THE IMPACT OF ENVIRONMENTAL FACTORS, AESTHETICS AND PSYCHOLOGY IN DESIGNING HOSPITALS ON PATIENTS

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Abstract. The hospital is very complex and diverse set of needs, contradictions, equipment and facilities that should be designed to the strictest and most efficient way to work. Creating a fresh and comforting space for the audience care spaces that temporarily suffer physical or mental injuries, and even for staff who are always faced with sick people is undeniable. Today, with advances in technology and hospitalization, patients pay more attention to security, architectural design and decoration and real hospital equipment and facilities have been significant developments to improve the health status of patients including those factors that perhaps few people pay attention to its importance. Besides, the functional elements required for each hospital patient. As a result, components can be created in the field of aesthetic value and utilization of this complexity seems to be easy. Environmental consistent and compatible spaces for users to help aesthetic factor may also be effective in the treatment of these cases. Adding artwork and good visibility surrounding scenery, color, light and sound is possible to control the stressors impacted.

Keywords: Design, General Hospital, aesthetics, psychology, environment

INTRODUCTION

In the design of hospitals and health centers, addressing the group that has its own characteristics and form of default is important because of the nature of the soul and the human body in relation to the health of the user who is also the ruler of complex functional relationships, external relations and the part of the hospital, in which, according to design requirements,. Today, more attention to the impact on consumers, especially in the hospital environment, is essential to establish cultural relations, discount fear, and dead themselves are responsible for disease and illness. It seems that the hospital has good quality in terms of aesthetics spaces. Psychologists emphasize that they agree with the physical environment, people will have a significant impact on safety and efficiency. Understanding the interaction between man, the tools they use and the environment in which they live and work, by any study is considered in the design.

LITERATURE

Although the provision of health care and hospital design has a long history but with the approach of hospital design, psychology environment contribute to the aesthetics of the design, and there is no long-term hospital records. What the psychologists seeking for is to achieve the consent of a person with respect to the interaction respectively. Architects are always in search of principles that will benefit its application architecture at the scientific level and at the level of feeling. Also, in the study of many books and articles on psychology the role of the environment and impact of colors, interior decoration and other subsets of patients on a more concrete vibrators and their importance is increasing day by day.

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The impact of environmental factors, aesthetics and psychology
In designing hospitals on patients

**Hospital building features**

Since the second half of the twentieth century, architectural design has undergone major changes in hospital building. This has changed the role that it plays in the city and the community connected and seek to improve performance of certain values that are different from the modern hospital in the first half of the twentieth century. These new values actually improved human agreed vision of reality with recent technological discoveries and new methods of treatment and care, through the selection of contemporary hospital designing by considering the specific needs of each patient to choose the color. Hospital building has a critical role in providing physical needs and psychological needs of the individual (patient-specific) play. Hospital plays a role in the urban environment in creating the positive relationship between the city and the citizens. It promotes the values of recovery and the integration of social and cultural backgrounds. These values were known in the past.

**Humanism in the hospital**

Humanism in major hospitals and other qualities of the architecture is clearly more sensitive areas. In each of these areas, specific psychological and emotional needs of the users are satisfied and patients should first of all on the way to finding answers and acceptance and navigation and guidance they need. In the late fifties, the psychologists seek to describe a new science, the psychology of architecture. The response to the physical environment and special factors include a direct active sensory and helping to determine the quality of the environment. Another issue of psychology is related to human physical space architecture. First, all attention are focused to build a hospital for patients. It is like a person with aesthetic needs, physically and mentally to be considered. In 2001, in Italy, an administrative committee, headed by runs and piano, developed a new model of acute hospital care and high technology started to launch. In its first stage, the theoretical foundation of human space was hospital. In addition, "a health care center, even if it is accurate and regularly through staff training, the environment, communication and reflection rather than in conflict with any attention to human" is worthless. Aesthetic factors in a project are numerous. Regarding the construction space, it can be found through the distribution and composition of the building, the exterior shape and size, finding out the presence of green spaces and worship, furniture, materials, colors, signs, light (natural and artificial), and referencing visual elements (e.g., art equipment) to perform. In the future, it is believed that the hospital has become a model of an "organized network of specialized ".

