Visual comfort in bedded areas of healthcare buildings: experimental analysis of a case - study and intervention proposals
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This thesis is part of activities carried out previously on other hospitals. It has as objective to consolidate a working method that enables to identify the guidelines for hospital lighting design. We want to ensure that this research is not based only on theoretical concepts or regulatory requirements but also includes the subjective point of view of users. It was then decided to proceed on an experimental approach consists of a subjective and objective analysis, in order to compare the data obtained from measurements made on patient beds and questionnaires them submitted.
Subjective analysis
The analysis developed through questionnaires elaborated with the cooperation of the Psychology Department from Turin University. The questionnaire was submitted from me directly to the patients that agreed to work with us, in order to make easier the comprehension of the questions and the compilation of the questionnaire. We’ve chosen to submit the questionnaire only to residents who are much more sensitive and critical to the kind of treatment they receive. In my case it was possible to compare two different types of wards in terms of permanence within the hospital. Patients present in the dialysis Department, in turn, were divided in three categories. First category is that of patients that submit to the therapy for 4 hours and for 4 days/week; second category is that of patients that follow the same therapy of first category but in the afternoon and third category is that of night’s patients that follows therapy for 6 hours during night sleep. Dialysis patients are therefore of “regular guests”, they know the structure for years, and apart from some sudden change, stationed during therapy in the same bed. In the Urology, General Surgery and Vascular Surgery departments patients are kept in hospital according to the healing time that can be short as a few days or longer, up to a month. It is assumed that patients that remains for months in the hospital are much more interested and careful of the quality of light and they have a perception even more aware than the patient admitted for a few days. The questionnaires had a first part where we collected general data such as age, sex, visual disturbances, permanence, in order to make the appropriate comparisons between the different departments. The patient is requested to answer questions through a ladder, expressing an opinion in terms of satisfaction and importance from 0 to 10 in three different conditions.
Condition 1: the patient was placed in the room, then without changing any aspect of the environment.
Condition 2: Just natural light, thereby raising all screens and turning off artificial lights lit.
Condition 3: ambient light and headboard lit.

The conditions 1 and 2 were analyzed during the day usually from 09:00 to 13:00 condition 3 was analyzed in the afternoon and in the absence of natural light from 17:15 to 19:00.

**Objective analysis**
Three different departments of the hospital were involved in this analysis according to the orientation and restructuring state.
The instrument used was the luxmeter to evaluate the \textit{illumination $E$ [lx]} defined as the amount of light that affects surface area. Eight points were encountered on each bed examined.

The collection of these data made possible to calculate other values of illumination as the \textit{average illuminance}, \textit{daylight factor (i)} and \textit{the average daylight factor (FLDm)} which were compared with the reference norms.

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