Disturbed behavior and patient aggression within psychiatric wards can threaten both patient and staff safety. To manage these patients, psychiatric wards often will use coercive measures such as solitary confinement. Patient aggression arises from a complex interaction between patient characteristics, staff characteristics, and the characteristics of the physical environment of the psychiatric ward itself. Most studies have focused on the dynamics between patient and staff characteristics; little research has been done to investigate how the physical environment of psychiatric wards might influence patient aggression and subsequently the use of coercive measures.

**OBJECTIVES**

To analyze the effects of design features on the risk of being secluded, the amount of seclusion incidents and the duration of seclusion, for patients receiving treatment in locked wards intended for intensive psychiatric care.

**METHODS**

- Data was combined from two studies; the first was a multicenter study on the building quality and safety of 77 psychiatric hospitals, and the second was a study on the use of coercive measures in 16 psychiatric hospitals. Data collected from both sources was restricted to one year in 2009.
- The first dataset included the design features of 505 locked wards, with wards being defined as distinct areas with private, lockable entrances, corridors and common spaces, and several bedrooms.
- The second dataset included data from 199 wards and their use of coercive measures, along with staff and patient characteristics. The Argus scale was used to collect data on coercive measures.
- With the two datasets combined, the final study sample was comprised of 199 wards in 16 psychiatric hospitals, including data from 37% of all locked wards of hospitals in both rural and urban environments. Data relating to 2,446 beds and 23,868 admissions of 14,834 patients were included as well.
• Analyzed design features were those associated with the safety and quality of the environment and the well-being of patients. A total of 115 variables were grouped into six “families” for data analysis.

Findings

Overall, the findings suggest that the physical environment of the ward has a significant effect on the risk of being secluded during admission. Increased risks of being secluded arose from the predetermined design families’ “presence of an outdoor space,” “special safety measures on the ward,” and a large “number of patients in the building.” The authors note that findings regarding the increased risk of seclusion due to outdoor space are contrary to nearly all previous studies, and are likely biased due to the exclusion of relevant information. Special safety measures such as locks, alarms, and communication systems used by staff are likely contributors to crowding, anxiety, conflict, and aggression, and subsequently seclusion. Lower risks of being secluded were found in wards with more “total private space per patient,” higher “levels of comfort,” and better “visibility on the ward.” These factors seem related to the autonomy and privacy of patients, providing feelings of identity, ownership, and dignity.

Design Implications

Due to the sensitivity and potential volatility of patients involved, overly obtrusive safety measures made at the expense of more pleasant atmospheres within psychiatric wards should be avoided. This may include excessive use of locking mechanisms, alarm systems, and intercom communication devices that further distance the patients from caregivers and other ward members. Reasonable amounts of space for free roaming or socializing should be considered in contrast to emphases on secluded spaces. Evidence-based design supported by previous research highlights the idea that access to outdoor environments and the presence of natural light and artwork can help promote positive mindsets and health outcomes in patients. In general, a balance between necessary safety measures and a positive healing environment should be sought within the physical design of psychiatric wards.
Limitations

The authors noted several limitations. More variables associated with aggression and the use of coercive measures could have been included, such as the use of treatment and medication (only use of enforced intramuscular medication was included). The number, mixture, and training of staff were other neglected factors. Data on coercive measures was limited in that the authors only asked for a yes/no answer as to whether measurements were taken. Overall, a specific and extreme outcome measure was used to explore the impact of the physical environment; the inclusion of self-reported states of well-being or other patient outcomes could have proven useful.