

# The Impact of Architectural Psychology on the Interior Design of Psychiatric Hospitals

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## Abstract:

The World Health Organization (WHO) defines mental health as a state of physical, psychological and social comfort for the human being and not just the absence of the disease, and there is a growing need to study the spaces of psychiatric hospitals, but from the perspective of the comprehensive concept of correct architecture resulting from the use of environmental psychology and Architect when starting to design buildings and spaces so as to keep up with the requirements of the times such as the negative effects of digital technology, communication technology and industry on human beings.

Hence the idea of this research, which includes the study of the internal space of the psychiatric hospital by architectural psychology where the void with all its elements and components can affect the positive or negative on the patients.

## • Introduction:

Public health (physical and psychological) is one of the foundations of human wealth, on which the nation's structure is based, and mental health is of great importance, perhaps exceeding the importance of physical health because it affects it directly and indirectly, and the external and internal environment affects therapeutic spaces with all the elements it contains on Psychopaths have a negative or positive attitude and here comes the role of the interior designer in providing a correct treatment environment that positively affects the patient's health and contributes well and correctly to the treatment process.

In an attempt to achieve the goal of research and access to a correct internal therapeutic vacuum, it affects positively the user's health of psychopaths, especially in medical residency spaces, the research was conducted in two axes:

The first axis: mental health and psychiatric hospital.  
The second axis: Architectural Psychology (man and space).

## • Research Goals and Importance:

Upgrading the design level and the level of performance of the space, and thus the level of health care in the Psychiatric Hospital, by applying the foundations of architectural psychology when designing the interior spaces for treatment accommodation spaces.

## • Research Methodology:

Descriptive analytical method

### 1. Mental health and psychiatric hospital

Mental health is linked to the quality of life and productivity because of its direct impact on physical health, and the term mental health is one of the most overburdened terms of reactionary ideas, especially in our developing societies.

#### 1.1. Mental health:

Know that it is a state of safety and wellness through which the individual realizes his potential **and** abilities and is able to adapt to the adversity and psychological pressures natural and be able to work productively, share and contribute to society. (1)

Dr. Hamed Zahran has provided another definition of

mental health more comprehensive and detailed that it is a relative situation in which the individual is psychologically compatible (personally, emotionally and socially with himself and environment) and feels happy with others and is able to achieve himself and exploit his abilities and able to face life personally Integrated together with a healthy behavior and good creation, it is a positive condition that includes the enjoyment of mental health and the integrity of behavior. (2)

1.2. Goals and importance of mental health:

Due to its association with the productivity of the individual and its abilities, adaptation and contribution to society, it represents an important pillar unfortunately overlooked by many, mental health problems affect the family fundamentally and therefore affect the society as a whole (3), and summarizes the following scheme (chart (1)goals and importance of mental health).

1.3. Psychiatry:

It is that medical specialty that is concerned with the study and treatment of mental and behavioral function disorder by providing preventive, therapeutic and rehabilitative mental health care or what is known as psychiatric medical services (4) .

1.3.1. Mental illness :

It is known as a functional personality disorder (5) that appears in the form of different psychological and physical symptoms and affects the behavior of the person, which hinders him from practicing his normal life and psychological compatibility, and the treatment of the disease depends on the type and extent of his severity and on the person and the nature of his personality (2).

In fact, there are no reliable statistics in Egypt in the field of psychiatric diseases, as in some organic diseases, but statistical information depends on research, which in turn depends on samples, no matter how large they are, they are small in relation to the population and do not reflect the societal reality of mental illness, and returns this is due to many reasons, including the fact that society does not recognize most of its different levels of mental illness, fear or shyness from this recognition, and this is because of traditions that classify any disease or symptoms of a disease as a state of insanity that no one should know about.

And psychological diseases are many and widespread and more in the number of industrial cities crowded and capitalized from the suburbs and quiet places and mental diseases many reasons where the relations affect since childhood between parents and between the child and parents and brothers in the surroundings of the small family or in the surroundings of other relatives in the family as The school also has a role (family and social relations in general), in addition to community events, customs, traditions and religious values, and the causes of mental illness are summarized to three reasons: vital, psychological and environmental causes individually, bilaterally or interactively.

There are many classifications of mental diseases, the most important of which is the classification, which is based on the study of the causes and the nature of the pathological change that it creates, in which the mental diseases are divided into four main types under which other subtypes are included in the Table (1).

