



## Predictors of length of stay in forensic psychiatry: The influence of perceived risk of violence



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### ARTICLE INFO

Available online 14 March 2014

#### Keywords:

Forensic psychiatry  
Length of stay  
Risk assessment  
Restriction orders  
Adverse events

### ABSTRACT

This study describes the prevalence of adverse events and length of stay in forensic psychiatric patients with and without a restriction order. Detailed clinical and administrative information from medical records and written court decisions was gathered retrospectively from admission until discharge for a Swedish population-based, consecutive cohort of forensic psychiatric patients ( $n = 125$ ). The median length of stay for the whole cohort was 951 days, but patients with a restriction order stayed in hospital almost five times as long as patients without. Restriction orders were related to convictions for violent crime, but not for any other differences in demographic or clinical variables. The majority of the patients (60%) were involved in adverse events (violence, threats, substance abuse, or absconding) at some time during their treatment. Patients with restriction orders were overrepresented in violent and threat events. Previous contact with child and adolescence psychiatric services, current violent index crime, psychotic disorders, a history of substance, and absconding during treatment predicted longer length of stay. Being a parent, high current Global Assessment of Functioning scores, and mood disorders were all significantly related to earlier discharge. In a stepwise Cox regression analysis current violent index crime and absconding remained risk factors for a longer hospital stay, while a diagnosis of mood disorder was significantly related to a shorter length of stay.

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### 1. Introduction

Approximately 350 people are court ordered to compulsory forensic psychiatric treatment in Sweden each year, a number that has been fairly stable since the late 1970s (Brottsförebyggande rådet, 2012). However, scientific knowledge of basic treatment conditions and care processes, such as length of stay and the prevalence of adverse events in forensic mental health services, is still scarce. In this article we aim to change this situation by presenting data about the treatment process for a Swedish population-based cohort of forensic psychiatric patients.

Unlike most countries, Sweden sentences mentally disordered offenders to forensic psychiatric care if they suffer from a “severe mental disorder,” a medico-legal term most often corresponding to a psychotic or severe mood disorder (Munthe, Radovic, & Anckarsäter, 2010). Patients who are subjected to a forensic psychiatric investigation are also assessed for their risk for recidivism into severe criminality due to

their mental disorder; on average 80% are considered to be high-risk patients, far in excess of such rates in other countries (e.g., Crocker & Côte, 2009; Ferguson, Ogloff, & Thomson, 2009; Segal, Daffern, Thomas, & Ferguson, 2010). These patients are placed under “special court supervision” (SCS) (Proposition, 1990/91:58), which means that they cannot be discharged without court approval. Thus, forensic psychiatry has the contradictory assignment to both treat the patient’s psychiatric disorder and protect society (and the patient) from undesired behaviours, often through detention (SOU, 2006:91).

In Sweden the mean length of stay for male patients sentenced to forensic psychiatric treatment *with* SCS has been estimated at 5 years 9 months, while for those *without* SCS it was only 1 year 9 months (Socialstyrelsen, 2008). In the same report, patients with a diagnosis of schizophrenia or delusional disorder seemed to have longer hospital stays than those with affective disorders. Differences between the mental health care needs and the safety of the clinical care provided to patients *with* and *without* SCS have, however, not been studied.

International comparisons of length of stay in forensic psychiatry are hampered by differences in legislation and health care settings. In addition, different studies often report different measures of length of stay, using either means or medians (e.g., Coid, Kahtan, Gault, Cook, &

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Jarman, 2001 versus Simpson, Jones, Evans, & McKenna, 2006), which makes them hard to compare. It is also well known that psychiatric care settings tend to have a number of outliers in patients with extremely long hospital stays, which have large effects on reported means.

The main source of information about length of stay and the rate of adverse events (e.g., absconding [leaving without permission], violence, threats, and substance abuse) in Sweden is the cross-sectional inventory reports published by government agencies. These data collections invariably include data from a concentration of problem-prone, long-term patients, which could lead to flawed conclusions. For example, the rate of criminal recidivism during forensic psychiatric treatment in Sweden was estimated at 28% in one such report (Socialstyrelsen, 2002), a figure considerably higher than that found in a study by Nilsson, Wallinius, Gustavson, Anckarsäter, and Kerekes (2011), in which only 4% relapsed during ongoing forensic psychiatric treatment.

Among the adverse events that have the most negative effects, aggressive behaviour holds a conspicuous position, potentially causing severe physical or psychological injury to fellow patients, staff, or others, and often resulting in seclusion or transfer to a higher security ward or another hospital (Blow et al., 1999; Delaney, Cleary, Jordan, & Horsfall, 2001). In a large literature review, Bowers et al. (2011) showed that forensic psychiatric services report a higher prevalence of violent patients and higher numbers of violent events per patient sample and per admission than acute settings and psychiatric hospitals, both within and across different countries (although, due to lack of consistency in reporting, it was difficult to compare these findings across separate studies). Few studies report on aggressive behaviours as *adverse events per patient day*, which would be an adequate measure since forensic psychiatry has very long hospital stays. The literature is also inconclusive as to which patients engage in aggressive events. Some studies suggest that it is a widespread phenomenon (e.g. Hodgins, Alderton, Cree, Aboud, & Mak, 2007), others report that only a small number of patients are involved in the majority of these situations (Daffern, Howells, Oglhoff, & Lee, 2005; Kraus & Sheitman, 2004). In a study of patients in a medium security unit (Gudjonsson, Rabe-Hesketh, & Wilson, 2000) the victims of aggressive behaviours were found primarily to be nursing staff, followed by fellow patients.

