

## **selection of raw materials as one of the constituents of the internal environment quality in psychiatric hospitals**

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### **Abstract:**

Since there is a large proportion of the world's population with mental disorders, it is up to the designers to contribute significantly to building a healthy environment, the work of interior design, and the design of external spaces that contribute to treatment. Evidence-based design may enable designers to understand the causal links between the environment and psychotherapy.

People need diversity in their visual vision, and diversity is the balance between unity and complexity. Extreme unity leads to incomplete stimulation, while extreme complexity leads to excessive stimulation. Therefore, diversity is achieved in the middle area between them. Excessive stimulation exposure can cause changes in breathing rate, pulse rate, and blood pressure. An increase in muscle tension. Psychological reactions are of various types, and the designer is responsible for finding an appropriate balance between extremism and harmony required in the interior design, and studies indicate that there are many factors that affect the satisfaction of patients and workers in the internal environments of psychiatric hospitals. These factors are considered integrated; the difference of one factor greatly affects the rest of the other factors and affects the users of the place, and all factors affecting the quality of the internal environment should be considered, and that its integration has a positive or negative impact on the rest of the factors, as the poor design of the quality of the interior environment is internal design. It negatively affects not only the physical health of the occupants of the building, but also their mental health. These factors are classified into two categories: spatial and environmental factors.

The choice of raw materials as a component of the quality of the internal environment can affect health, which in turn affects patient satisfaction, the quality of indoor air and ventilation, optical comfort, thermal comfort and acoustic comfort are the important factors in choosing the materials as one of the elements of the quality of the internal environment in the healing environments, which It affects patient satisfaction. And all of these factors affecting the quality of the internal environments of psychiatric hospitals should be taken into consideration and as a result of the field study conducted by the researcher appeared that the problem of research appeared in the apparent deficiency and lack of awareness The importance of choosing raw materials as an environmental basis for the quality of the internal environment for interior design in psychiatric hospitals, which negatively affects the hospitalization process for patients.

The research goal was: A proposal for the most important raw materials as an environmental base for the quality of the internal environment for the design of psychiatric hospitals, which It positively affects the hospitalization process for patients, upgrading performance and improving services with them. The research hypothesis: that choosing the appropriate materials helps as one of the environmental constituents in achieving the quality of the internal environment of psychiatric hospitals and improving performance and improving their services. The internal aim of improving the quality of the internal environment for the internal design of psychiatric hospitals, which positively affects the treatment of patients. Follow the research in the descriptive and analytical approach: through description and analysis to choose the basic materials affecting the quality of the environmental environment. Mechanism for psychiatric hospitals. The research presents some of the materials proposed for use in the interior design of walls, floors, and ceilings that contribute to achieving the quality of the internal environment of psychiatric hospitals. The results of the research concluded that there are some materials for the interior design of walls, floors and ceilings that can contribute to improving the quality of the internal environment of psychiatric hospitals as well Upgrading the performance and improving its services. The recommendations made it necessary for the Ministry of Health to focus on the correct selection of interior design materials that achieve the application of internal environmental quality standards to government psychiatric hospitals in Egypt..

**Key Words:**

(Environmental Factors - Selection of Materials - Quality of the Interior Environment - Interior Design - Psychiatric Hospitals).

**Introduction:**

The internal design of psychiatric hospitals is one of the important specialties in the current era, which led to the need to initiate attention in designing psychiatric hospitals and rehabilitate their internal environment, whether private or governmental, to be able to meet the requirements of treatment in this field, which aims to reach patients to mental health once again and that you know For the World Health Organization, "It is the situation in which the individual realizes his own abilities, where he can deal with the natural pressures of life, and he can also work productively and be able to be an active member of society."

It is up to the interior designers to contribute significantly to building a healthy interior environment from them or the external spaces that contribute to the treatment. Evidence-based design may enable designers to understand the causal links between the environment and psychotherapy.

Evidence-based design can be defined as "the process of basing decisions about the environment designed on reliable research to achieve the best possible results."

Patients need diversity in their visual vision, and diversity is achieved by balancing unity and complexity. Extreme unity leads to incomplete stimulation, while extreme complexity leads to excessive stimulation. Therefore, diversity is achieved in a middle area between them. Exposure to excessive stimulation can cause changes in the respiratory rate, pulse rate, and blood pressure, causing an increase in muscle tension and some psychological reactions of various types. The interior designer is responsible for finding an appropriate balance between extremism and the required harmony in interior design in the internal environments of psychiatric hospitals. Studies indicate that there are many factors that affect the satisfaction of patients and workers

in the internal environments of psychiatric hospitals, which are integral factors and the difference of one factor greatly affects the rest of the other factors as it affects the users of the place. All of these factors affecting the quality of the internal environments of psychiatric hospitals should be taken into consideration. The research hypothesizes that integration in achieving the factors affecting the quality of the internal environment of psychiatric hospitals has a positive impact on both the physical health of the occupants of the building and their psychological health.

