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Aggression and violence in psychiatric hospitals with and without open door policies: A 15-year naturalistic observational study

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ABSTRACT

Aggressive behavior and violence in psychiatric patients have often been quoted to justify more restrictive settings in psychiatric facilities. However, the effects of open vs. locked door policies on aggressive incidents remain unclear. This study had a naturalistic observational design and analyzed the occurrence of aggressive behavior as well as the use of seclusion or restraint in 21 German hospitals. The analysis included data from 1998 to 2012 and contained a total of n = 314,330 cases, either treated in one of 17 hospitals with (n = 68,135) or in one of 4 hospitals without an open door policy (n = 246,195). We also analyzed the data according to participants' stay on open, partially open, or locked wards. To compare hospital and ward types, we used generalized linear mixed-effects models on a propensity score matched subset (n = 126,268) and on the total dataset. The effect of open vs. locked door policy was non-significant in all analyses of aggressive behavior during treatment. Restraint or seclusion during treatment was less likely in hospitals with an open door policy. On open wards, any aggressive behavior and restraint or seclusion were less likely, whereas bodily harm was more likely than on closed wards. Hospitals with open door policies did not differ from hospitals with locked wards regarding different forms of aggression. Other restrictive interventions used to control aggression were significantly reduced in open settings. Open wards seem to have a positive effect on reducing aggression. Future research should focus on mental health care policies targeted at empowering treatment approaches, respecting the patient's autonomy and promoting reductions of institutional coercion.

1. Introduction

Aggressive behavior and violence in psychiatric patients have often been cited to justify more restrictive settings in inpatient psychiatric facilities (McSherry, 2014), based on the argument that the use of locked environments maintains safety when dealing with patients who might otherwise leave and harm themselves or be a danger to the community (Ashmore, 2008). In locked environments, staff maintain maximal control over patients' movements, providing them with safer more efficient treatment (Haglund et al., 2006). The rationale for locked wards is increased safety for the general population based on a putative correlation between severe mental illness and an increased risk for violent behavior (Link and Stueve, 1994). Reviews based on staff observation indicate a yearly rate for aggressive behavior on closed

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inpatient wards ranging from 1.7 to 31.2 incidents per patient and a prevalence rate from 6.2% to 45.0% (Nijman et al., 2005).

However, newer studies reveal a more comprehensive picture, and suggest that a psychiatric diagnosis alone is not a sufficiently good predictor for aggressive and violent behavior (Amore et al., 2008), and moreover, that imposing restrictions on patients might actually aggravate violent behavior (Bowers et al., 2009). Locked wards were indeed associated with more aggressive behavior, poorer satisfaction with treatment and more severe symptoms (van der Merwe et al., 2009). The emphasis on violence and aggressive behavior in psychiatric patients may paint a picture of dangerous psychiatric patients and thereby maintain stigmatization towards this patient population, not least by mental healthcare professionals themselves (Huber et al., 2015; Nordt et al., 2006). Negative perception and extreme disapproval are not only apparent on an individual but also a structural level (Sartorius et al., 2010). Open doors not only have an immediate impact on the ward's atmosphere but also lead to a better acceptance by patients of the psychiatric facilities, mental healthcare providers, and treatment (Blaesi et al., 2015; Lang et al., 2010). Also, a recent study showed no significant differences regarding suicide and absconding, specifically leaving the unit without the knowledge of staff, between an inpatient unit with open door policies and one with a locked door policy (Huber et al., 2016). Thus, a less restrictive therapeutic environment will likely enhance collaboration and might ultimately reduce aggression and violence. Open door policies on psychiatric wards lead to a decline of compulsory measures on the wards (Jungfer et al., 2014; Lo et al., 2011). Coercive measures, such as seclusion and restraint, are therefore possible triggers of aggressive behaviors (Cole, 2014). Different forms of restraint, seclusion, locked doors, and absconding, are negative experiences for both patients and clinicians and may tend to foster a climate of control rather than care (Muir-Cochrane and Gerace, 2016). Some studies suggest that opening locked spaces might lead to a reduction in violence (Lantta et al., 2016). However, there continues to be a lack of research addressing the putative effects of locked doors on aggression and violence (van der Merwe et al., 2009).