**Factors influencing patient preference in choosing a hospital**

Satisfying the needs and expectations of patients is one of the most important tasks of health care institutions, in general. Today's, more than ever people are involved in the selection of the hospital and to choose hospital. Miller et al., determined factors in choosing a hospital to receive patients they serve. In this study, patient preferences including 13 factors were examined in this study as follows: Number of stars hospital, counseling in hospitals, old hospital, hospital design, there are single rooms, good environment, good food, a place to park the car and high standards of cleanliness. The factors affecting research results Baldwin prefer patients to choose a hospital, and issues such as short waiting time, security specified on treatment of different transport facilities and the appropriate methods, such as facilities management, including standards related to cleanliness, food, hospital, patient compliance with confidentiality and respect for the character of the same things. The physical environment of a hospital can be stressful for patients, their families and the staff. The stress caused by factors such as excessive noise alarms due to the hospital's paging system equipment. Feelings of helplessness and anxiety caused by poor signage, confusing and long corridors of the building and other aspects of hospital design defects and lack of privacy, and using double room may disrupt the rest of the patients, and the transfer of more and more convenient and immediate need for active infection is time consuming. The combination of design elements such as large windows, soft light art and design campus to enhance the comfort and satisfaction of their patients, their families and the staff is important.
Hospital Area

One of the most powerful in creating a connection center with an outdoor space is sometimes difficult to reach because of its urban fabric possible. The only hospital that no one should have any sign of flavor hospital courtyard is ok if you are in the middle of a night in the hospital to say you have faith. Hospital courtyard recesses patient to empty the stress caused by the visible part of the walls and bed. That is why in developed countries should be at least two-thirds of the hospital area of the hospital infrastructure. Imagine a hospital having the rudiments of a particular area, but the work is not done and have left it without a map. This place is more like ruins over for the viewer to a painful area and joyful enthusiasm. Most of the hospital should be allowed to set short and long layout, the sidewalks and roadway beautification centrist with natural materials, fit and beautiful benches in an appropriate place and sufficient number of boards to help in any number of ways, kiosks and service information, according to marginal lawn and colorful seasonal flowers, designing in the shadows of tall trees shade main routes or tunnels covered with a canvas of color, design and lighting at night.

Hospital Entrance

The main entrance of the building is important and requires careful design and should be considered as a single space because part of the inside and outside of the building belongs to the security and accessibility of essential design considerations must be taken into account. Hospital entrance should be clearly recognizable and draw attention to the newcomers. Color and facade should be considered for patients who trivial. is the beauty of a hospital depends on its entrance and it should be more like the entrance to a hotel, which nice and clean. The color, type, and number of adornment in terms of efficient use of these appliances should be selected carefully. Entrance lighting, especially at night reduces a lot of fatigue and encourage impatient patients and medical staff to be calm. It is open input preferably covered with a canopy shade trees.

Admission

The first admission to the hospital where the patient communicates should have an intimate atmosphere and, the walls must be smooth and decorated with light colors and air conditioning. The images are appealing to them to be executed. This should be placed in a quiet, private entrance. Admission should be placed in the main corridor, and should not interfere with traffic in the hospital as peace and security are necessary.

Day room for patients

Day treatment rooms are not designed as well as other spaces. They are simple rooms with chairs and tables but the room for public space influence is very important. They may be used as a dining area, and a place to meet relatives and friends, and it should be equipped with comfortable furniture and should be surrounded by a garden or yard. If it is not possible to have a beautiful landscape, you also need to have space for the media and Internet access. Finally, the window of the room should have good landscape.

The Child Section

The child must be made in a way to meet the needs of hospitalized children and their families to meet. The child should be decorated in a way that is not different with the child rooms at home. In relation to the needs of children such as decoration and color, light colors should be used.
The impact of environmental factors, aesthetics and psychology
In designing hospitals on patients

Light in the hospital
A healing environment with adequate physical aspects indirectly improves patient. For example, by reducing the length of stay in hospital, stress is reduced, and patient satisfaction is increased. One of the important aspects of creating a healing environment to help architecture is proper use of daylight. Light is an important role for the human visual, on the mental and physical health. Several studies have proven the role of light in reducing depression, fatigue, improving alertness, rhythm modification, and treatment of diseases.

Body Boarding Control
The biological activity of the body's normal circadian rhythm during the day is repeated at specific intervals. Exposure to daylight in open space is a key factor regulating the body's circadian rhythm. Daylight provides a high level of optical spectrum, the impact on patients of depression and drowsiness, irregular circadian rhythm of the body over the course of the hospital leads prevention.

