

RESEARCH REGARDING UTILIZATION OF GREEN WALLS IN MEDICAL INSTITUTIONS

CERCETĂRI PRIVIND UTILIZAREA PEREȚILOR VERZI ÎN INSTITUȚII MEDICALE

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Abstract. *The main purpose of the current paper is to highlight the impact of the design of a green wall in a medical recovery clinic where patients with various deficiencies are treated, which may or may not involve comorbidities. Due to the hospital environment, they chose to use lichens and stabilized plants, which don't require additional costs or specialists for maintenance. Also, there aren't risks related to the emergence of complications related to the patients' health, and the colours of the plants are maintained for a long time and don't require extensive spaces. A connection with nature has been found to reduce stress and remedy mental fatigue. This is due to our body's automatic reaction to seeing and being around natural elements. The methodology of interior and exterior revitalization of a hospital is based on the knowledge of the principles of healing and the design of therapeutic gardens and their positive influence on the psyche, perception and health of human beings. This methodology concerns the connection between humans and nature, the influence of nature on a person's psychological perceptions, the connection between nature and human health, and last but not least, the importance of green vegetation as a supplement to a treatment.*

Key words: vertical walls, lichens and stabilized plants, health

Rezumat. *Scopul principal al lucrării de față este de a evidenția impactul proiectării unui panou verde într-o clinică de recuperare medicală unde sunt tratați pacienți cu diferite deficiențe, care presupun sau nu comorbidități. Datorită mediului spitalicesc, s-a ales utilizarea lichenilor și a plantelor stabilizate, care nu necesită costuri suplimentare sau specialiști pentru întreținere. De asemenea, nu există riscuri legate de apariția unor complicații legate de sănătatea pacienților, iar culorile plantelor se mențin o perioadă îndelungată și nu necesită spații extinse. S-a constatat că o conexiune cu natura reduce stresul și remediază oboseala mentală. Acest lucru se datorează reacției*

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automate a corpului nostru la a vedea și a fi în preajma elementelor naturale. Metodologia revitalizării interioare și exterioare a unui spital se bazează pe cunoașterea principiilor vindecării și proiectarea grădinilor terapeutice și pe influența pozitivă a acestora asupra psihicului, percepției și sănătății ființelor umane. Această metodologie se referă la legătura dintre oameni și natură, influența naturii asupra percepțiilor psihologice ale unei persoane, legătura dintre natură și sănătatea umană și, nu în ultimul rând, importanța vegetației verzi ca supliment al unui tratament.

Cuvinte cheie: pereți verticali, licheni și plante stabilizate, sănătate

INTRODUCTION

In the Middle Ages, at the time when the only hospitals were monastic ones, they had medieval gardens integrated into their composition for therapeutic purposes. They provided both the necessary food for monks and patients, and a harmonious environment for people seeking peace or spiritual healing.

In the United States of America, in 1817, an asylum for people with mental problems, today known as Friends Hospital, set up a small park with paths and benches to help patients in their recovery. Due to the positive results of this discovery, the method was further used in other western hospitals (Simson and Straus, 2008).

The therapeutic effects of nature to improve patient recovery were first mentioned and published in writing by Florence Nightingale in 1860, in a guide called *Notes on nursing: what it is and what it is not*, which was intended to give hints to the women who were involved in providing health care to the people who needed medical assistance. She believed that exposure and visual connection with nature, such as looking at natural scenes through windows or flowers on the bedside table, helped patients recover (Nightingale, 1860).

Curative and therapeutic landscaping proposals are particularly suitable for medical facilities and, in general, for those with health disorders, where they become a major support in difficult situations and can serve as a supplement to treatment. They do not replace medical help and various therapies, nor do they exclude their need. However, their effects can improve and speed up the recovery process in patients.

Gardens and nature walks can also serve as disease prevention. They are designed to heal or promote human health in a comprehensive way, both physical and mental.

Designing and creating gardens is not just a matter of aesthetics, they have a much greater effect on people (Jiang, 2014). Healing and therapeutic landscape

design has boomed in recent years, particularly in the US, but also in the UK, Australia and the Scandinavian countries.

A healing and therapeutic garden is composed primarily so that it fulfils its comforting purpose in particular, acting as an anti-stress. In addition, it contains many other aspects that have a positive effect on a person (Smidl *et al.*, 2017).

Nature is a natural place of relaxation, which can create some positive effects on people. It can serve as a support factor for a proper mental state and internal functioning of the body and can preventively reduce susceptibility to disease (Marcus and Sachs, 2013).

