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Search of futuristic principles for the concept of the medical center for young people

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Abstract: The article emphasizes the role of architecture in creating an atmosphere of mental comfort and its positive impact on human health. Futurological tendencies of the organization of the medical space in the medical facilities of the future are analyzed taking into account the views of students.

Keywords: futurological trends in the organization of architectural space, a youth medical facility, functions, and psychological comfort.

Introduction

The conditions of human existence in the physical environment are considered to be a more influential factor on health than genetic predisposition to disease. Architecture, as a mandatory element of the physical world, is constantly present in the human environment, mainly in buildings with functional purpose, which makes it a highly effective manipulator of consciousness. Contemporary health care buildings are reflected in the design of models developed for hotels, shopping centers and homes, and patients are constituted as consumers and responsible citizens [6]. Further research is needed to compare different project approaches and how to combine them to minimize the contradictory implications for a building project [5, 11].

The effect of psychological manipulation of architecture can have alternative manifestations (for better or for worse), and proposed design decisions can contribute to health stabilization or vice versa, to the development of the disease. In order to change the obsolete practices of organizing the space of medical institutions, it is necessary to turn to new futuristic approaches that have evolved over the last twenty years on the same level of architecture, psychology and medicine, but have not yet gone beyond experimental decisions. Some important medical projects have no chance of being implemented in modern conditions, yet they already require conceptual development. First of all, it is a question of the need to protect youth's health, which is the potential for state development (reproductive, economic, intellectual), but in modern times has limited access to medical care and prevention programs.

The aim of this study was to determine the principles of optimal design of the space of a youth medical facility based on the results of the analysis of the views of university students in Lviv. The task was to conduct a

student survey of traditional universities and to analyze futuristic trends that could be used in the architectural design of the medical center for youth.

Materials and methods

An anonymous study of student youth took place at the two largest state universities in Lviv: Lviv Polytechnic (LP) and Ivan Franko University (UF). The study was attended by 100 students of the Institute of Architecture of the LP and 94 students of the Foreign Language Department of UF in the majority of the fourth year of studies aged 20.3 $\pm$0.4 and 19.6 $\pm$0.9 years respectively. A special questionnaire was prepared, in which questions were asked regarding the analysis of the health status of students, their needs in terms of medical assistance, the effectiveness of their provision and personal opinion on the functional and architectural compatibility of existing medical facilities and their components.

Results and discussion

The health status of students was assessed in the comparison: at the time of the examination and during the period of joining the university. According to the data provided, 41% of students recognized good health at the time of admission (75% were good at the time of admission), satisfactory – 49% (respectively 25%), unsatisfactory – 10% (0% among students LP, 2.2% – in UF). Thus, for the 3–4-year study period, the health status of students has almost doubled. At the time of the study, 19% of students needed medical care every two months, and even more often. It turned out that in the fourth year of study most of the respondents do not have a chosen medical facility, especially this applies to residents of dormitories and those who rent a flat, and together they constitute 63% of LP students and 46.3% of UF students. At the same time, 21% of the surveyed LP students and only 8.5% of UF students use the student passers-by services, but for the most part it is a referral for a medical review, "to be admitted to the session".

Students are convinced that young age guarantees them stable health and does not reflect on the future. Over one third of students (36%) do not go to doctors in case of illness, dealing with self-medication. To the question "Do you turn to the doctor if it was bad, but did it happen?" 83% of respondents answered negatively. Among the reasons that hold back from calling a doctor, half of the respondents answered "self will", 18% complained about the lack of time or unwillingness to have an absence at the university, as well as the distance from the university to the medical facility. Only 28% answered that they did not stop them from visiting the doctor, but they only turned to medical help in urgent need.

Every fourth respondent (26%) admitted that he did not seek medical help because he was ashamed or afraid of doctors and hospitals („suddenly they will find a disease"). Over one third (36%) of students do not trust doctors, complaining about lack of attention and uncertainty about the quality of medical care. Every third respondent personally noticed the unsatisfactory conditions and psychological discomfort that create interiors of medical facilities. Students assessed the functional and aesthetic correspondence of the Student Clinic's premises for less than 3 points on a 5-point scale, and in 93% of cases they supported the need for renovation. 88% of respondents stressed the need to introduce information technology into the medical care system and assessed the need to create a specialized medical online resource for young people (3.68 + 1.0 point on a 5-point scale).

The vast majority (80%) of the respondents said they considered the existing system of medical care at traditional universities ineffective and chose some of the proposed decisions aimed at improving the situation. The largest support among future architects from the LP (71% of respondents) received a proposal to establish a Medical Center at the University with information and advice on acute health problems and prevention programs. Every third respondent (37%) needed effective access to information (website with doctor's advice, electronic record to the doctor), 57% pointed to the immediate need to renovate the Student Clinic. Students – UF philologists mostly favored the modernization of existing medical facilities (73%), and supported the creation of a new medical center at the university (49%) and development of information resources (42%) as a comprehensive solution to the problem of creating a network of medical facilities at traditional universities.

Studies have shown that the implementation of the right to medical care by a young person is a complex problem for many reasons: lack of time in the teaching process, reluctance to stop this process, blind faith in the health of the young body, lack of trust in the „budget" medical aid system and inability to use of commercial medical services due to lack of financial resources. The lack of the need to control health is revealed during the study of the student environment, has a psychological background due to age immaturity and lack of experience in planning life and overcoming its challenges. This was manifested by the reluctance to address doctors for fear of pain or discouraging information about health, even in cases of complaints, no longer referring to a preventive visit. It sounds unbelievable, but every second respondent (48% from LP and 51.6% from UF) does not use dental care. Despite the special period of active sex life, students are not aware of the protection of future reproductive function: only one in five women uses the advice of a doctor-gynecologist (17.7% from LP and 21% from UF), and only 3% and 5% male students respectively are consulted by a physician-urologist. In this, pay attention to the visits of 10% of students of both sexes to the doctor-dermatologist, which indicates the main attention of students on their appearance.