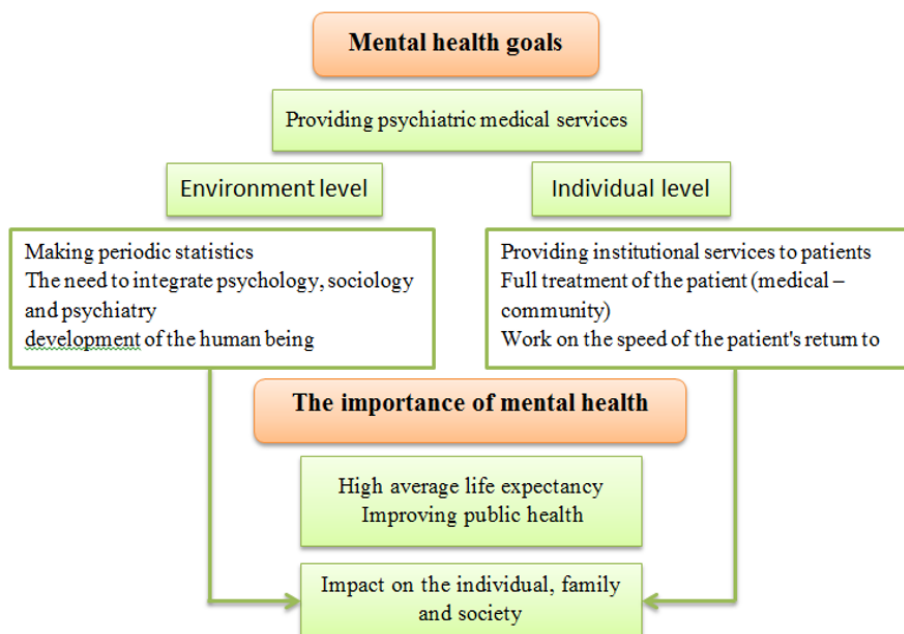


Chart (1) Goals and importance of mental health. (1) and (3) (Designed by researcher)

Types of mental illnesses			
Personal disorders	Physical mental disorders	Neurological diseases (neurosis)	Mental illness (psychosis)
Organic disorders	Disorders of the organs of the body Nervous, periodic, reproductive, glands... And so on	Concern	Schizophrenia
Delay and mental impairment		Depression	Mania
Addiction		Histria	Paranoia
Sexual deviation		Disintegration	
Marriage, youth and old age problems		Compulsive wasass	
Disabled problems			

Table (1) Some types of psychiatric diseases (2) (Designed by researcher)

The diagnosis of mental illness is an important process where it is the way to identify the origin, nature and type of disease, through which the appropriate treatment method is determined, which is a complex process resulting from a thorough examination process that includes a thorough examination organized for the patient and includes a local physical medical examination or devices for the organs of the body and Psychological examination, which is carried out in many ways, including interviewing, observation and case study, in addition to the use of tests and measurements, the three processes of examination, diagnosis and treatment are successive continuous processes.

In order to achieve psychotherapy and access to healing, it is necessary to create a spatial environment (psychiatric hospital - psychiatric centers) that provides security, understanding and acceptance of the patient and behavior as well as providing doctors and staff a safe atmosphere to help do the work and hence the psychological therapeutic facility can be defined as The facility provides all diagnostic, therapeutic, rehabilitative and preventive mental health care services for psychiatric patients.

Hospitals and medical and psychological treatment centers are considered one of the most complex public buildings and the most expensive and the society needs them most because they must meet the different functional needs of diagnosis, treatment and prevention while achieving human needs and providing security and safety to patients and For doctors, nurses and administrators ... And others.

The concept of designing and building hospitals and psychotherapy centers has changed to suit the developments of era. The psychiatric hospital is no longer a building isolated from the environment and filled with patients who were separated as a result of the

building's isolation from their external reality, but rather it became a building open to the environment and connected to it and Interact with it internally and externally designed in a manner that meets all functional and human needs in aesthetic frameworks studied and contributes to helping the patient to overcome the difficulties of the disease and then speed and effectiveness of treatment so that it returns to the community train quickly.

In fact, when initiating the interior design of the psychiatric hospital, a thorough study of a range of factors affecting the design style and details of the design should be carried out:

- Study the environmental, geographical and climatic factors of the area where the building is built.
- Studying the cultural, social and economic factors of the region's population.
- Study the impact of the environment, heritages, customs, traditions and religion.
- An overview of mental illnesses in general and the most common diseases in the region.
- Study the problems of psychotherapy (especially long-term treatment) and the method of treating patients and managing their lives in the hospital (where there are some psychiatric conditions that may continue to be treated for years).
- Classification of patients for groups according to the type of disease, severity, methods of treatment and duration and place of treatment.

