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Long-term hospitalizations for schizophrenia in the Czech Republic 1998–2012

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ABSTRACT

Deinstitutionalization has not been pursued in the post-communist Europe until recently. The population of psychiatric patients institutionalized in the regional mental hospitals is, however, largely understudied. The aim of this study is to assess discharges of long-term inpatients with schizophrenia from Czech psychiatric hospitals and to analyse re-hospitalizations within this group. The nationwide register of all-cause inpatient hospitalizations was merged with the nationwide register of all-cause deaths on an individual level basis. Descriptive statistics, survival analysis and logistic regression were performed. 3601 patients with schizophrenia previously hospitalized for more than a year were discharged from Czech mental hospitals between 1998 and 2012. This included 260 patients hospitalized for >20 years. Nearly one fifth ($n = 707$) of the long-term patients died during the hospitalization; and discharges of 19.36% (n =) were only administrative in their nature. Out of 2197 truly discharged patients, 14.88% ($n = 327$) were re-hospitalized within 2 weeks after the discharge. The highest odds of rehospitalization were associated with being discharged against medical advice (OR 5.27, CI: 3.77–7.35, $p < 0.001$). These data are important for the ongoing mental health care reforms in the Czech Republic and other countries in the Central and Eastern Europe.

1. Introduction

Deinstitutionalization is the process of shifting the locus of care from mental hospitals to the community. This policy has come to prominence in the second half of the 20th Century. It has been especially driven by humanitarian concerns (Aderibigbe, 1997; Haug and Rossler, 1999; Thornicroft and Bebbington, 1989; Yohanna, 2013) responding to the improper treatment and human rights violations associated with long-term hospitalizations in big psychiatric institutions (Drew et al., 2011). Tens of thousands of long-term patients were discharged from mental hospitals as a consequence of deinstitutionalization (Honkonen et al., 1999; Talbott, 2004; Thornicroft and Bebbington, 1989), including a large number of patients with schizophrenia, some of whom were previously hospitalized for >20 years (Andrews et al., 1990; Barr and Parker, 1975; Donnelly et al., 1997; McGrew et al., 1999; Rothbard et al., 1999; Salokangas and Saarinen, 1998).

The right to live independently and be included in the community was established in Article 19 of the Convention on the Rights of Persons with Disabilities (CRPD) as one of the basic human rights of people with disabilities (UN, 2007). A call for action has risen globally to promote its better implementation (Maj, 2011; Stuart, 2012) and deinstitutionalization is now the official policy of the World Health Organization in Europe (WHO, 2013). While mental health care systems in the majority of West European countries have undergone deinstitutionalization to some extent (Haug and Rossler, 1999; Novella, 2010; Pijl et al., 2001; Priebe et al., 2005; Saraceno and Tognoni, 1989; Vazquez-Barquero et al., 2001), mental health care in the countries of post-communist Central and Eastern Europe often continue to rely on large psychiatric hospitals (Semrau et al., 2011).

In the Czech Republic, mental hospitals are the largest in the EU in terms of the number of beds per hospital — on average, there are >500 beds per hospital (WHO, 2011). Although there has been a sharp decrease of mental health beds in Czech mental hospitals between 1990 and 1995 (from 12.4 to 10.0 beds per 10.000 inhabitants) and slight decrease between 1995 and 2010 (from 10.0 to 8.8 beds per 10.000 inhabitants) (IHIS, 2013), this has not been accompanied by a sufficient development of alternatives within the community. Community care is unequally accessible throughout the country and psychiatric beds in the community are scarce (Höschl et al., 2012). The present system of mental health care does not fully adhere to the main principles of current human rights standards. In 2008, the national Public Defender of Rights has conducted a series of investigations within eight out of a total of 16 Czech mental hospitals and has identified possible violations of human rights in some of these institutions (Motejl, 2008a, c, d, e, f, g,

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h). Conditions within these institutions were often qualified as inappropriate; it was not unusual that there were more than nine [and in some cases even 17] beds in one room (Motejl, a, c, d, e, f, g, h). There have been only few signs of improvement since then. However, the government of the Czech Republic has signed and ratified the CRPD in 2009, so it is obliged to implement reforms to meet the rights and demands of people with mental health disabilities.

Recently, a further attempt to reform mental health care has been introduced into the Czech Republic (MHCZ, 2013). One of its major goals is a systematic development of care in the community, and the focus is on those with severe mental illness (MHCZ, 2013). The reform efforts are hindered by a lack of evidence. No relevant epidemiological study has been published and the only available data are routinely collected by the Institute of Health Information and Statistics of the Czech Republic. These data are presented on an aggregate level and lack important details, such as lengths of individual hospitalizations, rates of suicides following discharge, rates of reinstitutionalization (i.e. moving patients from psychiatric hospitals to other long-term care institutions such as health and social care facilities or prisons), and rates of re-hospitalizations (i.e. admitting patients back to psychiatric hospitals shortly after discharge from inpatient hospitalizations). As a consequence, the population in mental hospitals is largely understudied. The number of hospitalized long-term patients, patterns of their discharge and rehospitalization remains unclear. This depreciates the ongoing reform as well as the general development of evidence based mental health care.