Absconding among psychiatric patients is another significant problem associated with both negative effects for the treatment process and potential harm to patients and the general public; the link between absconding and serious harm of self and others is especially strongly supported in the research literature (Muir-Cochrane & Mosel, 2008). In general psychiatry, the mean rate of absconding has been estimated at 12.6 per 100 patients, with a rather large variation ranging from 2 to 44 (Bowers, Jarrett, & Clark, 1998). In a study of absconding incidents at a UK psychiatric hospital, Dickens and Campbell (2001) reported that the minority (34%) of the patients who absconded accounted for almost two thirds of all incidents, with serious adverse outcomes in 16% of all incidents.

Several studies have identified substance abuse as a mediating factor that increases the propensity for violent reactions among people with mental illness (e.g., Elbogen & Johnson, 2009; Fazel, Gulati, Linsell, Geddes, & Grann, 2009), and as a predictor for aggressive behaviours among psychiatric inpatients (Serper et al., 2005). Substance abuse in combination with medication noncompliance among severely mentally ill individuals has emerged as an especially significant predictor of violent reactions (Swartz et al., 1998). Despite the strong association between substance abuse and violence in patients with major mental disorders, the consequences of relapses into drug abuse during ongoing treatment have rarely been subjected to any empirical studies, and have only occasionally been discussed in papers focusing on the treatment of this “triple troubled” patient group (e.g. Lindqvist, 2007).

The main objective of the present study is to describe the basic conditions of forensic psychiatric treatment in a population-based, epidemiologically representative, total cohort in Sweden over a specified period and to compare conditions for so called high-risk offenders

with those for low-risk offenders. To the best of our knowledge, this is the first such endeavour also studying how the occurrence of adverse events affects the length of stay in compulsory forensic psychiatric treatment.

The specific questions were:

1. How long are patients, subjected to involuntary forensic psychiatric treatment, hospitalized, and are there any differences in length of treatment between patients with and without a SCS?
2. What is the prevalence of threats, violence, substance abuse, and absconding among these patients and are there significant differences between the groups in the frequency of these events?
3. Which patient characteristics and treatment-related events predict patients' length of stay?

## 2. Method

### 2.1. Participants

We conducted a retrospective file and register study of a population-based total cohort of patients sentenced to forensic psychiatric treatment in the University Hospital of Malmö's catchment area between 1999 and 2005. The catchment area, which includes the districts of Malmö, Svedala, Trelleborg, and Vellinge, is demographically representative of Sweden (containing urban, small town, and countryside areas). The total number of inhabitants in the area was around 361,000 at the end of 2005 (Statistiska centralbyrån, 2006). The study clinic had 58 inpatient beds, most of which were occupied by persons living in the catchment area and thus included in the study, and 6 wards with different levels of supervision, reflecting the continuum of care from the initial to the final phases.

Between 1999 and 2005, a total of 127 patients were sentenced to forensic psychiatric treatment, 14 of whom had more than one forensic psychiatric treatment episode. To avoid dependence between the groups that were statistically compared, only one treatment period for each individual (the last, which was also always the longest admission) was included in the present study, except for one patient whose first admission was used because the date of discharge was missing for the second. Two other patients were excluded because their legal conditions differed from those of all the other subjects, making comparisons difficult: one of these patients underwent two forensic psychiatric treatments during the study period and another who was sentenced to forensic psychiatric treatment *without* SCS was re-sentenced to forensic psychiatric treatment *with* SCS during his initial treatment period. The final study population thus included 125 individuals.

### 2.2. Procedures

Structured protocols were used to obtain data from medical records and written decisions from district courts, courts of appeal, and county administrative courts, and detailed clinical and administrative information was gathered for the full cohort of patients having a civil register (public records are the basic registration of the population in Sweden). The participants were followed retrospectively from baseline (forensic psychiatric investigation data) and through their inpatient care until discharge or at the latest until June 30, 2008. This date was chosen because in September 2008 new legislation was enacted in Sweden allowing compulsory outpatient care, which would probably have effects on the lengths of stay of forensic psychiatric patients.

### 2.3. Measures

Baseline data included diagnoses according to DSM-IV Axes I and II (American Psychiatric Association, 1994) and categorized into two groups: forensic psychiatric treatment *without* SCS versus forensic psychiatric treatment *with* SCS. Further variables studied were gender,

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