1.3.2. The void elements of the psychiatric hospital:

The choice of the appropriate location for the building represents the first pillar of access to a good and correct design that can achieve and function, providing the right environment for hospitalization and medical work requires the selection of a well-thought-out lo-

cation in many respects must be relatively isolated from external noise and acoustic and visual pollution and antenna (Away from airports, factories, trains and commercial centers), as it must be connected and close to transportation routes for easy transportation, and must provide privacy, safety and safety for patients and workers, and the reception area is the central area through which easy access To all the spaces of the hospital and

therefore must be clear and distinctive design and can reach the two main departments of the hospital, namely the department of treatment services and the department of nursing units and falls under them all the subspaces that make up the parts of the hospital, and shows the plan (3) the relationships between the elements of the vacuum To the hospital.

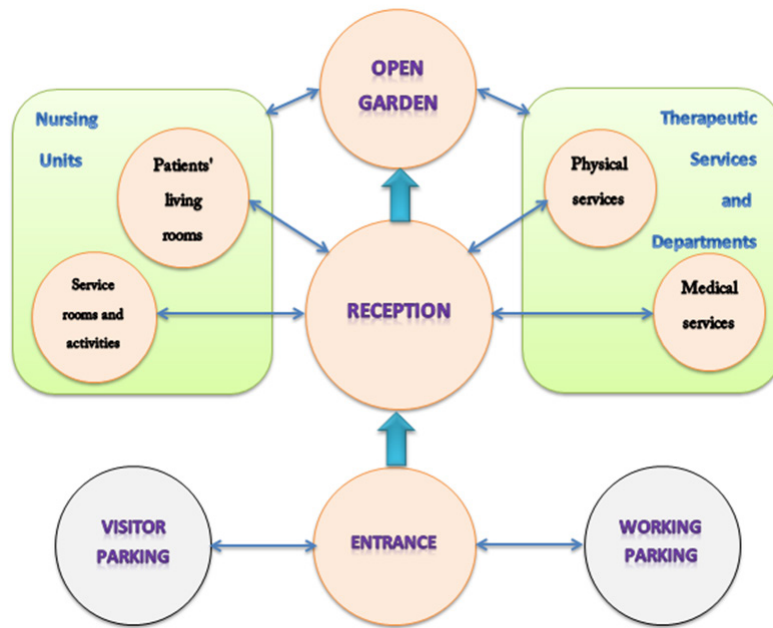


Chart (2) the void elements of the psychiatric hospital. (Designed by researcher)

1.3.3 Functional components of psychiatric hospital vacuums:

Each space of the psychiatric hospital has a specific function with specifications and criteria and the hospital is divided into two main sections, namely the department of therapeutic services and the department of nursing units must reach both from the reception area and the following table shows the vacuum components and standards and specifications that must be Available in order to achieve the desired job or functions as it shows the different relationships between functions for spaces:

Vacuum	Ingredients	Standards specifications	and Relations
<b>The entrance</b>	Entry and exit doors - signs	Clear and easy to reach from the outside on foot/movement of the disabled/cars	Direct relationship with reception/parking/external entrance
<b>Reception hall</b>	Counter	Clear and distinctive design/sufficient depending on the number of beds	Strong direct relationship with the medical service area (diagnostic clinic) portal/all spaces
	Patient registration and admission room	Office/place to graduate files/patient interviews	
	Waiting areas +Bathrooms	A character that attracts the patient and removes the initial monotony of the place/single part and the other in the form of salons	
	A place to sell fast drinks	Optional and quality increases	

