



KEY POINT SUMMARY

OBJECTIVES

As part of a larger research collaboration, the objectives were to discuss the quality and significance of HOS in Serbian hospitals and include the study in an academic course to introduce the students to the participatory design process, to identify the problems, recognize the potentials of outdoor spaces from a post-occupancy evaluation (POE) user's perspective, to create a reference for future evidence-based designs, and finally to renew, mend, and improve HOS in four hospitals.

Evaluation of hospital outdoor spaces through users' participation analysis

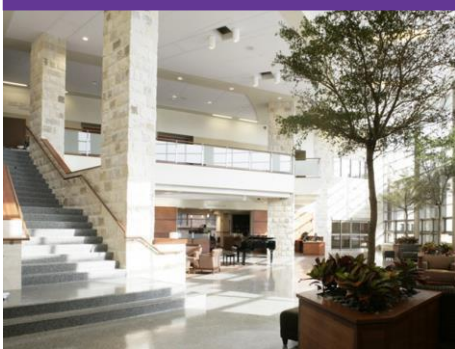
Djukanovic, Z., Maric, J., Giofrè, F., 2017 | *Facta Universitatis, Series: Architecture and Civil Engineering, Volume 15, Issue 1, Pages 73-84*

Key Concepts/Context

Hospital outdoor spaces (HOS) have an important role in healthcare facilities that specifically impacts the healing process. Literature reviewed by the authors refers to HOS as left-over spaces for supporting other medical activities. Outdoor spaces are not considered to be an integral part of the hospital. It is important to reduce the visual discomfort in patients and the anxiety caused by sickness. It was indicated by the literature that HOS can influence clinical outcome and the staff effectiveness in performing daily tasks. This research focuses on the user's perspective to show the value of HOS in contributing to the well-being of the case study group.

Methods

The study was based on a POE survey of stakeholders to do quality assessment based on the surveyor's observations, using a two-part questionnaire, developed by graduate students as a part of an academic course and conducted at four major hospitals in Belgrade. Permission to conduct the survey was granted by each hospital's ethics board. In four extended questions the surveyors were asked to describe the type and spatial characteristics of a specific place in the hospital where they conducted the questionnaire interview with three user groups: patients, employees, and visitors. They noted space dimensions, pathways, greenery, building condition, and outdoor furniture. They also described people's presence, behavior, activities, and emotional state, adding their own opinions about space design, accessibility, orientation, and emotional impact. The second part consisted of 13 pre-coded open and closed questions concerning users. A total of 15 graduate students conducted the survey over a four-week period involving over 120 participants at each participating hospital site.



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Findings

The survey provided an overview of the feedback of the hospital community: doctors, patients, staff, and visitors. It was a participatory design process involving stakeholders from all sides. A total of 160 participated in the survey including 120 users that were interviewed by the surveyors and 40 staff members who provided feedback information. In all, 31% were employees, 36% were patients and 23% were visitors. The advantage of the participatory process led to designs that met user requirements from multiple points of view.

The responses to the questionnaires were read in conjunction with behavioral observations tracing movements and activities. In the first part of the questionnaire regarding the HOS the biggest problems were the general condition and maintenance, pathways, and outdoor furniture. On the other hand, greenery, nature, and the surrounding forest were viewed positively by the users. The second part of the questionnaire showed that half of all participants spend more than 30 minutes a day in these spaces for relaxation (55%) or to have conversations (30%). The overall quality of the elements of the outdoor spaces were given an average score of 3.5 out of 5. Greenery, accessibility, and safety were given the highest scores, while parking and outdoor furniture were listed as the worst. Regardless of this, more than half of the users confirmed that they felt better after spending time outside.

Limitations

The survey was initially conducted over a two-week period interviewing 480 users from the three selected groups at the four major hospitals. After the questionnaires were completed the results were submitted to each hospital's ethics board for their feedback. Only the Medical Center clinic "Bezanijska kosa" responded in time for preparing the manuscript, therefore, 160 participants (120 interviewed + 40 employee feedbacks) are presented in this study instead of 480.

The following limitations were noted by the authors: Despite having an anonymous questionnaire, many participants would not answer questions adequately or sincerely due to strict hospital employee rules. Depending on the situation in which patients and visitors were found, the questionnaire was sometimes considered to be physically demanding. In addition, personal questions were deemed inappropriate by some. And for different reasons, more than 60% of users refused to participate.

Design Implications

The new developed design needs to be implemented with another follow-up questionnaire over the next four to five years. The results of the study relative to specific design interventions are subsequently considered to be incomplete and



inconclusive. However, it is important to include HOS as an integral part of hospital planning and design. The project research phase should involve end user feedback in the form of previous post-occupancy evaluations as much as possible to develop successful hospital environments.