As a result of field studies in some governmental psychiatric hospitals in Egypt, the following was evident:

The low level of raw materials used in the interior design and design of the building's external space, services, care and space for treatment, including (site coordination) and furniture compared to hospitals in Egypt and abroad.

□ It was found that the choice of materials suitable for interior design and coordination of the site and furniture is an important role in helping the patient to pass his ordeal and complete the healing and lack of attention to them does not give good opportunities to improve treatment and care services for these patients

One of the reasons for psychiatric patients' lack of response to treatment may be partly due to the inadequacy of the raw materials in psychiatric hospital buildings designated for treatment for their functional and psychological needs, which has a negative impact on the treatment process, which is a challenge for the designers of these hospitals who must take into account the functional and psychological aspects Well without one overwhelming the other.

- **Research problem:**

The apparent deficiency in the selection of suitable materials as an environmental determinant of the internal environment quality of the interior design in psychiatric hospitals, which negatively affects the hospitalization process for patients.

- **Research objective:**

A proposal for the most important raw materials as an environmental basis for the quality of the internal environment for the internal design of psychiatric hospitals, which positively affects the hospitalization process for patients, the improvement of performance, and the improvement of their services.

- **Research hypotheses:**

Choosing the appropriate materials as an environmental ingredient helps in achieving the quality of the internal environment for psychiatric hospitals, improving performance and improving services.

- **Research importance:**

Highlighting the appropriate materials that can be used in the interior design in order to improve the quality of the interior environment of the interior design in psychiatric hospitals, which positively affect the treatment of patients.

- **Descriptive and analytical method:**

through description and analysis to choose the basic materials that affect the quality of the internal environment of psychiatric hospitals.

**First: Selection of materials:**

The materials are classified as hard, flexible or fine. And the material properties of materials such as color and texture are important factors when choosing materials for treating floor coverings, ceilings, and walls in psychiatric hospitals because of their psychological and behavioral effects on humans. The materials chosen in the healthcare environment have psychological implications for the treatment of patients. And the change between materials can limit the areas, pathways and areas for patients in exchange for staff use. The variation is effective in clarifying the use of the place and enhancing the patient's understanding of the different regions. There is a wide scope for selecting raw materials used in sustainable buildings that are environmentally compatible. The choice is not limited to construction materials, but includes the selection of raw materials for external and internal treatments, equipment and equipment that can be used to establish the origin.

There are three main stages for selecting the appropriate materials: research, evaluation, and selection. Initially, the materials and tools available are studied by examining their impact on the environment and human health, and then selecting the appropriate ones for its use.

**Second: The characteristics that must be met in the raw materials of the internal design of psychiatric hospitals:****1 - Slip resistance:**

The slip resistance represents the tested slip resistance of the materials, and is usually provided by the primary properties of the material during manufacture, and the ability to slip on any ground surface in use may be much less than the initial tested value which can result from a variety of factors including pollution or Lack of proper cleaning. Surface slip resistance is a function of one or several of the following factors:

A- Surface roughness (total).

B - Surface roughness (minute) that depends on the surface irregularity of the material.

C- Properties of the material to walk on.

**2 -Sustainability:**

Sustainability requires consideration of the entire life cycle of the product, including extraction, manufacture, installation, use, maintenance, removal and disposal.

**3 -Contribute to the audio processors:**

Noise occurs by walking on footwork, movement of fixed and mobile equipment, communication devices, employee and speech activities, and a wide range of other resources. Studies have shown that hospital noise levels are in much higher ranges than recommended for WHO hospitals. Hospitals are usually overly noisy for two main reasons:

- First: There are many sources of noise, often unnecessary, and many of them are loud, such as calling systems, alarms, telephones, employee sounds, snow machines, air tubes, and wagons. The second: materials and surfaces such as floors, walls and ceilings are usually solid and backwards, do not absorb the sound, which creates a bad acoustic climate.

Noise can negatively affect the healing process in the patient's residence areas, as well as in the care of the elderly and in many areas of treatment and counseling privacy is an important requirement. Also, controlling sound in the areas of employees 'work will contribute to providing a good work environment. A set of environmental interventions that are effective in

reducing noise in the interior design of mental health hospitals must be used, including the use of sound absorbent floors and the use of soundproof roof tiles.

#### 4 -Color:

The use of color for practical purposes is of particular importance in the materials used in mental health hospitals, and they are used as follows:

- Maintain appearance and improve service by reducing unwanted impacts.

Providing an internal environment that helps in achieving the desired results, recovery and stress reduction.