			the familiarity and inability between the patient and the place of treatment	parking lots	
<b>Motion paths</b>	Horizontal		Clear/avoid long, wide-bend/wide corridor for two people/use of illuminated signage	Clear network relationships to easily lead to all the spaces	Easy and quick access to any vacuum
	Vertical		The presence of the stairs in a suitable and clear place/the absence of a stair well	Direct connection to all floors	
<b>Nursing units</b>	Patients' rooms	Individual/bilateral + bathroom in the room	Interior design: Simple home-like comfort and privacy under surveillance and safety requirements for dangerous and violent situations/providing an isolation room for every 20 beds Furniture: bed, cupboard, writing table and seat/sofa open bed in some rooms for facilities/TV	A little isolated from reception and medical services. In direct contact with the outer garden	Each department has its own reception, which is in direct contact with the general reception and the therapeutic services department.
		Wards + bathroom	4:10 beds with separated curtains or vertical stubs for privacy/have a large bathroom attached		
<b>Vacuum</b>	<b>Ingredients</b>		<b>Standards and specifications</b>	<b>Relations</b>	
<b>Nursing units</b>	Various activity rooms and services	Living Room	Designed in a home-like way to achieve an atmosphere of familiarity, containment and security/contains a comfortable sofa by family/TV/radio or music player/magazines	In direct contact with rooms and wards.	Each department has its own reception, which is in direct contact with the general reception and the therapeutic services department.
		Dining Hall	Accommodates all patients/traffic corridors/tables, benches and beverage counters with safe design for dangerous and violent situations	In indirect relationship with the rooms, the wards and the dining hall.	
		Interview & meeting room	Used to meet patients with their parents	They can be merged.	
		Therapeutic meeting room	From 10:12 people/comfortable seats/used for treatment and rehabilitation		
		Nursing station	Central location for easy follow-up and access to all parts of the suite	In direct contact with the rooms.	
		Nursing station management	Room to follow up the patient's residence/nursing station/record and store the patient's medical reports		
		Doctor's room + doctor's room	To follow up on the performance of the nursing station/responsible for the		

		entire ward		
		Services: Laundry/Cleaner/Bathroom/Stores	Taking into account health and safety requirements in sanitary buildings	
<b>Therapeutic services and services</b>	Medical treatment services	treatment With electric shocks	Reception/waiting/equipped treatment rooms/dormitory/doctors and nursing	Isolated
		Outpatient clinic	Detection and diagnosis of the disease for the frequent/simple design reception/wait/nursing station/screening rooms/treatment rooms/bathrooms/stores/cleaner	It could have a special exterior entrance from the garden.
		Pharmacy	Equipment according to psychiatric requirements and number of beds	Indirect relationship with the public reception
		X-rays Labs		
<b>Vacuum</b>	<b>Ingredients</b>	<b>Standards specifications</b>	<b>and</b>	<b>Relations</b>
<b>Services and The medical departments</b>	Department of Physical Rehabilitation	Special reception	In addition, the government's commitment to the "right to self-government" is a key factor in the country's economic and social stake.	An isolated relationship from the public reception
		Organic physical therapy	Equipment according to the general requirements of each activity and according to the medical and psychological requirements And the number of beds.	Presence is required
		Massage		
		Physical exercises		
		Therapeutic swimming pool		
		Thermal enforcement		
		Ultrasound		
	Mud baths / wax / sulfur water			
Department of Recreational Therapeutic Services	Recreational treatment Rooms for hobbies/drawing/music	Equipment according to the general requirements of each activity and according to the medical and psychological requirements And the number of beds/proper interior design contributes to the speed of healing	An isolated relationship from the public reception	
	Bathrooms and stores	Tool keeper/cleaner		

Table (2) The functional components of psychiatric hospital spaces, their requirements and the relations between them (6) and (7) (Designed by researcher)

## 2. Architectural Psychology (Man and Space)

### 2.1. Environmental Psychology:

It is a science that studies the interactive relationship between man and the environment (in general) it is interested in studying all the mutual effects between the elements and details of the physical environment (shape, color, light, climate and plant.... It also examines the impact of environmental factors on mental health and production efficiency, which helps to provide solutions to psychological and social problems resulting from the physical and social environment conditions. (8)

There are many theories based on the principles of environmental psychology, whose goal is to preserve human health:

- The theory of excitement (environment is a positive or negative catalyst).
- Environment and man are one entity.
- The environment is controlled by man.
- Continuous interaction between the environment and man.

But the researchers in this field believe that these theories do not work individually but work together and that to reach a correct environment, especially in the architecture and internal spaces where the human lives of more than 80% of his life, and when looking at the psychiatric hospital as an internal environment we find that it must be positively stimulating and avaful Constantly bug with the human and meet his needs until they become one entity. (9) and (10)

### 2.2. Architectural Psychology:

It is one of the branches of environmental psychology and it is the science interested in studying the impact of the built environment and architecture and the impact of internal and external voids on people who use space, in terms of knowledge, social and emotional, in order to reach the architectural design of the correct and healthy buildings that support the user in terms of Physical, social and psychological.

