in these subjects. Scholz et al. [22] also did not find an explicit information-processing bias based on an auditorily presented lexical decision task in students with multiple somatoform symptoms. However, their results suggested an implicit information-processing bias for threatening health-related words. In a recent study, a group of SFD patients showed an explicit memory bias for physical threat words (the free-recall ratio of physical threat words was higher than that in controls), as well as supraliminal interferences for physical threat words in the emotional Stroop task; the study did not, however, reveal an implicit memory bias in the tachistoscopic word-identification task [23].

Overall, the number of experimental studies on information-processing bias in SFDs, especially in somatization disorders or related groups with multiple somatoform symptoms, is still very limited, and existing studies have focused mainly on elaborative processes, revealing inconsistent results. Therefore, the aim of the present study was to assess memory biases for disorder-congruent stimuli in SFDs. A clinical sample of patients suffering from multiple somatoform symptoms and healthy controls performed an encoding task with computer-presented word lists (illness related, negative, positive, neutral content), subsequently followed by standard explicit memory tests (free recall, recognition) and an implicit test (a word-stem completion task). We hypothesized that individuals with multiple somatoform symptoms would show a memory bias favoring health-related information in explicit and implicit tasks. As comorbidity with depression is high in SFDs, we additionally controlled for its influence in secondary analyses.

Method

Sample

Somatization syndrome group

Subjects were included in the clinical sample only if multiple somatoform symptoms were present as per the criterion of the “somatization index” (SSI-3/5), which was assessed with Screening for Somatoform Symptoms 2 (SOMS-2). According to this criterion, men had to report at least three somatoform symptoms and women had to report at least five somatoform symptoms as being present during the past 2 years (SOMS-2) and which could not be explained by medical/organic factors. The SSI-3/5 criterion corresponds to Escobar et al.’s SSI-4/6 proposal to classify somatization syndrome [24].

Control group

Healthy controls did not fulfill the SSI-3/5 criterion for somatization syndrome. If any symptoms were reported

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