In an early study, Yoshifumi Miyazaki, a forest therapy expert and researcher at Chiba University in Japan, found that people who spent 40 minutes walking in a cedar forest had lower levels of cortisol, the stress hormone, which is involved in blood pressure and immune system function compared to 40 minutes of walking in a laboratory. "I was surprised," Miyazaki recalls, "that spending time in the forest induces a state of physiological relaxation" (Miyazaki *et al.*, 1999).

Starting from these considerations, the main purpose of this paper is to highlight the impact of designing a green panel in a medical recovery clinic where patients with different deficiencies are treated, which may or may not involve comorbidities.

The specificity of this section involves a movement deficiency that determines the patients' desire to be able to move freely in nature.

MATERIAL AND METHOD

Studies were carried out in the Clinical Hospital CF Iași, where an opinion survey was carried out on a group of 50 patients regarding the usefulness of arrangements with plants in hospital units.

For the vertical arrangement, an expanded polystyrene support, light khaki textile material, wooden decorative elements were used, and stabilized lichens of different colours were used as plant material.

Stabilized plants are natural plants whose sap has been replaced by an ecological and biodegradable liquid.

The following principle is followed: the plant absorbs the water, which evaporates at the upper level of the leaves. By replacing the water with an ecological mixture of water and glycerine, you get a plant that no longer needs light and water.

The lichens used in assembling the panels retain their colour over time and are fireproof, so they can also be used for use in public spaces.

Lichens come in a wide range of colours and can be used individually or in combination with other design elements, and can be assembled in almost any shape (Hurdubae, 2023).

RESULTS AND DISCUSSIONS

In order to be able to implement this project, the agreement of the hospital management was requested, the possible options more suitable for this environment and for the needs of the patients who address the department were studied.

In this sense, a questionnaire was designed with the help of which the preferences of the patients were also identified.

A group of 50 patients participated in the survey. After analysing the data chosen by the patients in the target group, the following results were obtained:

For question number 1 (Your gender) 38% of the participants were male (17), and the remaining 62% were female (33).

For question number 2 (Environment of origin) 40% come from the urban environment (20) and 60% come from the rural environment (30).

Regarding the age category (question number 3), 14% are in the 35-54 age group, 32% in the 55-64 group (16), and 54% are over 65 years old (27).

In relation to question number 5 (How do you think that the use of vegetal design elements in waiting rooms and hospital hallways would influence your mood?), the majority answer was positive (92%), only 4 respondents (gender male) answered neutrally.

The colours preferred by the participants (question number 6) were the warm ones - 87%, only 5 women preferring bright colours.

For the choice of favourite plants (question number 7) only 5 men would prefer potted plants, the remaining 92% prefer a green wall.

None of the survey participants have completed such a questionnaire (question number 8).

The participants in the survey are mostly women from rural areas, over 65 years old, with illnesses that reduce their mobility accompanied by pain. They prefer warm colours used in the arrangement of a green panel, no longer participating in such a survey.

It was concluded that the most suitable material would be lichens and stabilized plants. This is how it was proposed and realized the layout with such plant material, of the panel displaying general information necessary for patients.

The presence of green plants at admission would make the first contact with the hospital environment a more pleasant one.

Thus, the initial panel (fig. 1) was arranged with stabilized lichens of different colours (fig. 2) and decorative accents made from pieces of wood.



Fig. 1 - Display panel – original form



Fig. 2 - Panel arranged with stabilized lichens
(concept and drawing by Hurdubae Georgiana Teofana)

This vegetal wall does not require an irrigation system, fertilization, beautification, as lichens do not grow, they can be placed even in rooms without natural light, otherwise it is recommended not to be placed directly in sunlight because over time a pronounced discoloration can be observed of lichens.

Also, the panels have an effect of reducing the ambient echo.

They offer the following advantages: they do not weigh much, they can be easily mounted directly on the floor, wall or ceiling; brings unused urban spaces back to life; special visual impact, right from the start or with dormant vegetation; increases the value of the building/room.

The methodology of the internal and external revitalization of the hospital is based on the knowledge of the principles of healing and the design of therapeutic gardens and their positive influence on the psyche, perception and health of human beings. This methodology refers to the connection between people and nature, the influence of nature on the psychological perceptions of a person, the connection between nature and human health and, last but not least, the importance of green vegetation as a supplement to a treatment.

Wrapping ourselves in the rhythms and forms of nature can be transformative and healing.

CONCLUSIONS

Nature can reduce negative behaviours such as aggression and anxiety. A connection with nature reduces stress and heals mental fatigue. This is due to our body's automatic reaction to seeing and being around natural elements.

Living walls can make us happier and more productive because they appeal to our innate need to be around nature. Bringing natural elements to places where they cannot generally be seen lifts our mood, making us more alert and optimistic.

Lichen panels overflow with an aesthetic and artistic sense at the same time and give the room, in which they are installed, an air of relaxation, well-being and meditation.

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