

## Psychiatrists and Forensic Psychology 2016: The effects of the location of a bed in a ward on the length of stay-Jai Sung NOH-Ajou University School of Medicine

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### Abstract

It is difficult to change the architecture of hospitals after they are built; therefore, it is need to consider different treatment related aspects beforehand, both for the benefits of patients and health care providers. Traditionally, medicine has pursued proofs based treatments, which establish a process by defining and measuring modifications in outcomes, depending on the presence or absence of a treatment, and by judging their efficacy. Moreover, architecture has introduced the concept of evidence-based designs. Since any alteration in the physical environment might be affect the growth of diseases in different ways, the rationale for studying these associations is clear. The belief that the physical environment of a hospital could cause the recovery of patients has existed since ancient times; however, it is problem to support this assumption, because randomized controlled trials although often conducted in medicine are often adopted in architecture. Medical facilities, whose aims are the prevention and diagnosis of diseases as well as rehabilitation, consist of different types of spatial areas to get those purposes. A ward is the medical place where patients tends to stay for the longest Duration; therefore, ward environments directly or indirectly affects treatment outcomes. Many studies have conducted the effects of Different physical ward environments on disease outcomes of including the reduction of hospital-acquired infections. For example, physicians have strived to reduce iatrogenic infections. Because an infection is caused by contact, physical isolation between patients, ventilation system components, and easy-to-clean facilities are key architectural features. Light is other critical ward environment aspect that not only causes to a reduce in patients' distress but can also enhance patient satisfaction. Full-spectrum light prophylactic ally controls viral and staph infections and also significantly enhance physical working capacity by reducing heart and pulse rates, lowering systolic blood pressure, and reducing oxygen uptake. Inadequate light has a direct effect on fatigue, diseases, insomnia, alcohol addictions, suicides, and other psychiatric diseases. Therefore, light has been emphasize and used in the

design of medical facilities. It is noteworthy that the effectiveness of light can be better understood in relation to length of stay (LOS) because it has been reported that exposure to light affects LOS. Generally, while giving medical services, hospitals generate various data about patients, and this huge medical information is accumulated and stored digitally. Such medical data could contribute to good treatments once their associations or patterns have been identified. With proper way analyzed medical data, traditional idea at an individual level could be further extended to broader populations. Therefore, this comprehensive study was performed to demonstrate the effectiveness of light using medical data accumulated over 15 years.

### Methods:

This study used information from a hospital database from January 1, 1998 to December 31, 2013. With 1031 beds, a hospital ward comprise one-, two-, four-, or six-bedded rooms. When a patient is hospitalized, he or she is randomly placed in an empty room in our hospital. Beds close to the door had restricted light and beds close to the window had light. Length of stay was defined as the time from hospital admission to discharge. Inclusion and exclusion criteria Outpatients and patients admitted to the emergency room, elderly people aged >80 years, persons who were moved to a hospital within 3 days after admission, and patients admitted for more than 180 days were excluded. Patients' data were included in this study if they had been hospitalized in a six bedded room and assigned to a bed either next to the window or next to the door and had not changed beds or rooms (patients with a bed in the middle were excluded).

### Study design and independent variable matching:

A retrospective cohort study design was used to compare the group that was showing to natural light (window) and the

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group that was not (door). In public health, a retrospective cohort design can be used to compare groups of individuals. Recently, the usage of observational data has increased, and many investigators use similar techniques to create a control group that is similar to the treatment group. We used the exact matching method, that is, select one patient in the case group (window) and one patient in the control group (door) with the similar characteristics (ie, age, sex, admitting department). Because the data did not include illness sternness and LOS can differ based on department, we coordinated admitting department. Medical departments were grouped appropriately. The number of patients admitted to each department was counted, and the rest were grouped except for the top five departments. All study protocols were reviewed and approved by the hospital's institutional review board.

#### Discussion:

The focus on productivity and cost-containment in health care systems is at present a sustaining defy to hospital management. The LOS in a hospital represents one of the best essential aspects to measure the quality of patient care and it is one of the most widely used variables to evaluate resource allocation in hospitals. Length of stay is also a critical measure to decide the required number of beds for hospitals during planning, and it is a key indicator for comparing process in hospitals across countries. Allocating beds and resources efficiently by shortening patients' LOS is a best way to get maximum productivity in hospitals. Reducing LOS restores hospital capacity, enhance productivity and profits, decreases waiting lists, and heightens patient satisfaction. Furthermore, the beneficial effects of LOS on the public through the National Insurance System have been reviewed intensively. Numerous methods, such as early discharge planning; have been recommended for falling LOS. Medical personnel involved in patients' hospital care are under convinced pressures worldwide to minimize LOS. Because the LOS is a extremely robust variable to evaluate the recital of hospitals, we selected it as our key variable. Some studies have investigated light and its efficacy as part of the ward environment

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