SYNOPSIS

KEY POINT SUMMARY

OBJECTIVES

To investigate how sunlight impacts patient health and to review previous studies that link sunlight with health outcomes in Pakistani healthcare settings.

A comparative analysis of centralised and decentralised nurse station and patient's satisfaction

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Key Concepts/Context

A healing environment arises from careful design that demonstrates measurable improvements in the psychological and/or physical states of staff, patients, and/or visitors. When focusing on Evidence-Based Design, deliberate efforts based off of solid evidence should be made to construct the most effective possible ICU layout, thereby creating the best possible healing environment for patients and a suitable work environment for staff. Previous studies have shown that several aspects of ICU design can bolster patient and staff satisfaction. These aspects include, but are not limited to: nurse workstation placement, single-bedroom accommodation, window placement, larger bed spaces, and indoor temperature.

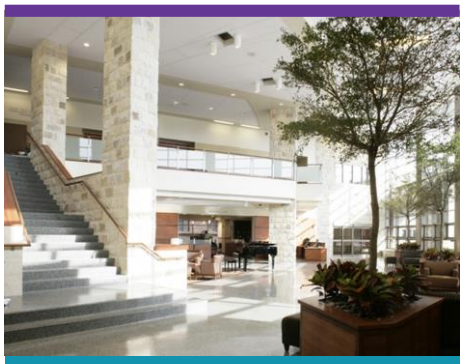
Methods

Patients, nurses, and visiting families in a daycare center were invited to participate in a survey about the aesthetics of the hospital space in relationship to their personal sense of well-being while being in the hospital. Over 100 answers were received and statistically analyzed in Microsoft Excel.

The nursing stations in both a pediatrics unit and a burn unit were compared to analyze effectiveness and staff satisfaction.

A literature review was conducted to compare the qualitative results of the questionnaire with previous studies focusing on the impact of sunlight on patient and healthcare staff well-being.

To help further understand the mechanisms by which sunlight influences human health, two 3D models of the hospital were created in AutoCAD and analyzed for thermal calculation in ECOTECT.



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Findings

When quantitative observations and numerical data of daylight luminance in the ward were compared, an association between more sunlight and higher senses of well-being was identified in both patients and staff. In the literature review section of this study, one paper noted that patients exposed to an "increased intensity" of sunlight reported less perceived stress, marginally less pain, saw a 21% decrease in medication costs, and took 22% less analgesic medications per hour. In the questionnaire used in this study, bedridden patients showed a particularly high preference for having views of nature through hospital windows.

Design Implications

As some of the literature reviewed in this study indicates, centralized nurse stations could more easily allow for ICU designs that allow more sunlight to enter the building. When considering window placement or size, the hospital's geographical location should be considered; in one example, increased UV intensity at a high-altitude hospital makes control of sunlight an important design consideration. Since research has shown that single-bedroom accommodation can increase patient privacy, safety, and sleep quality, single-bed rooms should be considered over rooms with multiple beds. It is noted several times that contact with nature, be it visually through window views or physically through garden access, has a positive impact on patients, staff, and visitors, thereby implying that hospital design should somehow incorporate access to nature in planning and construction.

Limitations

This study featured no quantitative data, and qualitative data was gathered only through an eight-item questionnaire that was given to occupants in all units of the hospital. Evidence supporting the benefits of sunlight via windows is purely anecdotal or based on cited literature. Support for the centralized nursing station design is similarly anecdotal and based on a brief literary review.

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AIA Academy of Architecture for Health of the American Institute of Architects

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