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Research report

Inpatient treatment of major depression in Austria between 1989 and 2009: Impact of downsizing of psychiatric hospitals on admissions, suicide rates and outpatient psychiatric services

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ABSTRACT

Background: During the last 20 years Austrian psychiatric services underwent fundamental changes, as a focus was set on downsizing psychiatric hospitals. Little is known about how restructuring of mental health services affected patients with major depression and suicide rates.
Methods: Monthly hospital discharges from all hospitals in Austria with the diagnosis of unipolar major depression as primary reason for inpatient treatment were obtained for the time period between 1989 and 2008. These data were correlated with relevant parameters from the general health system, such as number of hospital beds, suicide rate, density of psychotherapists and sales of antidepressants.
Results: While the number of psychiatric beds was reduced by almost 30%, the total annual numbers of inpatient treatment episodes for depression increased by 360%. This increase was stronger for men than for women. Further on this development was accompanied by a decrease in the suicide rate and an improvement in the availability of professional outpatient mental health service providers.
Limitations: Only aggregated patient data and no single case histories were available for this study. The validity of the correct diagnosis of unipolar major depression must be doubted, as most likely not all patients were seen by a clinical expert.
Conclusions: Our data show that although inpatient treatment for unipolar major depression dramatically increased, reduction of psychiatric beds did not lead to an increase of suicide rates.

1. Introduction

Unipolar depression is expected to be the second leading cause worldwide for disabilities until the year 2020, outnumbered only by ischemic heart disease (Murray and Lopez, 1997) and is associated with a high economic burden for health care systems (Luppa et al., 2006). In Europe, depression causes an estimated annual cost of 118 billion Euros, corresponding to 1% of the total economy (Sobocki et al., 2006). The overall prevalence of depressive disorders in Europe is 8.6% (Ayuso-Mateos et al., 2001), the 1 year prevalence rate in western European countries is around 5%, with a two-fold variation (Paykel et al., 2005).

There is data indicating that the rate of patients receiving treatment for unipolar depression is rising, but little is known on how a general health system in a developed country may react to this development by adaptation of resources (Weissman et al., 1992; Olfson et al., 2002). Also, there is a strong causal link between depression and suicide (Harris and Barraclough, 1997) and thus, changes in the mental health system, especially changes in the treatment of depression, may be reflected in the

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corresponding national suicide rates (Kapusta et al., 2009). Extending previous analyses, this study investigates the development of the Austrian mental health system over a 20 year time period, with emphasis on unipolar major depression among both genders.

2. Material and methods

2.1. Sample

All monthly hospital discharges with the diagnosis of unipolar depression (ICD-9: 296.1 and the corresponding ICD10: F32 + F33) as primary reason for inpatient stay in Austria were obtained from Statistik Austria for the time period from 1989 to 2008. Statistik Austria is the national statistics agency and collects annually data from the Austrian health system, which are made available for scientific research. The monthly hospital discharges were correlated with relevant parameters from the general health system: suicide rate, density of psychotherapists, general practitioners, clinical psychologists, sales of antidepressants, the number of hospital beds and the length of inpatient stay. For suicide rate and the density of general practitioners data was available beginning with 1970. All data were obtained from Statistik Austria, except data on antidepressant sales which were obtained from IMS Health Austria (Vienna), an independent international agency that monitors the pharmaceutical market.

2.2. Statistics

All statistics were calculated with SPSS 16.0. Spearmen correlation coefficients (r_s) were calculated to test whether there was a significant time trend of the men to women ratio of discharge diagnoses during the examined time period (240 months) as well as to describe the relationship between variables of the mental health system relevant in diagnosis and treatment of depression. Annual rates were calculated as per 100,000 of the average general population in each year.

3. Results

During the examined period of 1989–2008 a total of 233.446 inpatient episodes with the diagnosis of depression were registered in Austrian hospitals of which 30.1% concerned men. The corresponding discharge rate per 100,000 of population increased from 34.2 in 1989 to 198.1 in 2008 among men (+479%) and 91.3 in 1989 to 368.8 in 2008 for women (+304%). The male to female ratio of discharged patients with the diagnosis of depression increased from 0.38 in 1989 to 0.54 in 2008 ($r_s = 0.82$; $p < 0.001$; and $n = 240$ months) indicating a trend towards a higher proportion of men treated for depression when compared to women.

From 1989 to 2008 the number of total hospital beds in Austria was reduced from 72.494 beds in 1989 to 64.267 beds in 2008 (−11.4%), while the number of psychiatric care beds was reduced from 9246 beds in 1989 to 6487 beds in 2008 (−29.8%). The total average length of inpatient stay for unipolar depression was 28.4 days in 1989 and 15.6 days in 2008 (−45.1%). Regarding gender, the average length of inpatient stay decreased for men from 21.5 days in 1989 to 17.2 days in 2008 (−20.0%) and for women from 30.7 days to 15.3 days (−50.2%) over the same time period.

Fig. 1 shows the total increase of discharged patients with the diagnosis of unipolar major depression per 100,000 population (+360%) in relation to suicide rate, density of psychotherapists, general practitioners, clinical psychologists, sales of antidepressants and the number of hospital beds. All these parameters of the mental health system were highly intercorrelated (all $r_s > 0.9$).

4. Discussion

This article examines the development of inpatient treatment of unipolar major depression and its correlates in Austria. While the number of psychiatric beds was considerably reduced, it was still possible in the same time period to increase hospital admissions of depressive patients and to reduce suicide rates in Austria. Over the examined time-period total annual numbers of inpatient treatment episodes for depression increased by 360%. This enormous increase might be due to an increased awareness of nonpsychiatric wards towards psychiatric diseases which leads to more frequent diagnosis of these diseases. Another explanation could be that the reduction of beds in psychiatric hospitals (Meise et al., 2008), leading as shown to shorter inpatient treatment, frequently causes re-admission of the same patient within the same affective episode (Yiend et al., 2009). Unfortunately our data reflect only the number of discharges and not the number of discharged individuals.

Similar, but less dramatic changes in the mental health system were reported from Finland, where the numbers of psychiatric inpatient treatment of severe mood disorders increased by 230% between 1987 and 1995 and the average length of inpatient stay decreased by 26% during the same time period (Kaltiala-Heino et al., 2003).

Previous published data suggests that the Austrian mental health system has experienced intense changes during the last two decades, including a sharp increase of antidepressant sales and a similar increase in the availability of psychotherapists which coincided with a decline in the overall suicide rate (Kapusta et al., 2009). In the current study we showed that during the same time period other parameters of the mental health system, namely the densities of clinical psychologists and general practitioners also considerably increased (Fig. 1).

General practitioners prescribe in average 77% of all psychopharmacologic agents (Austrian Health Institute, 2009) and antidepressant prescriptions were previously shown to increase during the examined time-period markedly by 447%. It has been hypothesized, that these changes in the Austrian mental health system may reflect an improvement which may be related to the decreasing suicide rate in Austria (Kapusta et al., 2009).

During the examined 20 year time period the women to men ratio for inpatient treatment of unipolar depression was 2:1 in Austria. This well known fact that the prevalence of unipolar depression differs between men and women has been replicated throughout the last decades (Angst et al., 2002). The worldwide ratio of women to men is 2.1 for lifetime depression and 1.7 for point prevalence rates (Kuehner,