



KEY POINT SUMMARY

OBJECTIVES

To examine the impact of certain room modifications on patients' perception of an outpatient infusion room used for rheumatologic disease treatment.

Impact of healthcare design on patients' perception of a rheumatology outpatient infusion room: An interventional pilot study

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Key Concepts/Context

Evidence-based healthcare design attempts to reduce stress and other environmental complications for medical staff and patients, and the effectiveness of these designs is often measured by expressions of satisfaction and improved health outcomes. These designs may include, but are not limited to, noise and disturbance reduction, layout simplicity, lighting adjustments, implementation of non-healthcare atmospheres, improved potential for self-support, sensory stimulation, and more options for privacy and spatial personalization. At the time of this study, no previous research had investigated the effects of evidence-based healthcare design as they relate to rheumatology outpatient clinics. Rheumatoid arthritis, which causes malformations, pain, reduced movement, and increased co-morbidity and mortality, is often treated with biological agents administered intravenously in spaces known as infusion rooms.

Methods

The study was conducted at a university hospital's outpatient rheumatology clinic in 2012. The clinic's infusion room offers intravenous treatments for up to six patients at once. Patients may spend anywhere from 30 minutes to three hours within the infusion room, depending on their specific healthcare needs.

Before the intervention, the infusion room was described as "neutral" in style with white and grey colors and standard furniture, along with mobile infusion pumps. Based on the needs identified in participant surveys and other principles of evidence-based design, the infusion room was remodeled over the course of six months.



Design aspects modified as part of the intervention included:

- Coloring of the room was changed to Gaussian blue, a variety of greens, and pure white.
- Decorative paintings replaced posters containing disease-related information.
- Wheeled infusion pumps were replaced with wall-hung pumps.
- Ergonomic, home-like furniture was installed, including small tables for personal items.
- Coat hangers, carpets, and personal reading lamps were added.
- Magazines and beverages were made available.
- Artificial olive trees were added as room dividers.
- An illuminated water bubble wall including trickling water sounds was installed.
- Staff was asked to keep the room temperature comfortable.

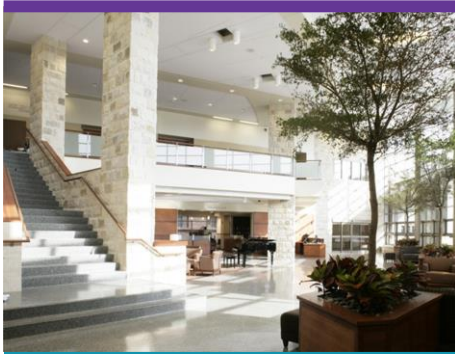
A total of 44 consecutive patients aged 18 and older who received at least two infusions within the treatment room were involved in the study: 35 females and nine males. 82% were receiving treatment for rheumatoid arthritis, 11% for psoriatic arthritis, and 7% for axial spondyloarthritis. Median age was 55 with a median disease duration of 11 years. These participants answered the same self-administered 25-item questionnaire before and after experiencing the intervention. The questionnaire asked participants to use a 5-point scale to rate their impressions of different aspects of the infusion room's design, management, and sensory appeal (smells, temperatures, lighting).

Findings

Comparing the survey scores from before and after the intervention, statistically significant improvements occurred in 17 of the 25 possible agreement scores. The most significant improvements were indicated for room colors, personal privacy, and décor amount and style. Scores in only two categories decreased after the intervention (sound level appropriate, socializing with other patients possible), and neither was statistically significant. Overall, the survey results are consistent with assertions made by previous studies that patients appreciate and benefit from nice surroundings in healthcare settings.

Design Implications

The present study displayed how nearly every sensory aspect of the healthcare environment may affect patients' overall satisfaction with their experience in a healing environment. Considering how the largest statistical improvements occurred in the categories of room color, personal privacy, interior décor, and the room generally not appearing "hospital-like," designers might consider working to make certain treatment rooms appear more relaxing with light paint colors and



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shades and natural elements such as plants and gently running water. These same elements could double as privacy providers, much like how the artificial olive trees in this study acted as room dividers.

Limitations

A relatively small sample size was used, and was sourced entirely from one clinic. The authors state that their questionnaire had to be specifically designed for this study, as no previous questionnaire was available within the available relevant literature. While levels of “agreement” were assessed among participants, no form of data regarding improved health outcomes was gathered.

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