

E.R.C.M. HUISMAN, H.S.M. KORT. The effect of the indoor environment on the quality of life of older people. Gerontechnology 2016;15(suppl):84s; doi:10.4017/gt.2016.15.s.724.00 **Purpose** The number of older people is increasing rapidly in the world¹. This goes together with sensory changes and increased risk of age related diseases like psychogeriatric disorders². Frail older people suffering from a psychogeriatric disorder often need institutional care and therefore live in long-term care facilities (Lctf). In Lctf, they spend most of their time indoors (95%)³. Additionally, older people have an altered sensitivity to indoor environmental (IE) parameters (light, acoustics and indoor air quality (IAQ))². Several studies described that light has influence in improving some cognitive and non-cognitive symptoms of psychogeriatric disorders⁴. Sound is another indoor environmental parameter which might be a barrier for daily functioning of older people with hearing loss, especially, in holding conversation in noisy environments⁵. Also IAQ is important for comfort and health of building users⁶. This study was designed to gain more insight into the combination of the aforementioned IE parameters in Lctf and the influence on the QoL of older people. **Method** In a field study IE parameters of common living rooms of a Lctf were measured. Long term sound level measurements were performed to determine the background noise as a function of time and frequency⁵. Light measurements, including horizontal and vertical illuminance at relevant positions and viewing directions, were conducted to describe the light conditions in the common living rooms. IAQ was measured indicated by CO₂ and by recording analysis of notifiable infections outbreaks⁷. **Results & Discussion** Sound level measurements showed peak sound levels mostly caused by the slamming of doors and near activities of residents and healthcare professionals⁵. The light measurements showed that an illuminance level of 1000 lux, which is required for activation of the circadian rhythm⁸, is not achieved at all positions. IAQ measurement showed CO₂ levels exceeding the threshold of 1000 ppm during the night. A max of 1790 ppm was measured once during daytime. Outbreaks of *Norovirus* occur approximately every year with a duration of 10 days affecting an average of 12 residents. Older people have different demands to IE conditions compared to younger cohorts who are often used as a reference for IE standards⁹. This in combination with an alternated sensitivity for the physical environment² demands for a change in Lctf current IE thresholds in order to contribute to QoL of older persons.

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