

Crowding and Aggression on Inpatient Psychiatric Wards

Henk L. I. Nijman, M.Sc.
Gust Rector, M.Sc.

The association between crowding and aggressive behavior among psychiatric inpatients was investigated. Aggressive incidents were documented on two closed psychiatric wards between February 1 and December 15, 1996. A modest correlation between number of patients on the ward and number of aggressive incidents per patient was found. Enlargement of the physical space by the addition of a courtyard to one of the wards midway through the study did not lead to a significant decline in incidents. Possibly, a lack of psychological space—having no privacy or not being able to get sufficient rest—may be more important in triggering aggression than a lack of physical space. (*Psychiatric Services* 50: 830–831, 1999)

Aggression of psychiatric patients represents a serious threat to the safety of both patients and staff members (1–3). Apart from the physical and psychological consequences, patient violence has considerable financial implications (3).

Research on aggression in psychiatric hospitals has focused mainly on patient variables. Less emphasis has

been placed on how staff or ward variables contribute to the occurrence of aggression (4,5). For example, Krakowski and Czobor (5) argued that although the characteristics of violent patients have been studied intensively, no consideration has been given to situational factors promoting violence.

As for the situational determinants, surprisingly little empirical research has addressed the issue of ward space and architecture in relation to inpatient violence. One exception is a Swedish study by Palmstierna and associates (6), who investigated the effects of ward crowding on the frequency of aggression. They found that patients with schizophrenia were more likely to become aggressive when the ward was crowded (6). Remarkably, however, the same research group failed to find a decline in the frequency of aggression after the number of beds on a psychiatric ward was reduced by almost 50 percent (7).

Despite these conflicting findings, the association between ward variables and violent behavior is worth studying because findings may lead to concrete and lasting architectural interventions. In this study, the relationship between ward space and aggression in a Belgian psychiatric hospital was studied.

Methods

Between February 1 and December 15, 1996, all verbal and physical aggressive acts of patients admitted to two closed observation wards of the Broeders Alexianen Psychiatric Hospital in Tienen, Belgium, were recorded. Aggressive behavior was scored with a revised version of the Staff Observation Aggression Scale (SOAS) (8,9). The SOAS consists of five columns in which features of the incident are described, including the

provocation of the aggression, the means used during the aggressive incident, the target of the aggression, its consequences, and the measures taken to stop the aggression.

On the two wards studied, the main goal is crisis intervention and diagnostic evaluation. The mean lengths of stay on the two wards in 1996 were 33 days (median=13 days) and 17 days (median=nine days). Due to the short length of stay and the resultant high patient turnover, ward occupation rates varied greatly, which made them suitable settings for studying the effects of crowding on inpatient aggression. Furthermore, at the start of the study, one of the wards was scheduled to be rebuilt. In the middle of the study, on July 9, 1996, a courtyard was opened for patients of ward 1. The inner court was connected with two entrances to the ward, which increased patients' opportunity to walk around freely. The frequency of aggression on the rebuilt ward 1 was compared with that on ward 2, before and after the spatial enlargement of ward 1.

The purpose of this study was to examine whether ward crowding was associated with an increase in aggressive incidents per patient and whether enlargement of the ward space resulted in a decline in aggressive incidents.

Results

During the study period, 212 male and 142 female patients were admitted to the wards. The average age was 41 years, with a range from 15 to 55 years. The most common diagnoses were drug-related problems (38 percent), mood disorders (20 percent), psychotic disorders (18 percent), and personality disorders (18 percent).

A total of 226 aggressive incidents were recorded. The weekly number of

Mr. Nijman is a senior researcher at the Psychiatric Hospital Welterhof in Heerlen, the Netherlands, and in the department of psychology at the University of Maastricht in Maastricht, the Netherlands. **Mr. Rector** is director of patient care at the Psychiatric Hospital Broeders Alexianen in Tienen, Belgium. Send correspondence to **Mr. Nijman** at Psychiatri Centrum Welterhof, P.O. Box 4436, 6401 CX, Heerlen, the Netherlands (e-mail, volkoren@wxs.nl).

aggressive episodes varied from 0 to 15, the average being 4.9 incidents a week. About half of the incidents (115 incidents, or 51 percent) involved physical aggression. Eighteen of the 226 aggressive episodes (8 percent) led to mild or moderate injury to victims.

Crowding and aggression

A Pearson product-moment correlation was calculated between the weekly occupancy rates of the wards and the frequency of aggression as measured by the number of incidents per patient. The weekly occupancy rates were calculated by multiplying the number of occupied beds by the number of days each bed was occupied. After the analysis controlled for ward, a modest correlation was found between weekly occupation rates and the total number of incidents per patient ($r=.21$, $p<.05$, one-tailed). The correlation between the weekly occupation rates and incidents of physical aggression was about the same ($r=.19$, $p<.05$, one-tailed).

Ward space and aggression

We regarded the ward that was not enlarged as the control ward. The number of aggressive incidents on the reconstructed ward did not decline after the opening of the courtyard, relative to the number on the control ward. Furthermore, no significant reduction was found when only incidents of physical aggression were examined.

Discussion and conclusions

In this study, ward crowding was found to be modestly correlated with the number of aggressive incidents per patient per week. Although the effect sizes are small and causality remains unclear due to use of the correlational approach, this finding corresponds with the clinical impression that high ward turmoil can overstimulate and frustrate patients and thus may contribute to aggression. In one of our earlier studies (1), 14.4 percent of inpatient aggression was induced by the behavior of fellow patients.

However, extending the space in one of the two wards did not result in a significant reduction in aggressive incidents. It may not be the physical space in terms of square meters that matters but rather the psychological or social space (10). On a crowded ward,

more patient-patient interactions take place, and it is harder for patients to find rest or privacy. The average noise level on a packed ward is also higher.

Future research could investigate whether an increase in undesired patient-patient contacts is indeed associated with aggressive behavior. Also, a lack of opportunity for patients to retreat and be alone if they desire may be associated with aggression. It should also be noted that the staff-patient ratio is lower on a crowded ward, and the resulting relative inaccessibility of the nursing staff may frustrate and anger patients (1).

Preventing crowding is likely to enhance the ward atmosphere and may improve safety. We feel that unless contraindicated, as may be the case with suicidal or self-mutilating patients, every inpatient should be provided with a bedroom of his or her own. ♦

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Among the topics covered are the differing perspectives of patients, their families, and clinicians on key aspects of community-based care; mentally ill persons in jails and prisons; criminal victimization of persons with severe mental illness; and how to link hospitalized patients to outpatient care.

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