Psychological problems are widespread among students due to the immaturity of age and it is not worthwhile to expect that they themselves will implement preventive programs. In representative studies of the physical and mental health of German [3] and Austrian [4] students, agreed data were obtained that non-medical students are more susceptible to symptoms of anxiety and development of depression, and there are not less than 14%. Research [9] showed a critically low degree of use by students of regular relaxation exercises, without looking at the fact that their positive impact on health has been proven and is offered as a potential starting point to improve the health of young people. An effective way to reduce stress along with solving the problem of overweight, which is severe for young people, is dance or dance [1].

In conclusion, we must pay attention to the salutogenesis theory that good emotional, mental and somatic health requires awareness of the need for action, and the lack of action and its consequences result from the lack of awareness of a specific situation (A. Antonovsky, 1979) [quot. for 2]. Continuing the thought of A. Antonowski, an important psychological principle that should be applied in the design of a youth space is the interest – the emergence of an emotional and sensual relationship between a person and the place where he is [cf. for 2]. Man is interested when on the one hand he can satisfy his needs and expectations, on the other hand, everything is done in harmony with his own psychological needs. Thus, to achieve a positive effect, there must be a combination of functional (need) and emotional aspects. As the results of the research show, students are quite rigorous in assessing architectural solutions used in the design of state medical institutions, they talk about inconveniences and aesthetic discomfort while staying in a medical facility, and in the vast majority insist on changing the architectural design concept and creating a new type of medical facility.

Determining the principles of optimal design of medical facility space for young people based on analysis of futuristic architectural trends

Contemporary world architectural thought emphasizes an extremely limited number of research aimed at scientific justification of architectural and design decisions regarding medical facilities [5, 6. 11].

In the context of conceptual issues, the greatest attention is paid to the problem of psychological adaptation of a human being to the conditions of existence in a physical environment [2, 7, 8, 10]. According to modern thinking, if the physical environment does not meet the usual psychological conditions of a given person, there is a conflict of misunderstanding, stress and unfavorable psychological states: embarrassment, disappointment, anger, aggression. It also emphasizes the need to ensure the privacy of a person through architecture, which positively affects her psyche [7]. A clearly formulated need to personalize personal space and existence in an atmosphere of mental comfort

The „three-dimensional" architecture – functional, aesthetic and psychological – comes together in place of the functional architecture that is subordinate to medicine, and it directly combines the perspectives of improving human health. The promoter of the new style in the architecture of medical facilities is the International Academy of Design and Health, which associates architects, doctors, scientists, practitioners, industrialists, public figures and rewards each year for the integration of salutogenic theory with the architecture of healthcare institutions [10]. Because salutogenesis is an active promotion (development) of health (A. Antonovski,

quoted in [2]), the Academy declares: „We are biased in promoting our health and we believe that the built environment should strengthen and maintain health and well-being [10]. It is believed that the integration of the theory of salutogenesis in the strategy of architectural design in the last 20 years in the world is due to the sudden improvement in the overall quality of new healthcare facilities [2].

Research has shown that the physical environment significantly affects the health outcomes, emotional state, benefits, satisfaction and orientation, but the parameters of mental and behavioral health are not sufficiently researched to effectively include them in architectural design. M. M. Sheeply and co-authors [7, 8] began to study design guidelines that would take into account the mental and behavioral behavior of a human being. The characteristics of the physical environment that have a positive impact on patients and staff have been determined based on a review of over 400 articles and expert opinions (architects, doctors, administrators).

Identified principles can be useful in the design of any medical facility, because almost every patient has a psychological problem.

The first and most important principle is to try, if possible, to avoid institutionalization (link to the medical profile of the institution), on the contrary, to design conditions for creating a sense of hospitality, safety and unconditional trust in institutions in successfully solving their personal health problem [7, 8] . An important issue is the interior of the premises: „non-institutional", resistant to damage furniture, which do not remind the patient that he is a sick person. It is necessary to use daylight as much as possible in different parts of the object, because electric lighting is an inappropriate substitute. During design, it is necessary to provide access to nature and skillfully combine the natural environment of the object and landscape. In the conducted research [2, 7, 8], access to the natural environment and aesthetics was given to the strongest support of respondents.

You need multifunctional non-medical premises (kitchens, corners with plants, gardens, etc.) that can be shared by doctors and patients, which will increase trust and communication between them [2, 7, 8]. Patients' confidence in their free choice and control in the surrounding environment is achieved thanks to the flexible seating system. The sense of autonomy and free choice will be facilitated by the use of personal development items (books, computers, video games). Considering the importance of patient access to the open space, provision should be made for the creation of indoor and outdoor areas for space therapy and the promotion of physical activity. Therefore, the physical characteristics of the patient's environment are of great importance and should be taken into account in the architectural design of medical facilities with a broad profile. The futuristic principles of organizing the space of a medical facility considered above are in fact ordinary elements of self-esteem, peace, comfort and free life.

Conclusions

An analysis of futuristic trends was carried out, which will allow to set the principles of designing a health center for young people with an optimal psychological climate. Clearly underestimating the need to track the health of young people has a significant psychological basis. In order to change the negative attitude of young people to using the preventive side of medical care, the approach to the organization of the architectural space of medical facilities should be changed. One of the solutions may be designing youth physical and mental health care facilities, taking into account the views of young people and the principles of salutogenesis in architectural design.

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