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Illness perceptions of people with long-term conditions are associated with frequent use of the emergency department independent of mental illness and somatic symptom burden

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ABSTRACT

Objective: To determine whether illness perceptions of patients with long-term conditions (LTCs) are associated with urgent healthcare use and whether this association is independent from mental illness and somatic symptom burden.

Methods: Illness perceptions (B-IPQ) and somatic symptom severity (PHQ-15) were assessed in 304 patients with diabetes, rheumatological disorders and COPD attending an Accident and Emergency Department (AED) in Greece over a one year period. The presence of mental illness was determined by the Mini International Neuropsychiatric Interview. A Generalized Linear Model (Negative Binomial) regression was used to determine the associations of illness perceptions with AED use after adjusting for mental illness, somatic symptom severity, disease parameters and demographics.

Results: Eighty-six patients (28.3%) reported at least one visit to the AED during the previous year and 75 (24.7%) twice or more. 124 patients (40.8%) had some form of mental disorder with 85 (28.0%) meeting criteria for major depressive disorder. The degree to which the patients had an understanding of their illness (*illness comprehensibility*) ($p < 0.01$) along with younger age ($p < 0.05$), additional comorbidities ($p < 0.05$) and greater somatic symptom burden ($p < 0.001$) was strongly associated with AED use; AED visits were expected to be reduced by 9.1% for each unit increase in *illness comprehensibility*.

Conclusions: The way people perceive their illness influences urgent healthcare seeking behavior independent of somatic symptom burden. This finding indicates that information provision may prove effective in reducing urgent healthcare use and encourage the design of psycho-educational interventions targeting disease-related cognitions in an attempt to prevent unnecessary healthcare utilization.

Introduction

Chronic physical illnesses are common in the general population and the prevalence of patients with long term conditions (LTCs) is expected to increase due to ageing of the population and unhealthy lifestyle choices [1]. LTCs are associated with considerable health care costs and, given that people with LTCs frequently use urgent and unscheduled healthcare [2], a substantial proportion of these costs can be attributed to the use of expensive urgent healthcare [3]. Understanding therefore the factors associated with the use of urgent healthcare by people with LTCs and diverting them to more appropriate routine health services may reduce healthcare costs, and better meet patients' healthcare needs.

Evidence suggests that the presence of a physical symptom does not alone explain help-seeking behavior [4,5], and a number of additional factors have been found to be associated with urgent healthcare in people with LTCs including older age, female gender, poorer education, previous hospitalizations or having other medical comorbidities [6,7]. Psychological factors may also play a crucial role in this respect. Evidence suggests that a quarter of people with LTCs have comorbid mental disorders [8,9], which lead to negative outcomes [10], and increased medical costs [11] and more frequent use of the accident and emergency department (AED) [12]. Among the various psychological factors studied, the predominant focus has been on depression and its

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role as a predictor of urgent healthcare utilization. A recent systematic review of the available evidence found that depression was associated with a 49% increase in the odds of urgent healthcare utilization by people with LTCs [3]. However, this effect was much smaller in studies that controlled for other covariates such as illness severity, social support, age and sex or other medical comorbidities [13,14], indicating that, apart from depression, several other parameters are involved in the patients' decision to seek urgent or unscheduled healthcare.

Patients' own views and beliefs about their condition can influence their way of responding both emotionally and physically to their illness [15]. These views, frequently described as illness perceptions, represent patients' need to make sense of and respond to their illness [16]. Leventhal's self-regulation model is commonly used to explain peoples' psychological response to illness. This model involves a continuous feedback loop of three stages; illness representation, the adoption of coping responses, followed by appraisal of how successful the coping responses have been [16].

Studies have shown that, in people with LTCs, illness perceptions are associated with psychological distress, problems with adherence to treatment, and impaired quality of life [17–19]. Furthermore, studies within the primary care setting have shown that a strong illness identity (the number of symptoms attributed to the illness), a long timeline perspective (a belief that the illness will continue for a long period of time), and a belief in serious consequences of the illness are strong predictors of health care use [5]. In addition, patients' health perceptions, i.e. how the patients perceive their health, have been reported to contribute to primary healthcare use regardless of patients' actual physical health [20], while perceived illness susceptibility and severity, knowledge about illness, information seeking behavior and belief in the effectiveness of self-care are important determinants of health seeking behavior [21].

