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Patients with environment-related disorders: Comprehensive results of interdisciplinary diagnostics

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Abstract

Background: Researchers dealing with environmental illnesses face complex diagnostic and methodological difficulties. Poor objective findings contrast with high subjective suffering and a firm belief that environmental exposure is the only source of complaints. The Basel pilot research project established a multi-modal assessment procedure and assessed complaints attributed to the environment. Medical, psychological and environmental findings were evaluated as to their pathogenic validity. Furthermore, patients were pooled into distinguishable subgroups in order to formulate more appropriate therapy strategies.

Methods: Sixty-three patients took part in the threefold diagnostic approach (medical examination, psychiatric exploration, environmental analysis) of a mixed qualitative/quantitative study. Interdisciplinary case conferences allowed a consensus rating of the aetiological relevance of the findings to be reached. The discrepancy between self-rating and experts' judgement was exploited for subgroup formation.

Results: About 50% of the patients' symptoms could be attributed to psychiatric causes. Based on self-rating and experts' judgement, four subgroups were distinguished with differing medical, psychiatric and environmental aetiologies, personality traits and interactional competencies.

Conclusions: Patients with environment-related disorders form a heterogeneous group. An interdisciplinary assessment and a comparison between self- and experts' judgements enable a more differentiated psychotherapeutic procedure and may enhance future treatment success.

Keywords: Environmental analysis; Environmental illness; Interdisciplinary assessment; Psychopathology; Psychosomatics

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Introduction

When dealing with patients with suspected environmental illnesses, clinicians and researchers often meet with complex diagnostic and methodological difficulties (for overview see: Labarge and McCaffrey, 2000; Staudenmayer, 2001). Patients report a heterogeneous variety of somatic and psychic symptoms which are attributed to the environment (Bornschein et al., 2001; Herr et al., 2002); however, objective measurements for such environmental factors are lacking (Nowak et al., 2005). The relevance and contribution of environmental, somatic, or psychological factors to the disease aetiology remains unclear (Binder and Campbell, 2004; Fiedler and Kipen, 2001; Saito et al., 2005), and the toxicological pathogenesis of environmental factors remains unproven (Staudenmayer et al., 2003a, b). Accordingly, contradictory conclusions can be drawn from the research literature with respect to psychogenetic influences with some authors welcoming the appraisal of such factors and some arguing that their effect is negligible (Altenkirch, 2000; Black et al., 2000; Caccappolo-van Vliet et al., 2002; Staudenmayer, 2001). Nevertheless, efforts have been made to assess environment-related complaints using self- or experts' rating questionnaires (Brand et al., 2007; Bailer et al., 2006; Hojo et al., 2003).

It is still the case that environmental syndromes do not represent nosological entities in their own right, but rather diagnostic conventions such as multiple chemical sensitivity (MCS) and idiopathic environmental intolerances (IEI; see Nowak et al., 2005). In addition, symptoms and symptom frequency may be influenced by cultural and geographical circumstances as well as by the media (Winters et al., 2003). Many studies maintain that about 50% of patients with environment-related complaints in fact suffer from psychiatric disorders (Black, 2000; Black et al., 2000; Bornschein et al., 2006; Eberlein-König et al., 2002; Hausteiner et al., 2003; Huss et al., 2004), with estimates of life time prevalence ranging from 5% (Teufel-Maier et al., 2004) to 75% (Bornschein et al., 2002a, b), up to 84% (Dietel et al., 2006). A growing body of recent research proposes that environmental illnesses are mediated or enhanced by psychological factors (Levallois et al., 2002; Papo et al., 2006; Wiesmüller et al., 2003). Importantly, the overlap with psychiatric disorders such as somatoform disorders makes accurate diagnosis difficult (Wiesmüller et al., 2003). However, considering the unfavourable prognosis of patients suffering from environmental illnesses (Black et al., 2001); assessing their symptoms requires appropriate procedures as a prerequisite to adequate treatment.

The theoretic rationale for appropriate assessment and diagnosis is based on Engel's biopsychosocial model (Engel, 1977, 1982), which claims that biological, social, and psychological factors must be taken into account when dealing with aetiology and treatment of illnesses. Consequently, symptom reporting is considered to be the outcome of complex interactions between these three factors. We adapted Engel's approach and introduced an environmental instead of a social aspect for the assessment of patients with environment-related complaints. Thus, for thorough assessment of environment-related complaints, a multi-modal interdisciplinary procedure for gathering medical, environmental, and psychological/psychiatric data is mandatory. This procedure (Huss et al., 2004; Schulze et al., 2004; Eis et al., 2003, 2005) helps to indicate the extent to which noxious environmental sources may be plausibly related to the patients' complaints, and how far psychological and somatic factors should be taken into account. Additionally, a subsequent interdisciplinary exchange of information and findings rounds up the concept of interdisciplinary approach.

Former multidisciplinary investigations of environment-related health disorders are scarce. Schulze et al. (2004) performed basic diagnostics including a special questionnaire-based environmental medical history, physical and allergological examination and human biomonitoring on 400 patients. The main results were that frequently allergic illnesses as well as results of human biomonitoring exceeded the ranges usually referenced. Two hundred and sixty-four 'environmental patients' assessed by Bornschein et al. (2002a, b) underwent routine medical examination, toxicological analysis and the structured clinical interview for DSM-IV psychiatric disorders. Three quarters of the patients met DSM-IV criteria for at least one psychiatric disorder; 39% of patients were diagnosed with a psychiatric disorder, 23% with a somatic condition, 19% with a combination of psychiatric and somatic condition, and in only 5% of patients were toxic chemicals considered to provide sufficient explanation for the symptoms observed. Herr et al. (2002) reported the interdisciplinary review of previously diagnosed medical conditions, current clinical consultations, personal risk communication, and therapeutic advice in 51 participants. They concluded that prior environmental laboratory analyses had overestimated toxicologically relevant findings and a relevant environmental or occupational medical condition was found in only 4 of 51 participants. Moreover, in 41% of the participants, a mental or behavioural condition alone was not sufficient to explain complaints, and respiratory or skin-related diseases were frequently found. Taken together, multidisciplinary designs are scarce, focus on anmanestic results, actual medical assessment and biomonitoring, or psychiatric diagnostic, and do not comprise home visits to assess possible noxious findings.

A further challenge involves motivating patients with environment-related complaints to seek treatment. Even