The impact on the mood and perception
The results of several studies strongly support that bright light (natural and artificial), can improve health outcomes such as depression, anxiety, sleep, circadian rhythms of activity, as well as length of stay in patients with dementia and people with SAD. Many studies show that light on depression in patients with bipolar disorder, or SAD is effective. In addition, seven studies suggest that exposure to morning light is more effective in reducing depression with exposure to light at night. Exposure to bright morning light is effective to reduce anxiety in elderly patients with dementia.

The right window
Another important factors in creating a healing environment in relation to light include the correct orientation of the building including appropriate, windows to determine the appropriate amount of daylight, color temperature and radiation balance between electric light and daylight.

Green Space and its Effects
The emergence of a sense of alienation is regarded as the main sources of the problems facing the world and this is people and their built environment. The effect on the mental health landscape and green space developed in recent decades and different theories have been proposed about it, including improved stress theory of Ulrich, who believes that the natural landscape tends to reduce stress, while the actual landscapes are made available not only for improving stress, but also can cause stress. Basically, a good green space, in addition to physical health and mental repose, more work to make a better and efficient for quality of life. It is comparable with the
effects of trees and natural resources, such as reducing stress, getting fit, decreasing blood pressure, increasing irritability and aggression of the positive effects and negative consequences reached by hurting.

**The effect of treatment in the garden**

Hospital beds as the restoration and display of nature can reduce stress and improve results through other mechanisms such as fostering access to social support and positive opportunity to escape a sense of control, with respect to stressful clinical settings. Other studies show that patients and families who used hospital beds had positive mood and stress reduction have been reported. Gardens and nature in hospitals can increase patient and family satisfaction.

**Art in Medical Environments**

Few studies have been conducted in connection with the art hospital. Findings from the study of nature as well as art shows compatible with mental patients who have responded positively to. But, abstract art shows a negative reaction among the large majority of patients.

*Figure 2. Muilli ecclesial Regional Hospital: Waiting area.*

*Figure 3. Ascau Pediatric Clinic: The entrance hall.*

Entrance hall often spread out in space such as lobby (Hôpital Mutualiste Mountsouris in Paris), with its glass walls and a variety of elements inside. In some projects, such as hospitals, Assuta in Tel Aviv, the entrance hall is a combination of a link between "the street" and "not allowed". In many recent cases, especially Germany, the small entrance hall, little attention has been minimal.

Entrance hall is the necessary place to stay and relax. Here is somewhere that you can be relaxed with friends in the comfortable sofas, and talking with people, and watching people. However, the many and varied activities and services the hospital can be a sensory space. One of the most successful examples of Italy's entrance hall is living greenhouse climate at Children's Hospital of Florence (Meyer Pediatric Hospital). The greenhouse structure is made of several layers such as forest charm.
The impact of environmental factors, aesthetics and psychology
In designing hospitals on patients

Figure 4. Meyer Pediatric Hospital (Florence): the entrance.

In Italy, for example, one of the most magnificent entrance hall is located by luxuriant vegetation, the new hospital (Mestre).

Figure 5. New Mestre Hospital: internal (square).

Reduction of Confusion Space
Difficulty in finding the way to hospitals are costly and stressful. And, special effects are for visitors, which are often not familiar with the hospital that is bewildered. While almost all hospitals to make significant problems associated with weak way finding systems, to deal with this problem, a gradual approach is usually difficult. System of finding address, just as the name of better marks or lines are colored floors. Rather, the hospital seeks to provide integrated systems including elements of harmony and understanding of the signs and numbers which are easy to clear and consistent verbal and written by consistent and clearance, and electronic information and physical mail is readable and observable. Alternate color space adjustment plans signpost, and in addition to the impact on the structure of the color, it can add depth to the room, raise height, make us realize the vision and contribute to the overall sense of peace and calm. Today, most hospitals are designing systems including clear and consistent verbal instructions, signs and numbers are easy to understand.

Positive distraction
Positive distraction as a "social and environmental conditions has been defined as the capacity to improve mood and stress." Positive distraction may include a display of nature, light (natural or artificial), art or entertainment.

Several studies of patient satisfaction in hospitals that design elements including access to nature, art, and music have evaluated single room. For example, patients in hospitals with good decoration as well as a more favorable assessment of hotel rooms were hospitalized as doctors, nurses, and support and ancillary services to patients who were hospitalized in regular hospital rooms. Music in times of stress may lower heart rate, anxiety and it may have a positive impact on patient comfort. Researchers consistently have reported that stress or restorative benefits of nature as a set of emotional and physiological changes can be easily detected positively. Negative
emotions such as fear or anger or stress reduces the levels and increases pleasurable feelings. The physiological changes, for example, in blood pressure and heart activity can be effective.