Architectural psychology is based on the study of the relationship between man and space. There is a network of complex reciprocal relations between man and the internal vacuum. The bilateral mutual interaction between them is continuous. The vacuum with all elements and components (material, social and psychological) affects the person and adds to him and affects the human being. On the void and adds to it and pigmentation with an identity, and from here we come to the void with a personal identity, as a result of this because architectural psychology deals with the psy-

chological processes of interaction between man and all the vocabulary of the internal void such as cognition, thinking, behavior and requirements of living.

The vacuum derives its qualities from its elements and relations between them and the way the way the human mind perceives it and the psychological composition of users, especially in the spaces of treatment and residence in the psychiatric hospital and from those reciprocal relationships create a dialogue between the void and the human in this case the language of dialogue must be clear and understandable In order to be able to deal with the patient with the vacuum and be able to reach the stage of healing, the internal spaces of the hospital must achieve a set of concepts, which represent the vocabulary of the language of continuous dialogue complex between them and the user and that in order to reach the patient for the stage of healing, which is the main purpose. (Chart 3) explains vocabulary of the language of mutual dialogue and the way in which the human being perceives it to the void of personal identity. (14)

### 2.3. Cognitive process:

It is an attempt to understand the world around us by interpreting the information coming from the senses to the human brain, and understanding here includes interpretation, coding, analysis, storage and response. (17) It is a means of communication and a link between vacuum and user (patient) to reach the creation of language of space between them patient's sense of emptiness is the result of the process of perception that deals with the data of the environment surrounding all its elements and then affects his mind and the process of absorption of the vacuum or what is known By understanding the vacuum that leads to the mutual effect between patient and vacuum using the language of the previous dialogue between them, and the process of perception and assimilation is a complex dual process, a complex mental process, physical and emotional, is carried out through the five senses of man (awareness of sensory stimuli), each sense is responsible for the perception and absorption of part of the vacuum The eye is responsible for the sense the visual sense, which performs the process of visual perception and is responsible for the partial perception of the form and then the perception of the forms and relationships between them and thus the total perception of the shape of the void and its forms and relationships and

in the same way is responsible for the perception of colors and light other elements such as water and

plants .... And others. The following chart (4) illustrates the cognitive process through the senses, which are key to the treatment of mental illness. (18)

