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Effects of healthcare acoustics on medical outcomes

Roger Ulrich

Texas A&M University, Department of Architecture, 3137 TAMU, College Station, TX 77843, USA

Although considerable research has examined detrimental effects of noise on patient sleep quality in healthcare buildings, few studies have investigated the extent to which noise may worsen other types of patient clinical outcomes. Studies are also scarce concerning the effects of noise and poor acoustics on healthcare staff. The presentation describes a prospective controlled study conducted with colleagues in Sweden that examined the impact of higher versus lower noise levels, and longer in contrast to shorter reverberation times, on several patient and staff outcomes in a hospital coronary critical care unit (CCU). Acoustics were altered during the study period by changing the ceiling tiles throughout the CCU from sound-reflecting tiles to sound-absorbing tiles of similar appearance. Regarding patients, an improved acoustics environment significantly reduced physiological stress, increased satisfaction with quality of care, improved sleep quality, and lessened incidence of costly re-hospitalizations following discharge. Better acoustics also improved speech intelligibility, and healthcare staff experienced reduced work demands and less pressure and strain. The discussion concludes by outlining research directions, including the need for more outcomes studies to enable development of a strong business case for better healthcare acoustics.