



Improving heartbeat perception in patients with medically unexplained symptoms reduces symptom distress



Manuela Schaefer^{a,*}, Boris Egloff^b, Alexander L. Gerlach^c, Michael Witthöft^{a,d}

^a Department of Clinical Psychology and Psychotherapy, Johannes Gutenberg University of Mainz, Mainz, Germany

^b Department of Psychology, Johannes Gutenberg University of Mainz, Mainz, Germany

^c Institute of Clinical Psychology and Psychotherapy, University of Cologne, Cologne, Germany

^d Department of Health Psychology, University of Mannheim, Mannheim, Germany

ARTICLE INFO

Article history:

Received 20 September 2013

Accepted 17 May 2014

Available online 17 July 2014

Keywords:

Somatoform disorders

Medically unexplained symptoms

Interoception

Heartbeat perception

Training procedure

ABSTRACT

Distortions in interoceptive accuracy have been linked to somatoform disorders. In line with cognitive theories of symptom formation in somatoform disorders, decreases in interoceptive accuracy have recently been observed to co-occur with more severe symptom reports. The current study tested the hypothesis that experimentally increasing interoceptive accuracy should decrease symptom severity in somatoform disorders. Twenty-nine patients with somatoform disorders were instructed in a newly developed heartbeat perception training procedure. Heartbeat perception, as a proxy for interoceptive accuracy, was assessed with a mental tracking task. Although there were no significant differences between the training group and a waiting control group ($n = 23$) regarding increases in heartbeat perception, health anxiety served as a moderator and significant reductions in state symptom reports were observed after training. These findings suggest a relation between lower interoceptive accuracy and the perception of bodily symptoms in somatoform disorders.

© 2014 Elsevier B.V. All rights reserved.

1. Introduction

The perception and interpretation of physiological changes are regarded as the most crucial underlying mechanism contributing to the development and maintenance of somatoform disorders (e.g., Witthöft, Basfeld, Steinhoff, & Gerlach, 2012; Witthöft & Hiller, 2010). However, cognitive-behavioral models do not agree about the exact relation between the perception of physiological changes and somatoform disorders. On the one hand, an increased perception and subsequent reporting of physical symptoms have been postulated (e.g., Barsky, 1992), mainly due to a biased attentional focus on these symptoms and their misinterpretation. On the other hand, Brown (2004) proposed that the perception of physical symptoms is based on automatic schema-driven processing due to symptom-related memory structures, and is therefore biased in patients with somatoform disorders (Katzer, Oberfeld, Hiller, Gerlach, & Witthöft, 2012) and people reporting higher levels of

medically unexplained symptoms (Brown, Brunt, Poliakoff, & Lloyd, 2010; Katzer, Oberfeld, Hiller, & Witthöft, 2011).

Empirical evidence is rare with regard to the accuracy of interoception in somatoform disorders. Some older findings of higher interoceptive accuracy in somatoform disorders (e.g., Scholz, Ott, & Sarnoch, 2001) stand in contrast to reports of lower interoceptive accuracy in patients with somatoform disorders (Bogaerts et al., 2010; Pollatos et al., 2011). Recently, an association has been reported between more severe symptoms and lower heartbeat perception in patients suffering from medically unexplained symptoms (Schaefer, Egloff, & Witthöft, 2012; Schröder, Dikmani, & Martin, 2012).

When studying the perception of bodily sensations, it is necessary to accurately define which concept of interoception is relevant. Most importantly, the concepts “interoceptive awareness” and “interoceptive accuracy” may be, but are not necessarily, related (Ceunen, Van Diest, & Vlaeyen, 2013). Here, we define interoceptive awareness as a mindful and metacognitive perception of physical sensations, and interoceptive sensitivity as the accuracy of objectively assessed bodily sensations (Ceunen et al., 2013; Garfinkel & Critchley, 2013). Furthermore, it is important to highlight that self-reports of bodily symptoms can be decoupled from the accurate detection of physical sensations and from interoceptive awareness (e.g., Bogaerts et al., 2010; Ceunen et al., 2013; Garfinkel &

* Corresponding author at: Department of Clinical Psychology and Psychotherapy, Johannes Gutenberg University of Mainz, Wallstrasse 3, 55122 Mainz, Germany. Tel.: +49 6131 3939100; fax: +49 6131 3939102.