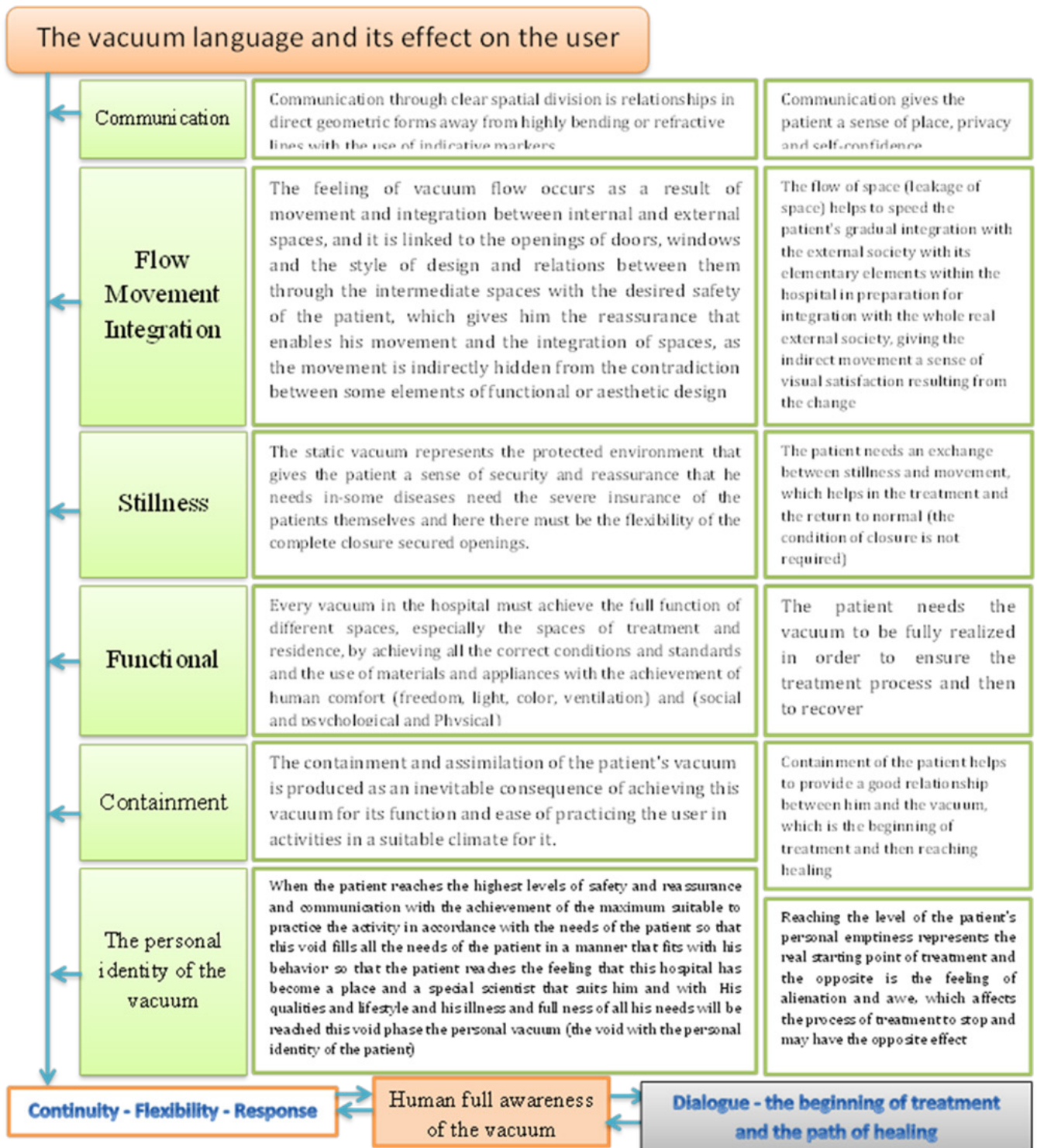


Chart (3) Concepts and vocabulary of the language of dialogue between the patient and the vacuum  
 (Designed by researcher)



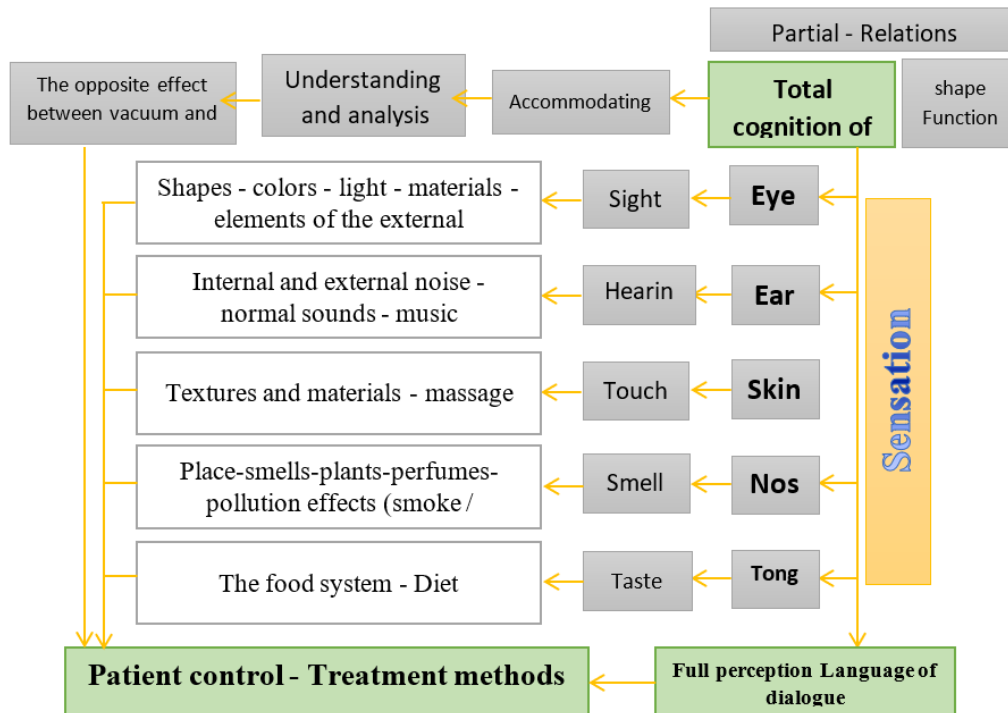


Chart (4) The five senses perception process (Designed by researcher)

Through the study of the full of these physical and sensory perceptions and their different effects on the patient, the designer is able to reach the correct internal design, which helps in the process of treatment (the study is limited to research on the perceptions of sight, hearing and touch) the resident psychiatric patient for treatment within the hospital needs me The personal space that the right individual needs to be fully aware and perform full functions (which must be provided to ensure the patient's desire to stay in place and treatment is an important step on the path of psychotherapy, and there are types of diseases need to reduce the spaces and freedoms of the patients at the beginning of treatment and With improvement allows to adjust the personal space for the better ) with the right security and safety for each disease while providing the required privacy and flexibility.