**Improving confidentiality and privacy**

Research has shown that most patients of any age and gender are concerned about their secrets and sought privacy. With proper design and use of curtains, partitions, and other factors can be found among the patients stress divulge secrets. Privacy as a matter of priorities in research emerged. Doctors and nurses visit the patients’ confidentiality and privacy by talking over other people spaces where they or other people look at them.

**The use of color in healthcare settings**

Color is an inseparable part of our lives, and by not using of it, many of the new hospital make confusing. In health care, there are many applications of color. Issues such as lighting, natural design, development, and applications of color theory, color and aging eyes, the cultural dimension of color, and physiological and psychological responses to color need full consideration when designing and shaping the built environment. For example, a color separation line between the floor and wall spaces to those with aging eyes to distinguish between different pages helps reduce mobility issues. Color contrast is improved by understanding of the symptoms and conclusions, increasing the experiences of patients and potentially affecting clinical outcomes by understanding how to apply the paint in the enhanced therapy. In the acute care environment, it is sometimes even more important factor. Research nerves and circadian rhythm studies show that color range from direct light on biological systems and human health effects. Many treatment centers provided instructions for setting color, but the only proposals that show specific color space may depend on welfare of its users. Tofle and colleagues report set specific colors to evoke the art of behavior, mood of influential research proved by evidence. Edelstein and colleagues conducted an extensive search of the literature review on the impact of light and color behavior, feelings, application, cognition, circadian rhythm. They found that the stability of the color of the focus is on lighting and contrasting colors. A survey of the literature concluded between certain colors with specific behavioral and health outcomes.

**Color Preferences Associated with Aging**

The effect of age on color perception and priorities should be considered in addition to the impact of visual disturbances, disturbances often associated with increasing age. Bernini and colleagues found that the priority of colors were in blue, red, green and yellow. In other results “blue” was considered more appropriate.

![Figure 6](image-url)
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In designing hospitals on patients

Color is one of the components of change in the corridor of a hospital to reduce the “sense of space” and “provide a sense of nature”.

**Color Types Used in Institutions for Signs of Health**

For many years, the color is used for routing information. Gibson et al. focused on the use of colors and graphics as critical factors in the design of their health care. In the United States, in order to reduce confusion and help decisions by stereotypes for color coding which has been developed for information, warning red, yellow or amber caution information and advice on other colors, ANSI and ISO color standards similar codes have been introduced. The ISO standards are safety colors, signs and graphics to reduce accidents at facilities, such as public hospitals.

**The Role of Color in Healthcare**

1. Patient region have access to natural daylight so that doctors can assess the skin. Clinical skin color is essential. Colorful walls, areas should be arranged so that the light will not reflect the color of the surface of the patient.

2. Consider the community's religious and symbolic color, including cultural taboos, prejudice, which may not be specifically related to the community

3. Geographical and cultural bias: In northern climates with long and hard winters, warm colors, cool colors may be more appropriate. In the West, warm light quality True color more intense than the East and in the tropics, warm, saturated colors are often desirable.

4. In view of the functional elements, some factors can be mentioned as follows: the effect of light and color, the age of the people who use the space, the nature and severity of the disease, the effect of the disease or medical condition or understand color blindness, the appropriateness of
the color palette for women, men, and children, the contrast of required level of visibility, and the use as a guide to navigation

5. Address and motivated driver installations: Color logo may be tied to an institution or corporate or brand, tells about a culture of its domain, and the perception of the quality of the selected materials

6. Maintenance: Maintenance is very important in health care. Color plays an important role in the perception of cleanliness.

The Therapeutic Areas

Public health and the environment are used. The materials used to create many resistance levels than their surroundings. Wall and floor materials are the most common ones. The importance of this issue causes an institution to limit the number and type of material or color in some parts of the health areas.

Color and its Impact on the Perception of Space

7. Color can be expanded, short, wide, long, and the illusion of increasing or decreasing the aid ceiling. It is also worth mentioning that it may have significant environmental impact on changing environment.


10. A window should generally hold the opposite wall light, or it will attract a lot of daylight.

11. The walls, windows and the light in the sky on the buffer is too light. Too much light can cause headaches and eye fatigue.