E-mail address: schae007@uni-mainz.de (M. Schaefer).

Critchley, 2013). In the present study, we therefore focus on interoceptive accuracy, which we operationalized by assessing heartbeat perception.

Inconsistent results regarding interoceptive accuracy in somatoform disorders could also be due to the classification of somatoform disorders, which describes a group of heterogeneous phenomena (e.g., Kirmayer & Robbins, 1991). According to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV; American Psychiatric Association, APA, 1994), medically unexplained symptoms are the main characteristics of somatoform disorders. However, the diagnosis of hypochondriasis, with its hallmark of health anxiety, is also included in the class of somatoform disorders.

Some authors have argued that these models of increased symptom perception mainly explain the development and maintenance of hypochondriasis (e.g., Warwick, 1989; Witthöft & Hiller, 2010), and that hypochondriasis may have different underlying mechanisms compared to medically unexplained symptoms (e.g., Gropalis, Bleichhardt, Hiller, & Witthöft, 2013; Gropalis, Bleichhardt, Witthöft, & Hiller, 2012; Mayou, Kirmayer, Simon, Kroenke, & Sharpe, 2005; Witthöft & Hiller, 2010). Most importantly, in contrast to individuals suffering from somatoform disorders, individuals suffering from health anxiety may show high interoceptive accuracy, similar to patients with anxiety disorders as well as persons with high trait anxiety or state anxiety (e.g., Domschke, Stevens, Pfeleiderer, & Gerlach, 2010; Pollatos, Traut-Mattausch, Schroeder, & Schandry, 2007; Schandry, 1981).

Accordingly, interoceptive accuracy might actually be high in patients with hypochondriasis and low in patients with medically unexplained symptoms, especially in those individuals with relatively low health anxiety levels. However, implications of this supposedly lower interoceptive accuracy for medically unexplained symptoms have yet to be explored.

An experimental micro-treatment may help to clarify this issue. If low interoceptive accuracy is linked to the maintenance of medically unexplained symptom experiences, an improvement in interoceptive accuracy might result in a reduction of symptom severity. Therefore, training interoceptive accuracy in individuals suffering from medically unexplained symptoms is likely to shed more light on factors underlying somatoform disorders.

Schandry and colleagues (Schandry & Weitkunat, 1990; Weitkunat, Schandry, Sparrer, & Beck, 1987) attempted to experimentally manipulate interoceptive accuracy. Their participants received acoustic feedback signaling their heartbeats 75% of the time. They were instructed to press a button at the occurrence of every heartbeat, regardless of whether heartbeats were marked by the feedback or not. The researchers demonstrated that heartbeat perception in healthy participants was enhanced after their training procedure.

However, having to press a button at the occurrence of every heartbeat may have enhanced participants' ability to guess the rhythm of their heartbeats or may have enhanced their ability to press a button in the rhythm of their heartbeats, rather than enhancing their interoceptive accuracy. Also, it is important that a training procedure not be simply an adaption or repetition of the perception task, to avoid learning effects from the perception task, which may address different processes than an improvement in interoceptive accuracy by itself (cf. Schandry & Weitkunat, 1990). The above-described "Schandry training procedure" is quite similar to the heartbeat perception task that is usually employed (counting all perceivable heartbeats within three different time periods; cf. Domschke et al., 2010). To avoid these possible pitfalls, we developed a novel heartbeat perception training procedure (see below). To our knowledge, this is the first study that has attempted to change interoceptive accuracy in individuals suffering from somatoform disorders or that has investigated the effects of

changes in interoceptive accuracy with regard to medically unexplained symptoms.