The process of perception takes place in certain steps until the mental and sensory perception is fully realized, the presence of stimuli (sensations) which make up the world of perceptions and senses, which are the means of man in the perception of these stimuli the presence of the central spinal brain nervous system (brain Brian), which in turn transmits the perceptatic to a meaningful realization of the existence of a record of accumulated experiences in the human which allows the nervous system to transmit the senses and classify them based on these experiences to perceptions, and

without this record of experiences the nervous system cannot give meaning to the senses to become aware, the natural human (sui) realizes from The surrounding environment around it is what a person with a mental disorder or a person with mental disorder and vice versa, i.e. what a person who is mentally disturbed or mentally disturbed is not aware of, for example, the schizophrenic patient (or mental disorder) smells that do not exist and hears voices that do not exist. It has (auditory and visual hallucinations) as well as visual stimuli that do not already exist (visual hallucinations).

### 2.3.1. Study of visual perceptions effects on the mental patient:

Visual perception occurs by the fall of light on objects, the process of vision of the eye occurs and helps in the path of visual perception the movement of the head to cover a wider field of visual vision and the movement of the body and the quality and intensity of the lighting used, and includes visual perceptions all that the human sees inside the void and varies between Shapes, sizes, colors, ores and other elements such as plant and water, visual perception occurs completely and then the details are discovered successively in fact the patient realizes the void and affects him completely and when the period of survival increases in emptiness and looking and scrutinizing the details occurs full visual perception and Full effect.

Visual perceptions		The effect
<b>Lines</b>	Is the first determinant of the perception of the identification of shapes and sizes (partial perception) by separating the areas and shapes	The patient begins to partially perceive the vacuum of lines and hence the importance of their psychological effects, horizontal lines always suggest stability, calmness and formality while vertical lines give a sense of stability and slant give a sense of movement and curved always give a sense of softness and Softness, continuity and interruption suggest vitality and interaction. (18) relation between spaces must be clear to the patient while balancing the use of lines for comfort, movement and calm.
<b>Shape</b>	These are the basic components of the visual architectural composition and are a tool for organizing the design content of the emptiness, it restricts the boundaries of space and separation of blocks and the inventory of color areas and materials, leading to the full realization of shapes and volumes and their use and function in space.	For forms affecting the mind and reactions and the psychological and mental state of the patient, forms with straight lines and existing angles give a sense of security, strength, discipline and confidence while the triangles are considered DNA forms linked to the upper movement, and determines the direction of the triangle and the angles of the effects The psychology that occurs, the existing triangle suggests stability and formality, while the equal ribs and legs suggest a pivotal movement, while it is not preferable to use the inverted triangle because it suggests anxiety and tension, it is a form that suggests danger, while it is preferable to use circles because they suggest eternity and immortality ( The sun and the orbits of the planets) should also be used with caution, which include: geometric shapes, natural or abstract forms and reference







Image (1) The use of straight lines with curved in a way that gives a sense of design (Gundern Mental Health Hospital).



Image (2) Use of rectangular shape in the design of the residence room for the patient



		<p>forms of heritage are overlapping forms of meanings and insinuations and may cause confusion in the therapeutic process, simplicity, clarity and formal directness of The most important features of the appropriate vacuum for the mental patient.</p>	<p>Image (3) Use the triangular shape in the appropriate color in the nursing station between rooms</p>
<p>Light</p>	<p>It is the basic element in the process of visual perception as it emits the electromagnetic radiation necessary for vision and perception and without it cannot be completed and cannot be carried out activity in the vacuum, and maintains the sight and human comfort in emptiness and achieving public safety.</p> <p>Shadow areas are produced as a result of the absence of light, interference and intersections resulting from the intensity of light, which help to successfully complete the visual perception process where the shadow shows shapes, blocks, colors and materials.</p>	<p>The psychological effects of light are due to the intensity of light, its strength, its color, the nature of activity, the quality and nature of the individuals and the nature of the vacuum, in addition to the method of distribution and the quality of the lighting units used, and the light affects the pineal gland that secretes the hormone melatonin, which is inversely related to light, the less The higher the hormone and the more the body, the more it is, the more depressed and depressed the body is.</p> <p>Natural lighting is the source of the sun and varies depending on the geographical location and time, and it is directly from the openings or indirectly that pass through the glass and curtains or reflected from the external facades and floors, and helps to flow the circulation of blood circulation and adjust the biological clock of the human (succession of lighting between night and day) and her psychotic signs are positive for the patients and on the treatment process.</p> <p>Industrial lighting with its various sources has negative psychological and physical effects on patients when they are not done in a thoughtful way or when staying there for long periods and color light also has effects and is therefore considered one of the methods of assistance in treatment (Table 5)The presence of shadows helps to improve the psychological state to complete the process of visual perceptual indirectly, and can negatively affect fear and dread on patients suffering from hysteria diseases, fear and schizophrenia, and therefore the shadows should be studied in the vacuum, especially at night with industrial lighting (presence Furniture pieces have different composition, geometric or organic treadmill</p>	 <p>Image (4) Combining natural lighting with the use of appropriate shapes and colors to provide the right atmosphere for the patient.</p>  <p>Image (5) The effect of lighting and shadows on the accommodation vacuum for the patient</p> 

