SYNOPSIS

KEY POINT SUMMARY

DESIGN IMPLICATIONS

According to the findings of the study the architectural and design elements in a healthcare setting may have a design placebo effect on patients and may influence their post-clinic stay health behavior intentions. However, further research is recommended to ascertain the findings.

Clinic Design as Placebo—Using Design to Promote Healing and Support Treatments

Rehn, J. & Schuster, K. 2017 | *Behavioral Sciences, Volume 7, Issue 4, Pages 1-12*

Key Concepts/Context

In this study the authors propose that not unlike a medical placebo effect, the built environment can impact individual judgments and behavior, especially in healthcare environment. The authors refer to this as a design placebo effect. A study was conducted in a partially renovated rehabilitation clinic in Germany before and after renovation to determine whether there is a design placebo effect, and if design elements can impact patient judgment and their intentions to change health-related behavior. Findings from the study indicate that design elements may cause a design placebo effect and influence patient judgment and patients' intent to change their health behavior.

Methods

To test the above-mentioned hypotheses, the authors conducted a comparative study in a rehabilitation clinic in Germany. The clinic had been renovated, with the major design change taking place in its lobby. Other changes included change in entry to the building, a central service counter, coffee bar, addition of bigger windows, replacing old dark-colored carpets with light grey PVC floors, and addition of bright furniture and color elements to the patient rooms. The study involved administering of surveys to patients in four phases – one before and during the renovation period and the other three scattered over the next 21 months. Phase 2 of the study took place in summer (referred to as the summer group) while phases 3 and 4 took place in winter (referred to as the winter group). The clinic had an existing practice of asking its patients to fill out a questionnaire at the time of discharge, so the surveys became part of a standard practice. The surveys, apart from questions on sociodemographic aspects, also asked questions about satisfaction with the staff, treatment, food, room, and building qualities – there were 22 items in all. The study participants totaled 851 – 211 in the first phase and

640 in the three post-intervention phases. The survey responses were analyzed statistically using multiple analysis of variance or MANOVA, analysis of variance or ANOVA.

Objectives

The objective of this study was to examine the impact of a new clinic design on patient judgment and behavior and test the following hypotheses:

- Architectural and design features influence factors not directly connected to the healing process.
- Design of the lobby influences health-related behavioral intentions.
- Seasonal conditions influence the evaluation of the clinic and clinic-related aspects.
- Design of the patient room influences the evaluation of the clinic and clinic-related aspects

Findings

Influence of seasonal conditions: Patients rated the following items on the survey higher in summer than in winter:

- Evaluation of staff (p=0.029)
- Patient room (p=0.006)
- Waiting area (p=0.001)
- Atmosphere (p=0.002)
- Food (p=0.019)
- Stay in general (p=0.006)

The authors conclude that based on the above findings, their hypothesis – seasonal conditions influence the evaluation of the clinic and clinic-related aspects – is accepted. The authors point to increased exposure to sun, higher temperatures, and increased outdoor activities during summer as contributory factors to the overall higher satisfaction of patients. Therefore, seasonal conditions do affect patient behavior but not as a placebo.

Influence of the architectural intervention on patient's judgment and behavior: Following the above findings regarding the impact of seasonal conditions, the

authors considered the summer group to be a confounding variable and did not use their responses in any other analysis. ANOVA revealed the differences between phases 1 and 4 to be significant (p=0.010) and the following items received higher ratings by the post-intervention group:

- Waiting areas (p<0.001)
- Atmosphere (p<0.001)
- Overall rehabilitation experience (p<0.001)
- Training rooms (p=0.045)
- Food (p<0.001)
- Therapy rooms (almost significant at p=0.057)

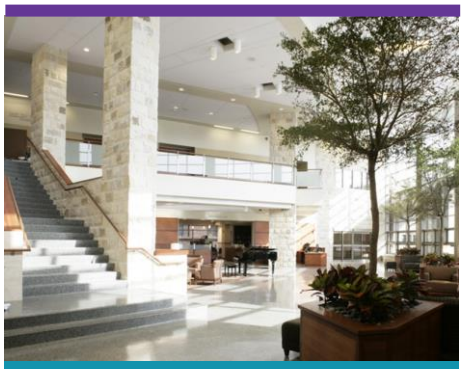
Even though the food and beverages, training, and therapy rooms had not undergone any design changes, they still received a higher significant rating. The authors attribute these higher ratings to placebo effect of the design intervention carried out in other areas. As such, they accept their hypothesis – architectural and design features influence factors not directly connected to the healing process.

Influence of the architectural intervention on patient's health behavior intention: In response to the survey question that asked patients if they intend to change their health behavior following their stay at the clinic, significantly more patients in the post-intervention group answered yes than those in the pre-intervention group (p=0.028). Authors attribute this increase to the design of the renovated lobby and hence accept their hypothesis – the design of the lobby influences health-related behavioral intentions.

Influence of the design of the patient room on the evaluation of the clinic and clinic-related aspects: The renovated patient rooms were rated significantly higher than the non-renovated ones (p<0.001). This rating was attributed to the renovation and was not considered a design placebo effect. The following aspects received significant low ratings from patients in the new rooms versus the old ones:

- Physicians (p=0.089)
- Social understanding between patients (p=0.091)
- Waiting area (p=0.035)

The authors argue that patients in the renovated rooms spent more time in their room, limiting interaction with other patients and hence indicated a low rating for social understanding and waiting area. Further, they possibly evaluated the waiting



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area based on their experience of their own room. The authors refer to this as the design 'nocebo' effect, similar to medical 'nocebo' effect (the negative impact of substances that have no pharmacological effect). Based on this the authors accept their hypothesis – the design of the patient room influences the evaluation of the clinic and clinic-related aspects.

A path analysis was conducted to determine the nature of the relationship between the design intervention and the intention to change health behavior. The analysis found that the two variables were linked. Path analysis also found:

- Changes to the built environment influence the evaluation of the atmosphere ($p<0.001$).
- The evaluation of the atmosphere influences the evaluation of therapy and course.
- Therefore, the changes of the built environment partly impact a patient's intention to change their health behavior ($p<0.001$).
- Atmosphere and therapy are factors that mediate the link between intervention and health-related intention. Atmosphere also has a direct impact on intention ($p=0.021$).
- Based on the above analysis, the authors make the assumption that design and architectural elements significantly influence patients' health behavior.

Limitations

Authors identified their study to have several limitations:

- Outcomes of treatment were not analyzed in the study.
- Only patients with orthopedic and rheumatic conditions were included in this study.
- Confounding variables like social dynamics and nature of illness may have influenced the findings.
- Several design changes were made to the clinic; this study does not attribute effects to any one design feature.
- Patient perception of design elements could be influenced by their individual and cultural experiences.

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