SYNOPSIS

KEY POINT SUMMARY

OBJECTIVES

An outpatient waiting area is designed to be less clinical and institutional and more supportive for patients. The old and new waiting areas for an outpatient service in a U.K. hospital are compared in terms of their effects on the 1) environmental appraisals, 2) self-reported stress and arousal, 3) satisfaction ratings, 4) pulse readings, and 5) more detailed evaluation of specific environmental features of 145 outpatients.

Outcomes of Environmental Appraisal of Different Hospital Waiting Areas

Leather, P., Beale, D., Santos, A., Watts, J., Lee, L.
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Key Concepts/Context

Hosptals can be unfamliar environments and can create negative feelings and stress. The physical environmentcan be a source of stress or haved an effect on coping resources. Past research identifies disparities and hierarchical differences between the way environmental needs and desires are prioritized for clinical and medical staff; inpatients; outpatients; and visitors. Few studies evaluate ambulatory care environments. This article evaluates interior design changes made to a neurology outpatient waiting area in a city hospital in the United Kingdom following relocation to another building. According to the authors, the impact of the physical environment derives from the individual's appraisal of the environment itself.

Methods

Using structured interviews, a two-sample comparative pre and post design was used to evaluate differences in the waiting area of a neurology outpatient clinic. The equivalence of the two samples was determined by comparing the age and gender composition and the health profiles. Variables considered included patient appraisals and evaluations of the environments together with their mood and physiological arousal. The sample consisted of 145 neurology outpatients interviewed in two groups: 81 patients in a traditional (existing/old) waiting area and 64 in a nouveau (renovated/new) waiting area, four weeks after the area had opened.

The interview consisted of five sections administered at two times. Section 1 included demographic information along with 7-point rating scales measuring self-reported pain, anxiety, and disability and Section 2 consisted of an abbreviated version of Cox and Mackay's Stress Arousal Checklist (SACL) - a set of unipolar mood-adjectives rated on 4-point scales to measure two fundamental aspects of

mood: self-reported stress and self-reported arousal. These were administered together. Seven minutes later, the remaining sections were completed. Section 3 included Fisher's Perceived Environmental Quality Index (PEQI) as a measure of affective appraisal (14 7-point scales related to perceptions of the environment). Section 4 included 10 7-point rating scales related to a specific design feature , as well as perceived overall satisfaction with the environment as a hospital waiting area. Section 5 included an alternative version of the adapted SACL including the same items as in Section 2 but in a different order to minimize any memory effects from completing the SACL previously at Time 1. Pulse was recording by a pulse meter attached to the patient earlobe.

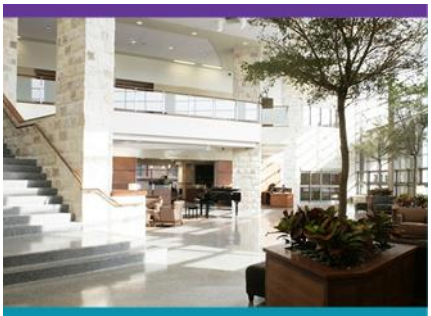
Findings

A between-subjects multivariate analysis of variance, using scores on the PEQI items as dependent variables, revealed a significant multivariate effect for waiting area. The renovated environment was rated as being significantly more colorful, positive, stimulating, attractive, relaxed, comfortable, cheerful, good, lively, bright, motivating, pleasant, and open. The impact of the two waiting area environments (the between subjects factor) on self-reported mood and pulse rate (the within subjects factor, recorded at two times) was examined by means of separate mixed analyses of variance. No significant effects were found on self-reported arousal, but self-reported stress increased over time in the traditional waiting area and decreased across time in the new waiting area. A similar Waiting Area-Time interaction was found with respect to pulse, where pulse rate increased over time in the new waiting area while decreasing in the traditional waiting area (in accord with the appraisal of that environment as having a greater arousing potential) . This Waiting Area-Time interaction supports theories that the stress of a hospital visit can be ameliorated by a comfortably designed environment. More broadly, the Waiting Area-Time interaction demonstrates the importance in environmental research of considering the possible interactions between physical and psychosocial elements—in this case, that the physical design of the waiting area buffered the negative impact of the stress.

Satisfaction ratings for the two waiting areas, whether for the two environments as a whole or for specific features therein, were compared using a between-subjects multivariate analysis of variance. The refurbished area was rated better for overall satisfaction, as well as its layout, color scheme, floor covering, curtains, furniture, lighting, pictures, and plants. The results provide convergent evidence that the renovated waiting area is associated with more positive environmental appraisals, improved mood, altered physiological state, and greater reported satisfaction.

Limitations

No limitations are cited by the authors, although they note the data and analysis does not allow precise identification of the relative importance of individual design



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elements. While a table of features is provided, no photographs or diagrams were published to allow a visual or spatial comparison of the spaces for the reader. Study investigated one instance of Aspergillus conidia caused infections and cannot be generalized.

Design Implications

These findings provide support for the concept of a therapeutic hospital environment, and an important implication of the study is related to the renovation aspect of the area – no structural changes were made to the new space. Improvements in outcomes can be achieved through changes to such interior design features as lighting, color scheme, and furnishings. Additionally, the waiting area is an important consideration due to both first impressions and the inherent association of building anxiety and worry about possible treatment. Based on this example, considerations might include:

- an open layout with no visible paperwork and clutter;
- a lighter, coordinated color palette;
- high-quality fabrics for furnishings and window treatments;
- decorative light fixtures (e.g. sconces);
- artwork of nature;
- higher-end reading materials; and
- plants suitable for indoor environments