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Health care utilization in outpatients with somatoform disorders: Descriptives, interdiagnostic differences, and potential mediating factors

Frauke Dorothee Weiss, Winfried Rief, PhD, Maria Kleinstäuber, PhD *

Division of Clinical Psychology and Psychotherapy, Department of Psychology, Philipps-University, Marburg, Germany

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ABSTRACT

Objective: Somatoform disorders are characterized by increased health care utilization producing high health costs. The aim of this study was to assess facets of and interdiagnostic differences in health care use in somatoform disorders and to examine health anxiety, symptom-related disability, depression, and phobic anxiety as potential mediating factors of the relationship between somatization and health care use.
Method: An outpatient sample of $N = 254$ patients with somatoform disorders was investigated by analyzing different facets of their health care use over the last 12 months. Multiple mediation analyses were applied.
Results: Participants reported a mean of 28.02 doctor visits over the last year. Patients fulfilling criteria of DSM-IV somatization disorder had a significantly higher number of doctor visits than patients with undifferentiated somatoform, and somatoform pain disorder, all $p \leq .006$. In most health care use variables, patients with comorbid mental disorders did not differ from patients without comorbidities. The mediation model on the effect of all mediator variables on the relationship between somatization and health care use reached significance ($b = 0.32$, 95% CI: 0.0576, 0.6435). Surprisingly, specific mediator effects were found for health anxiety ($b = 0.06$, 95% CI: 0.0004, 0.1505) and disability ($b = 0.18$, 95% CI: 0.0389, 0.3530), but not for depression and phobic anxiety.
Conclusions: Health anxiety and symptom-related disability should be further considered when investigating potential etiological factors of increased health care use.

1. Introduction

The majority of physical symptoms presented in primary care are considered to be of unclear etiology despite thorough medical examination [1–5]. These so-called medically unexplained physical symptoms are associated with high rates of comorbid mental disorders [6], high levels of symptom-related disability [7,8], and have significant impact on the patients' functioning and working life (e.g., sick leave) [9]. Medically unexplained physical symptoms are key features of the following somatoform disorders in internationally accepted psychiatric classification taxonomies such as the Diagnostic and Statistical Manual of Mental Disorders [DSM; 10]: somatization disorder, undifferentiated somatoform disorder, and somatoform pain disorder. In the new and fifth revision of DSM [11] the diagnosis 'Somatic Symptom Disorder' is proposed, subsuming the somatoform diagnoses mentioned above, and additionally allows a specification of severity which is mainly based on the number of psychological features such as excessive thoughts, high levels of anxiety associated with the physical symptoms, and time or energy invested in symptoms and health.

Patients with somatoform disorders obtain increased health care use [12–15] which results in a highly economic relevance for health care systems. In fact, they seek outpatient and inpatient health care nearly twice as often as patients with other mental disorders [12]. Average health care costs are 2,5 fold to 14 fold higher compared to national average per capita expenditures [16,17]. Their health care use is not only costly, but also contributes to the development and maintenance of somatoform disorders. Medical reassurance positively reinforces pathologizing symptom interpretations and increases the likelihood of health care use by preventing the development of adequate coping strategies [18].

In the previous literature health care use is frequently defined and measured narrowly. Relevant aspects other than primary health care use like secondary health care use, drug intake, the use of alternative medicine and other health care services (e.g., physical therapy), the acquisition of medical assistive technology (e.g., exercise balls) and indirect costs like the number of sick leave days are neglected. Moreover small sample sizes and missing standardized diagnostic procedures are limitations of many studies on health care use in somatoform disorders [see also 19].

* Corresponding author at: Division of Clinical Psychology and Psychotherapy, Department of Psychology, Philipps-University, Gutenbergstr. 18, 35032 Marburg, Germany.
E-mail address: maria.kleinstaeuber@staff.uni-marburg.de (M. Kleinstäuber).

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Only a few studies described health care use from across the entire DSM-IV somatoform diagnostic spectrum [e.g., 15]. There is also only a small number of studies focusing on health care use of somatizing patients adjusted for the presence of comorbid mental disorders [e.g., 12]. Finally studies which examined differences in health care use between different levels of severity of medically unexplained physical symptoms are scarce.

Another important issue in investigating health care utilization addresses factors driving somatizing patients to use health care services extensively. This question invokes the idea of mediating factors which exert influences on the link between somatization and health care use. Anxiety and depression could be assumed to serve as mediators since depressive and anxiety disorders are the most common comorbidities in patients with somatoform disorders [8,20]. Surprisingly, neither anxiety nor depression explained variance of health care use in patients with somatoform disorders when controlled for somatization [12,21]. It remains unclear whether this rather counterintuitive result can be replicated by conducting mediation analyses. Health anxiety could be another factor driving patients to seek a doctor. The reduction of health anxiety through doctoral reassurance negatively reinforces health care use [22]. Whereas some authors suggest that an interaction effect between somatization and health anxiety explains frequent attendance [23,24], others propose that health anxiety rather than somatization is a more useful predictor of frequent health care use [25]. Another factor motivating health care use in somatizing patients could be to reduce symptom-related disability. From empirical evidence it appears that patients with medically unexplained physical symptoms wanted more emotional support from their doctor than patients with explained physical symptoms, but no more somatic interventions [26]. Previous studies could show that somatization is associated with disability [27], also after adjusting for anxiety and depression [7]. Somatic symptoms and disability contributed independently to health care use [28].

