

A case study investigation of the indoor environmental noise in four urban South African hospitals

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Abstract:

This multiple case study was designed to investigate acoustics in multi-bed general wards in four urban South African hospitals. Evidence-based research shows that a quiet indoor environment has positive outcomes for hospital patients and staff. Though international guidelines define noise limits in hospitals, numerous studies world-wide reveal that few hospitals, if any, comply with these. The goal of this research is to determine whether hospital design paradigms in South Africa should be changed to improve the acoustic environment based on the findings of an acoustic assessment. The acoustic conditions in wards were assessed in terms of actual and perceived noise levels and architecture. The primary objective was to determine whether the selected hospitals are considered to be too noisy with reference to international guidelines. The secondary objective was to determine whether design factors influence the noise level. It was found that the average sound levels exceeded the guidelines, yet the overall perception was that the wards were not too noisy. Layout and workflow have a likely influence on noise, requiring innovative design to avoid activity in the direct vicinity of the patient bed areas. Further research it recommended regarding revision of noise guidelines and the potential benefit of masking sound.