These findings support an association between patients' illness perceptions and healthcare use mainly in the primary care setting, but their potential association with emergency health services utilization has not been explored. Most studies underline the mediating role of psychological morbidity in seeking medical care, but it is unclear whether the association of illness perceptions with emergency healthcare use is independent of these factors. To the best of our knowledge, no studies have investigated whether illness perceptions of people with LTCs are associated with AED use independent of psychological distress and physical symptom severity. Prompted by this fact, the aim of the present study was to test the hypothesis that, in people with LTCs, illness perceptions are associated with AED use and this association is independent from mental illness and somatic symptom burden.

Method

Setting

The Greek health system is a mixture of public integrated, public contract and public reimbursement models, incorporating principles of different organizational patterns [22]. The public sector comprises the national health service-type system (ESY), and the social insurance system consists of a wide variety of schemes, all of which are under the jurisdiction of the Ministry of Employment and Social Protection. The ESY provides for emergency pre-hospital, primary and inpatient health care through rural surgeries, health centers and public hospitals. A gatekeeping mechanism and a referral system have not been developed as yet in Greece. Patients can choose to visit the emergency department of any public or private contracted hospital, bypassing primary health contact points. Patients prefer to visit large university hospitals offering expensive and high-technology services. These provide a wide range of services in addition to inpatient services: outpatient services, day care services, diagnostic services, and emergency services. A comprehensive description of the Greek healthcare system may be found in Economou [22]. This study was conducted at the University Hospital of Ioannina, which is a large, tertiary, teaching hospital with 800-beds linked to the medical school of the University of Ioannina. The hospital provides care for a catchment population of approximately 350,000 individuals living in the Epirus county, a mainly rural county situated in north-western Greece, which is the poorest EU county (EU convergence region) [23].

Study design and participants

Data were collected as part of the longitudinal cohort study entitled "Applying effective and Beneficial strategies to REduce unscheduled and urgent VIsits of patients with LTCs to Greek Accident and Emergency departments". The main objective of the study is to develop effective psychosocial strategies to reduce the need for frequent unscheduled care in patients with LTCs. For this part of the study, data from the initial baseline assessment phase of the study were analyzed.

Detailed methods of the study have been described elsewhere [24,25]. Briefly, patients with at least one of three LTCs: diabetes mellitus (DM), rheumatological disorder (RD) and COPD who were seeking unscheduled or urgent care at the AED of the University Hospital of Ioannina, during a one-year period (9/2012–9/2013) are recruited to the study. These illnesses are among the leading 15 discharge diagnoses of emergency departments [26] and are associated with an emergency hospital admission during the subsequent 6 months [27]. In the USA, over 12 months, 13% of COPD patients made 6 or more visits [28], while a resent systematic review reported increased rates of emergency department visits and increased costs of medications in patients with diabetes and comorbid mental disorders compared with diabetes patients without depression [29]. We have also previously found that illness perceptions are associated with psychological distress and physical health-related quality of life in RD patients [18,30,31], and since our focus here was to test whether illness perceptions are associated with AED use, RD patients were included in the present study.

Researchers were in the AED from 9.00 a.m. to 11.00 p.m. every day and patients were recruited on a consecutive basis during this time frame. Inclusion criteria were age > 18 and a diagnosis of DM, RD or COPD confirmed by the treating AED clinician. Exclusion criteria were inability to read and write Greek and inability to participate due to an acute psychotic episode, intoxication or confusion, or due to the severity of the medical condition.

Sampling was undertaken by three researchers, two psychiatrists and a clinical psychologist. Eligible patients were approached by the researchers, and consenting participants were subsequently interviewed. All the procedures followed were in accordance with the World Medical Association Helsinki Declaration. The study was approved by the hospital's ethics committee (23/19–09-2012). Signed informed consent was obtained from all participants.

Measures

Demographic variables including age, sex, marital status, educational level, employment/unemployment status and occupation, income, and residence were collected. Clinical features and disease severity indices including the Modified Medical Research Council (MMRC) dyspnea scale [32] or the Health Assessment Questionnaire (HAQ) [33], as appropriate, and laboratory data including arterial blood gases (ABG), current blood glucose levels, glycosylated hemoglobin or c-reactive protein, as appropriate, were obtained from patients' AED records using a standardized data collection form. The current use of any agent including antidepressants was recorded from the patients' medical and pharmacy records.

Study instruments

Mini International Neuropsychiatric Interview (MINI) (Greek Version 5.0.0) [34]

The MINI is a structured psychiatric interview that ascertains the diagnosis of mental disorders according to DSM-IV or ICD-10 criteria [35].