The aim of this paper is to investigate discharges of patients with schizophrenia from mental hospitals after their long-term hospitalization. We were particularly interested in the number of patients discharged in recent years, the length of their hospitalizations, the number of patients who died in mental hospitals, the number of patients who were re-institutionalized into health and social care facilities, and the number of patients who were re-hospitalized shortly after their discharge.

This study is important for three reasons. Firstly, it quantifies the scale of the challenge for the mental health reform in the Czech Republic and helps to assess the number of long-term inpatients diagnosed with schizophrenia. This is needed for informed decision making related to the reform. Secondly, it is vital to identify the patterns of re-institutionalization which will also help to chart out the need for effective interventions both pre and post discharge. Last but not least, mental health care systems in post-communist Europe have been influenced by similar societal factors and they face similar challenges. Evidence from one of the post-communist states is likely to be relevant to other post-communist countries in the region.

2. Materials and methods

2.1. Data and participants

The data were extracted from the database of all-cause hospitalizations and the database of all-cause deaths in the Czech Republic. The database of all-cause hospitalizations is maintained by the Institute of Health Information and Statistics (IHIS), Czech Republic, and based on the form *Protocol of discharge*. The *Protocol of discharge* is filled out by mental health professionals and it contains a summary of the key facts about the discharge of a person from the inpatient psychiatric treatment. The protocols are sent from health care facilities to the Institute of Health Information and Statistics in the following cases: a) the person dies during hospitalization; b) the person is transferred to another department within the same facility; c) the person is transferred to an acute physical health care facility; d) the person is re-institutionalized into either health or social care facility; e) the person is discharged home, or f) the person is discharged against the medical advice of the psychiatrists. The database of all-cause deaths is based on the *Notifications of deaths*. Every deceased person in the Czech Republic is examined by a physician. The physician then issues a *Death Certificate* which is sent to the national Register Office. The Register Office issues an official *Notification of death* and it is then handed to the Czech Statistical Office [CZSO], which maintains a database of all-cause deaths. The individual data in both databases were encrypted by the IHIS so it was not possible for researchers to identify individual patients and yet it was possible to connect data from both databases via the same encrypted code.

All adults (18+ years at the time of discharge) who were hospitalized in psychiatric inpatient facilities with the diagnosis of schizophrenia (F20x) for more than a year and discharged between 1 January 1998 and 31 December 2012 were included in the analysis. The duration of hospitalization of 1 year or longer was chosen to define a long-term patient. This is in line with other studies focused on deinstitutionalization and mental health care reforms, including studies of the Team for the Assessment of Psychiatric Services (TAPS) (Leff, 1997) and others (Francis et al., 1994; Jones et al., 1986; McInerney et al., 2010; Ward et al., 2003). If there were more than one long-term hospitalization during the given period, the patients' last long-term hospitalization was taken into the analysis and it is further referred to as an "index hospitalization".

The period of 2 weeks was chosen to define "rehospitalization shortly after discharge" because the majority of readmissions take place within this time according to survival analysis (Fig. 1). A shorter time horizon would exclude a substantial number of re-hospitalizations. The time period of 1 year between the discharge and possible death (including suicide) was chosen because a longer time period would lead to the exclusion of a relatively large number of patients from our analyses.

2.2. Statistical analysis

We have calculated descriptive statistics, and conducted a survival analysis using a Kaplan-Meier curve. The association between patients' characteristics (gender, age, diagnosis, way of discharge, length of hospitalization) and rehospitalization within two weeks after the discharge was examined by calculating crude odds ratios (Table 2) and by conducting multivariable logistic regression (Table 3). The period of 2 weeks after the discharge was selected on the basis of survival analysis (Fig. 1). Those who were discharged because of death as well as those who were transferred into either another department of a psychiatric hospital or acute physical health care, were excluded from the regression because of the administrative nature of their discharge.

3. Results

3.1. Participants

In total, there were 22,281 individual adult patients with schizophrenia discharged from Czech mental hospitals between 1 January 1998 and 31 December 2012. This included 3601 (16.16%) individuals who had a long-term hospitalization, i.e. they were hospitalized for more than a year. Among the long-term inpatients with schizophrenia, there were 1343 of those hospitalized for >4 years, and this included 260 patients hospitalized for >20 years. Characteristics of the discharged long-term patients are given in the Table 1, which is stratified according to the way of discharge so it is possible to see the full characteristics of the patients who were included into further analyses of association between patients' characteristics and the risk of re-hospitalization within two weeks after discharge.

3.2. Outcomes

Out of the total 3601 long-term patients with schizophrenia, 707 (19.63%) died at the average age of 54.3 years during their psychiatric inpatient hospitalization. Out of the remaining 2894 (80.37%) long-term patients with schizophrenia, the discharges of 655 and 42 were

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