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Association between physical illnesses and depressive symptoms requiring hospitalization in suicide victims

Helinä Hakko [a,*], Jussi Manninen [b], Kaisa Karvonen [a], Terttu Särkioja [c], V. Benno Meyer-Rochow [d], Pirkko Räsänen [b], Markku Timonen [b,e]

[a] Oulu University Hospital, Department of Psychiatry, P.O.Box 26, 90029 Oulu University Hospital, Finland
[b] University of Oulu, Department of Psychiatry, BOX 5000, 90014 University of Oulu, Finland
[c] University of Oulu, Department of Forensic Medicine, BOX 5000, 90014 University of Oulu, Finland
[d] International University Bremen (IUB), School of Engineering and Science, D-28725 Bremen, Germany
[e] Health Center of Oulu, Box 8, FIN-90015 City of Oulu, Finland

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Abstract

We examined an association between a history of hospital-treated depression and physical diseases in 1877 suicide victims from Northern Finland. Information on physical diseases and depression of victims was extracted from the Finnish Hospital Discharge Registers. Of suicide victims, 31% of female and 16% of male victims had a lifetime history of depression. When compared with victims without any lifetime hospital-treated physical illnesses, a history of depression was shown to associate with the diseases of the nervous, circulatory, respiratory, and musculoskeletal systems in the group of symptoms and signs, injuries and poisonings, and infectious diseases among male victims. Respectively, in female victims, an increased prevalence of depression was seen in endocrine, nutritional and metabolic diseases, diseases of the nervous, circulatory, genitourinary, skin and subcutaneous tissue, and musculoskeletal systems, and with injuries and poisonings, pregnancy-related problems and infectious diseases. This study is the first to evaluate comorbidity between physical illnesses and depression over the lifetime in suicide victims; earlier studies reported findings in living patients from epidemiological or clinical populations. Since depression can affect quality of life in severely ill patients, targeting depression in patients with chronic illness may assist in decreasing suicide rates.

Keywords: Comorbidity; Hospitalizations; International Classification of Diseases

1. Introduction

An increased prevalence of depression has been reported in a wide range of physical illnesses or conditions characterized by somatic symptoms (Hays et al., 1997; Horrobin and Bennet, 1996; Evans and Charney, 2003; Katon, 2003; Sugahara et al., 2004). Patients with somatic illnesses such as diabetes mellitus, coronary artery disease, immune-mediated disorders (e.g., atopic disorders), and neurologic illnesses generally have shown higher rates of major depression than patients without these disorders.

Major depression is an important risk factor for suicidal ideation and behavior (Black and Winokur, 1990;

* Corresponding author. Oulu University Hospital, Department of Psychiatry, P.O Box 26, FIN-90029 OYS, Finland. Tel.: +358 8 315 6640; fax: +358 8 333167.
E-mail address: helina.hakko@oulu.fi (H. Hakko).

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Lönnqvist, 2000). Moreover, several physical illnesses have also been associated with suicidal behavior. Increased rates of completed and attempted suicides, as well as suicidal ideation, have been noted in patients with (a) neurological disorders (Harris and Barraclough, 1994; Carson et al., 2000; Arciniegas and Anderson, 2002; Waern et al., 2002; Katon, 2003), (b) malignant diseases (Harris and Barraclough, 1994; Druss and Pincus, 2000; Quan et al., 2002; Waern et al., 2002), (c) HIV/AIDS, (Goodwin et al., 2003; Harris and Barraclough, 1994), (d) peptic ulcer (Goodwin et al., 2003; Harris and Barraclough, 1994), (e) renal diseases (Harris and Barraclough, 1994), (f) systemic lupus erythematosus (Harris and Barraclough, 1994), (g) chronic pulmonary diseases (Druss and Pincus, 2000; Quan et al., 2002; Goodwin et al., 2003), (h) prostatic disorders (Goodwin et al., 2003), (i) dermatological disorders (Gupta and Gupta, 1998), and pain patients (Lepine and Briley, 2004).

According to Druss and Pincus (2000), most individuals suffering from physically ill individuals who are suicidal do not meet criteria for major depression. On the other hand, some kind of depressive syndrome was found to be present among 66% of suicide victims (Lönnqvist, 2000). Suicidal ideations occurring in patients suffering from physical illnesses such as neurological disorders have been suggested to arise from a co-morbid depression (Carson et al., 2000).

An association of depression with different types of hospital-treated physical illnesses in suicide victims over the lifetime has not been examined in sufficient detail, although in general population studies suicide risk among persons suffering from physical illnesses is rather well documented. In the present study, the prevalence of lifetime hospital-treated depression of suicide victims was investigated in each major category for physical illness in order to locate the most dangerous ones in relation to suicidal behaviour. The data used in the present study covered all suicides committed during a 15-year period in northern Finland. A linkage to national hospital discharge registers enabled us to acquire reliable information on all physical and psychiatric inpatient hospitalizations that suicide victims had experienced over their lifetimes.

2. Methods

2.1. Study subjects

Data were available for all suicides ($n=1877$) committed between March 1988 and July 2003 in the province of Oulu in Northern Finland. The data for suicide victims were obtained from official death certificates, which were based on official forensic medico-legal investigations. The annual mean population of the province of Oulu was approximately 445 000 over the study period. The study protocol was approved by the Ethics Committee of Oulu University.

2.2. Assessment of hospital-treated depression and physical illnesses

All hospital admissions of suicide victims until the end of 2002 were extracted from the Finnish Hospital Discharge Register (FHDR). The FHDR covers all treatment in general, private, mental, military and prison hospitals, as well as the inpatient wards of local health centres nationwide. It contains the personal and hospital identification code, and data on age, gender, length of stay, and primary diagnosis at discharge, together with three subsidiary diagnoses. In Finland, diagnoses have been coded according to the International Classification of Diseases (ICD-8, up to 1986; ICD-9, 1987–1995; ICD-10 1996 and thereafter) (World Health Organization, 1967, 1977, 1992). The FHDR has been found to be a valid source of information in epidemiological research (Poikolainen, 1983; Keskimäki and Aro, 1991).

A suicide victim was considered to have suffered from depression if at least one hospital treatment due to depression was found from the FHDR. The following ICD codes were used in defining diagnoses of unipolar depression: 2960, 2980, 3004 (ICD-8); 2961, 2968, 3004 (ICD-9); and F32-F34.1 (ICD-19). Suicide victims suffering from bipolar depression were excluded (38 out of 1877, 2.0%) from the present study.

Physical illnesses of suicide victims were grouped according to the main disease categories as they appear in the ICD, except infections. In the ICD many infections are coded by site, e.g., pneumonia as a respiratory disease rather than an infection, but for the purpose of this study, we classified all diagnoses of infectious diseases as a single group of infections (Mäkikyro et al., 1998). In addition, with regard to the ICD category pregnancy-related problems, all hospital treatments due to normal pregnancy were excluded.

2.3. Statistical analyses

Group differences in categorical variables were investigated with Pearson's Chi-Square test and in continuous variables by Mann–Whitney's *U*-test. A logistic regression analysis was used to investigate the statistical significance of an association between depression and each major physical disease category separately. Odds ratios (ORs) and their 95% confidence intervals (95%