12. Feeling warm colors and cool colors projection that evokes a sense of dislocation back.

Long wave warm colors, cool colors are a short wavelength.

13. The light color makes small patterns visually enlarge a space. Dark colors and large patterns can seem smaller

14. The lack of diversity in the visual environment may be sensory deprivation

15. Those confined to nursing homes, hospitals, and other institutions need to diversify the light color of the walls and artwork for their health. Variety of colors are necessary because a consistent color regardless of prevailing, and its effects on the person. The lack of color in a hospital corridor (white walls, white floors, and possibly even the heat white frames) can be visually risky for older
individuals with low vision and even it can cause the creation of other patients with compromised balance and can lead to crash. Color can spatial relationships, such as joints between walls and floors define visual cues.

16. Route (Finding address): Signs in treatment spaces, when used, should be able to stop and look at a quick glance which can be found. Pale colors may play an important role to play in creating focus on routing.

17. Since the corners of the eye is focused on the retina, the retina is reduced sensitivity to the color of the border until its edge can discriminate between light ones. This is translated into a practical program of the greatest value brightness including color warm, active color, yellow, red, and orange, not saturated colors such as dark green, dark blue, dark brown, which must appear on the periphery of the visual field. This knowledge is especially designed for graphic signs, posters, large paintings, exhibitions, displays, and interior design. Patients may have variety by a skillful arrangement of color values in a row and directed way.

**Practical Applications of Psychology of Color**

18. Red and yellow, for example, may be in settings that encourage creative and social activities which is intended to be used in areas that need concentration.

19. Cool colors in a turbulent environment for people with high blood pressure, or anxious may be more appropriate. Red environment of depressed patients may be appropriate. Color saturation in individuals with autism should be avoided by patients with schizophrenia, and using red must for those with epilepsy and other neurological diseases should be avoided.

20. Busy patterns or very stimulating color settings with patients with neurological disorders such as epilepsy should be avoided

21. Driving, bright colors in the shade for the elderly, who are more difficult to vision.

22. Patterns contrary to the shape of the Earth and very bright colors should be avoided because the mentally ill patients in the room cannot tolerate these colors when these patterns are not covered by the majority of patients, death threats and even intimidating can be caused.

23. In areas with warm colors, a long time is more felt. The weight is heavier than air, and it seems, objects appear larger and smaller rooms appear. Under cool colors, shorter, lighter weight, it seems that objects appear smaller, and the room appears larger. So, cool colors can be frustrating when you work faster because of the lapse of time.

24. Warm colors with high light increases alertness and orientation encourages outward. For areas where the muscular effort and action is required, such as a gym, physical therapy, it is more appropriate. Cool colors and light are less distractions and need more time to focus on difficult tasks encourages. Cool colors is also used to neutralize the negative effects of noise and distraction.

25. Finding a special color supplement that would be assumed. The practical application of this principle is necessary in the operating room surgery. Here, the walls are usually green and blue because at one point the red (blood) is concentrated.

26. The color of the patient's room, aesthetic and clinical concepts are very important. Color can be overhead on the patient's skin and thus affect diagnosis and medical evaluation.

**CONCLUSION**

To create favorable conditions to all known hospital, a designer even cares about the complexities of mental and emotional health. Interesting places to sit and talk, informal groups without process and empathizing others can reduce them. Regarding space, many aesthetic considerations are
used for the mental state of patients and their companions, and the more complex for the design of the centers.

Given the vital importance of aesthetics and psychology environment, the use of natural light, good windows, to cooperate fully with the admission of rooms seem important.

The findings from the art show that art and nature are consistent with the mood of patients, which have responded positively. But abstract art chaotic the large majority of patients respond negatively. Green design - primarily green space, in addition to physical health ,leads to mental relaxation, stress reduction, fitness, a decrease in blood pressure, increase in irritability and aggression effects of positive and negative results. It should be noted that the specific needs of the patient which are taken into account in choosing colors should be considered. Special colors can kill a man out of a special case and there is a certain relationship between colors and health. It is hoped that with the implementation of the new science of psychology and thinking in hospital design aesthetics, these problems could be reduced. With the right to design spaces with light and checking the desired access and use of colors to enhance the spaces and avoiding many hours for clients and people who are in hospitals serum, ideal space would be created.

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The impact of environmental factors, aesthetics and psychology
In designing hospitals on patients