To our knowledge, there is no study which examined the base rates of different facets of health care use in a big outpatient sample of patients with somatoform disorders. Consequently, our first goal was to describe the number of outpatient doctor visits and clinical stays over the last 12 months as well as drug intake, use and costs of alternative medicine, the use of other health care services (e.g., physical therapy), individual costs of medical assistive technology, and sick leave days. Our second goal was to investigate if patients diagnosed with different forms of somatoform disorders according to DSM-IV, patients experiencing different levels of symptoms severity corresponding to the DSM-5 specifier of severity, and finally somatoform patients with and without comorbid mental disorders differentiate with respect to health care use variables. Our third aim was to test if phobic anxiety, depression, health anxiety and symptom-related disability potentially mediate associations between somatization and health care use.

2. Methods

2.1. Participants and procedure

Patients were recruited as part of a larger randomized controlled multi-center intervention study in 7 clinical centers in Germany. All study centers were outpatient clinics offering psychotherapy for different kinds of mental disorders. Participants were recruited from the group of patients consecutively admitted to a psychological treatment in the study centers, referrals by primary or secondary care in private practice, print media (e.g., advertisements in regional daily newspapers), Internet, and notices on the study centers' bill-boards. Inclusion criteria focused on both, DSM-IV (somatization disorder, undifferentiated somatoform disorder, somatoform pain disorder) as well as DSM-5 criteria (Somatic Symptom Disorder). In contrast to the very broad criteria of DSM-5 Somatic Symptom Disorder, we only included patients with at least three medically unexplained physical symptoms since multiplicity of symptoms has been shown to be a predictor for persistence of symptoms [1,29]. Additionally, as opposed to DSM-5 criteria, we excluded patients whose symptoms were fully explained by a medical condition. Potential organic causes of symptoms were checked by using documented medical evaluations. Minimum symptom duration had to be ≥6 months. A cut-off score ≥ 4 in the modified version of the Pain Disability Index (PDI; see 2.2) [28,30] and ≥ 5 in the Patient Health Questionnaire (PHQ) [31] were requested as criteria for disability and symptom severity, respectively. Age of participants was determined between 18–69 years. Comorbidity with other mental disorders was allowed, as long as the medically unexplained physical symptoms were considered to be the major problem. Exclusion criteria were severe alcohol/drug addiction, psychoses, brain injuries, continuous antipsychotic or opioid treatment (except for a low-dose antipsychotic treatment of sleeping problems), continuous or intermittent, high-dosage benzodiazepine treatment (constant dose of antidepressants was allowed) and ongoing psychotherapy. Diagnostic interviews were conducted by trained clinical psychologists who administered a structured interview for the assessment of medically unexplained physical symptoms and the criteria of DSM-5 Somatic Symptom Disorder (MUS-interview; created by W.R., unpublished data, 2007) and the Structured Clinical Interview for DSM-IV Axis I/II Disorders (SCID-I/-II) [32,33]. The MUS-interview consisted of a list of 65 somatic complaints which were examined in terms of onset and results of medical examinations as well as disability caused by the complaint. Further, the interview included 28 items with dichotomized answer categories asking for psychological features such as misattribution of symptoms (e.g., "If you experience bodily complaints or misperceptions, is your first idea that these are signs of serious illnesses [e.g., cancer]?") or avoidance behavior (e.g., "Do you avoid any physical activities which could cause sweating or heart beat accelerations?"). A study could show evidence for these psychological variables to detect high utilizing as well as seriously disabled patients with somatic symptoms [34]. A more detailed description of the study procedure can be found in Kleinstäuber et al. [35]. The multi-center trial is registered under ClinicalTrials.gov (Identifier: NCT01908855).

The whole baseline sample of the above mentioned multi-center study consisted of $N = 255$ patients. Because informed consent was withdrawn by one patient, we investigated $N = 254$ patients who fulfilled the inclusion criteria and completed self-rating scales described below before they were randomly assigned to treatments. Mean age of the investigated sample was 43.38 ($SD = 12.92$); 64.2% were female and mean duration of school and professional education was 14.55 years ($SD = 2.94$). Mean duration of symptoms was 7.20 years ($SD = 7.85$). According to DSM-IV 55 patients (21.7%) received a diagnosis of somatization disorder, 144 patients (56.7%) had a diagnosis of undifferentiated somatoform disorder, 55 patients (21.7%) fulfilled the criteria for somatoform pain disorder and no patient had a conversion disorder. According to the DSM-5 Somatic Symptom Disorder severity specification, 193 patients (76%) exhibited mild to moderate and 61 patients (24%) severe Somatic Symptom Disorder. At least one comorbid disorder was diagnosed in 126 patients (49.6%), 95 patients (37.4%) had comorbid mood disorder, 47 patients (18.5%) comorbid anxiety disorder, 14 (5.5%) comorbid personality disorder and two patients (0.8%) other comorbid mental disorders.

Ethics approvals were given at all study centers by the local ethics committees. The study protocol and the consent forms were also approved by the Ethics Committee of the German Psychological Association (Deutsche Gesellschaft für Psychologie DGPs). Prior to participation in the study, informed consent was obtained.

2.2. Measures

To assess patient-reported *health care utilization* we used a novel questionnaire called Health Care Utilization Questionnaire (HCU-Q). This questionnaire includes items asking for the number of visits of different medical specialists (e.g., general practitioner, orthopedists) and