In sum, the primary aim of the study was to better understand the role of interoceptive accuracy as a crucial component of somatoform disorders. For this purpose, we trained patients with somatoform disorders in heartbeat perception. Due to the proposed differences between individuals suffering from hypochondriasis and those with somatoform disorders, we focused on medically unexplained symptoms as a hallmark of a patient's disorder, and controlled for health anxiety. Specifically, we hypothesized (a) that our novel training procedure would enhance the heartbeat perception ability in patients with somatoform disorders, and (b) that these improvements in interoceptive accuracy should be accompanied by a decrease in symptom severity in patients with somatoform disorders.

2. Method

2.1. Participants

Fifty-two patients with medically unexplained physical symptoms were included in the present study. Participants were recruited from the Outpatient Clinic for Psychotherapy of the Johannes Gutenberg University of Mainz, after diagnosis but before treatment.

The inclusion criterion was a minimum of three current physical symptoms that could not be sufficiently explained by an organic disease or mental disorder and were present for at least six months. Therefore, patients with the diagnosis of a somatization disorder, pain disorder, or undifferentiated somatoform disorder according to DSM-IV (APA, 1994) were included.

Exclusion criteria were the current use of a beta blocker or morphine and a diagnosis of conversion disorder, body dimorphic disorder, anxiety disorder, psychotic disorder, or substance abuse. Patients diagnosed with hypochondriasis were excluded due to the proposed different underlying mechanisms between somatoform disorders and hypochondriasis (e.g., Witthöft & Hiller, 2010). An additional diagnosis of major depression was accepted.

The 23 patients who served as the waiting control group were recruited first and also took part in another study described elsewhere (Schaefer et al., 2012).¹ The remaining 29 patients were recruited specifically for this study and received the heartbeat perception training. In the following, this group is labeled the "training group." Groups did not differ with respect to sex, age, heart rate, body mass index, level of weekly sports activity, depression score, use of antidepressant medicine, or time delay between Time 1 and Time 2 measurement occasions (Table 1).

The study was approved by the local ethics committee of the Department of Psychology at the Johannes Gutenberg University of Mainz. All participants provided written informed consent prior to participation and received monetary compensation for participation (10 € per hour).

2.2. Measures and materials

2.2.1. Heartbeat assessment

An electrocardiogram was obtained by attaching three Ag-AgCl electrodes to the lower left rib cage, to the right mid-clavicle, and to the left mid-clavicle (serving as a ground electrode). Signals were recorded (sampled at 512 Hz) and analyzed by a Varioport system (Becker Meditec, Germany). Custom-built software detected R-waves, computed the mean heart rate, and presented the mental tracking as well as the training task.

2.2.2. Heartbeat perception task

The mental tracking task developed by Schandry (1981) was applied by instructing participants to silently count their heartbeats by concentrating on bodily sensations that might be associated with heart activity. Participants were not allowed to take their pulse or attempt any other manipulations to facilitate the discrimination of their heartbeats. The task was performed three times (for 25 s, 35 s, and 45 s), and the duration of these intervals was unknown to the participants. The beginning and the end of each interval was signaled by a soft tone. In the present sample, Cronbach's α for the mental tracking task (based on the perception scores of the three intervals) was $\alpha = .92$ for Time 1 and $\alpha = .93$ for Time 2.

¹ The Schaefer et al. (2012) study compared interoceptive accuracy in 23 patients with somatoform disorders and 27 healthy controls. These 23 patients constitute the waiting control group of this study. Thus, the first measurement occasion of the mental tracking task for the waiting control group was also reported in Schaefer et al. (2012). However, the second measurement occasion for the waiting control group is exclusively reported in this article.

Download English Version:

<https://daneshyari.com/en/article/920891>

Download Persian Version:

<https://daneshyari.com/article/920891>

[Daneshyari.com](https://daneshyari.com)