Create designs that define or separate spaces, and add aesthetic and functional value.

- Concerning the floors: the warm dark colors of the floors give a sense of security, while the cool light colors of the floors emphasize the softness of the floors, the dark cold colors give the depth and weight of the floor. Darkness absorbs the illumination.

- With regard to walls: light colors effectively reflect light, warm colors give a feeling of warmth, and cold light colors increase the feeling of room width.

- With regard to ceilings: dark colors reduce the height of the ceiling, while light cold colors increase the feeling of the ceiling height.

#### 5 -Portability:

The specific maintenance system required for materials can be an important factor in choosing finishes, taking into account the following considerations:

Frequency, techniques and equipment used.

- The cost of maintenance as part of "Full Life Cost (WLC)."

- Hazards - Hard and flexible finishes with a smooth surface require constant safety monitoring with immediate pollution removal by standard cleaning procedures for these materials.

Infection Control - Inappropriate cleaning techniques or devices may pose a risk to infection control such as vacuuming.

#### **third: images of The materials used in the interior design of mental health hospitals:**



Picture No. (1) shows the use of vinyl material in the floors of the psychiatric hospital:  
<https://www.pinterest.com>



Picture No. (2) shows the use of rubber in a corridor of a psychiatric hospital:  
[/ http://www.artigo.com](http://www.artigo.com)



Picture No. (3) shows the use of ceramic tiles in baths

<http://pivotek.net/news/christ-hospital-joint-spine->



Picture No. (4) showing the external floor of the stone

[/: http://www.healinglandscapes.org](http://www.healinglandscapes.org/)



Picture No. (5) shows: the use of wood in the walls at the Psychiatric Hospital

[: http://www.cre8joinery.co.uk](http://www.cre8joinery.co.uk)



Picture No. (6) showing the glass walls in psychiatric hospitals

[/: http://glasspartitionprance.blogspot.com](http://glasspartitionprance.blogspot.com)



Picture No. (7) shows the use of vinyl panels on the walls of psychiatric hospitals

[/: https://pvcmed.org/healthcare/pvc-hospital-interiors](https://pvcmed.org/healthcare/pvc-hospital-interiors)



Picture No. (8) shows the use of wallpaper in the corridor of a psychiatric hospital

[: https://www.wallpaperfromthe70s](https://www.wallpaperfromthe70s)



Picture No. (9) shows the use of wall paint in rooms:  
<http://www.buildingbetterhealthcare.co.uk>



Picture No. (10): It shows the use of epoxy paints for hospital walls  
 / : <http://www.healthcaredesignmagazine>.



Picture No. (11) showing the use of paint in  
 / / : <http://blog.gurgaoninteriors.hospitalceilings>



Picture No. (12) shows the use of the gypsum board tiles in the ceilings of the administrative area of the Psychiatric Hospital:  
<https://www.usgboral.com>



Picture No. (13). shows the use of soundproof ceiling tiles in a psychiatric hospital reception area  
 / : <http://makanankhas.xyz/edit>



Picture No. (14) shows the use of wooden panels in the ceiling of the reception area in a psychiatric hospital:

## Results

- 1 -Carpets, vinyl, and ceramics are considered one of the most important materials used in achieving the quality of the interior environment for the interior design of floors in residence rooms in psychiatric hospitals.
- 2 -Wood is one of the most important raw materials used in achieving the quality of the interior environment for the interior design of floors in group therapy rooms in psychiatric hospitals.
- 3 -Wall paper and epoxy paint are considered one of the most important materials used in achieving the quality of the interior environment of the interior design of the walls by sinking patients' stay in psychiatric hospitals.

4 -Wood and glass are considered one of the most important materials used in achieving the quality of the interior environment for interior design of walls in the reception area and corridors of psychiatric hospitals.

5 -The suspended cement ceilings and woods are among the most important materials used in achieving the quality of the interior environment for the interior design of ceilings in psychiatric hospitals.

6- It is possible to use natural raw materials that are made from safe plant fibers, and they do not have any harmful emissions to the environment, as they work on the presence of cleaner indoor air, and these materials can be recycled without any negative impact on the environment.

### **Recommendations:**

1. The General Secretariat of Mental Health of the Ministry of Health should pay attention to applying the factors affecting the selection of raw materials to achieve a quality internal environment for the interior design of its hospital buildings.
2. Those responsible for psychiatric hospitals in Egypt should assign the task of selecting the raw materials for the interior design of psychiatric hospitals for specialists to do so in order to obtain a basis based on a thorough study, which would achieve the quality of the internal environment that contributes to the speedy recovery of psychopaths.
3. Committing the General Secretariat of Mental Health to develop governmental mental hospitals in accordance with environmental standards that achieve the quality of the internal environment and that greatly help in healing the sick when applying them.

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