Although some studies have selectively examined the effect of open vs. locked wards on restraints, seclusion and suicides, to our knowledge no research has addressed aggressive behavior in general and different types of aggression (i.e., aggressive behavior, damage to property and bodily harm) in particular or has analyzed comprehensively the impact on aggression and coercive measures such as seclusion or restraint. To address this issue, we have undertaken a study of the occurrence of aggressive behavior, damage to property and bodily harm as well as the use of restraint and seclusion in 21 German hospitals, practicing either an open door or a locked door policy. The main rationale for locking psychiatric wards is safety, i.e. the prevention of aggression with possible self-harm or harm to others.

We hypothesized

(a) that there will be no significant difference in aggressive behavior between hospitals with an open door policy and hospitals with locked wards
(b) there will be no significant difference in the frequency of restraint or seclusion.

2. Method

2.1. Data sources and study variables

We obtained the data for the current analyses from the Documentation Group Psychiatry (DGP), an association of psychiatric institutions in North Rhine-Westphalia, Lower Saxony, and Hesse, Germany (Gaebel et al., 2009). All contributing institutions are located on general hospital sites, providing both mental and physical healthcare. Local mental health services are legally bound to deliver care to the population of a designated catchment area and are part of a single-tier mental healthcare system, preventing any selection of patients due to diagnosis, the severity of symptoms, violent behavior, or any other unwanted criteria. Hospitals participating in the DVP routinely gather coordinated and structured routine standardized data with a questionnaire that is identical and used consistently across institutions. The survey includes a set of directives to ensure correct assessment procedures, including the postal and email addresses as well as phone numbers of the responding institution's main office to facilitate direct inquiries. Furthermore, there is a separate documentation guide. Paper and electronic surveys are routinely completed at the end of each hospital stay by the treating physician and are then sent to the main administrative office, where the data are entered, coded, cleaned, and reviewed for the plausibility of responses.

The collected data were part of the routine clinical assessments and were anonymized during extraction. Hence, the data were in accordance with national and international regulations and exempt from institutional review board or ethics committee approval (HHS, 2009). The current study was presented at an executive board meeting, with a focus on research activities, and peer-reviewed by an internal research committee at the Psychiatric University Hospital Basel, Switzerland. The study procedures were conducted in agreement with the Declaration of Helsinki (7th revision, 2013).

Twenty-one out of the 22 hospitals (95.5%) actively contributing to the DGP agreed to participate in the study. Sixteen hospitals had both locked and open wards (hospital type “with locked wards”), 4 hospitals had only open wards during the duration of the entire study (hospital type “without locked wards”). One hospital with exclusively open wards was obligated to introduce locked wards for legal reasons in 2010. Only participants treated in an inpatient setting from 1998 to 2012 were included in the study. Sociodemographic data, as well as clinical information including diagnoses according to the International Classification of Diseases (ICD) − 10 (WHO, 2004), legal status at admission, psychopharmacological treatment, and mode of discharge, were directly documented. The primary endpoint, *any aggressive behavior,* was defined as the composite of (a) *aggressive behavior only* (i.e., overt, often harmful, social interaction with the intention of inflicting damage or other unpleasantness upon another individual), (b) *bodily harm* (i.e., hurt or damage to an individual that interferes with the health of the person and that is more than simply transient or trifling in nature), or (c) *damage to property* (i.e., destruction of public or private property, caused by a person), all coded as binary variables (Large et al., 2011). Also, coercive measures including seclusion or restraint were classified as binary variables. Based on the intricacy of the questions at hand, observational and naturalistic studies are valid research designs for evaluating complex interventions, such as the effects of open versus locked wards, while maintaining ecological validity (Shadish et al., 2002).

2.2. Statistical analysis

All statistical analyses were performed using the statistical software package R, version 3.2.2 (R Core Team, 2015). The analysis dataset contained a total of n = 314,330 cases, either treated in hospitals with a closed (n = 246,195) or with an open door policy (n = 68,135). Baseline characteristics of all cases were summarized for the two hospital types (Table 1). We used propensity score matching to match the smaller group of cases admitted to hospitals