		<p>formations). (19)</p> <p>Light therapy (uv radiation) affects brain chemicals associated with mood and sleep, helping to treat sleep disorders, depression and dementia.</p>	 <p>Image (6) Industrial integration of the external environment with indirect light in the screening and x-ray rooms to reduce patient tension.</p>
<p><b>Color</b></p>	<p>It is a sensory perception that has symbolic, emotional, physical and psychological effects and is one of the most consistent visual languages, receiving visual stimulation and processing and reactive response representing the components of color work, balance, rhythm and movement of color that represent elements of the visual-chromatic language perceptions.</p>	<p>The effects emotional/psychological/physical/symbolic of colors lead to positive or negative reactions, and this feeling must be simulated through design so that the colors commensurate with each vacuum in the psychiatric hospital are chosen from the functional side according to the function of each vacuum and the characteristics of the color and the resulting psychological and physical reactions affecting the patient and the treatment process described in Table 3.</p> <p>It is also necessary to study the psychology of colors and the method of psychotherapy in color and art and study various psychiatric diseases (symptoms/treatment methods) in order to determine the appropriate colors for use for each disease and described examples in (Table 4). (20) and (21)</p>	 <p>Image (7) Use cold and neutral colors to help the patient calm down, relax and sleep</p>
<p><b>Water</b></p>	<p>Water is the secret of life and a source of safety and stability (since ancient times man settles next to water).</p>	<p>Fixed water (static) represents calm, stability and safety and gives a vertical extension and continuity of space (reflecting like an inverted mirror).</p> <p>Running water (moving) is a source of movement and activity and reduces the patient's sense of boredom, monotony and sadness and raises morale due to the feeling of continuous and renewed life.</p> <p>The general feeling of peace, reassurance and pleasure resulting from the feeling of water beauty as well as the hydration and</p>	



		purification of the air.	Image (8) The use of water in the inner courtyard to create an area that represents the external environment inside the hospital for more safety and control of the disease.
plant	The plant inside the vacuum is a microcosm of the natural environment in its natural form or simulated by photographs.	Gives the patient a sense of comfort and calm with the availability of pure air free of pollutants, which is known as the healthy environmental impact of the plant, which helps to relax and reduce pressures and give a sense of spirit and life and thus a hidden sense of joy, as well as visual importance in the temporal perception of what happens to him A quarterly change.	 <p>Image (9) The use of the plant inside the vacuum gives the patient a sense of calm and relaxation.</p>
Outdoor environment (open spaces)	<p>The interior spaces are integrated with the external environment, including green areas and sky, and may reach an area of up to 75% of the total area of the psychiatric hospital.</p> <p>The mutual and interactive relationship between the internal and external vacuum creates a state of visual harmony and reduces closure and helps to integrate, it is an important factor in the therapeutic process.</p>	<p>Open green spaces improve physical health because it reduces muscle blood pressure because it reduces pollution, dust and temperatures and increases shading.</p> <p>It also works to improve the mental health of patients because it provides calm and rest and reduces depression, fear, anger and stress, helps patients meditate, think and concentrate, increase self-esteem and reduce stress and thus decrease the rates of violence, vandalism and crime.</p> <p>Providing security, privacy and integration between open and internal external spaces</p> <p>(With appropriate monitoring for each patient according to illness), the patient is granted communication and out of isolation and gradual integration into society. (21)</p>	 <p>Photos (10) Provide an open external environment to improve physical and mental health.</p>

Table (3) Effects of visual perceptions on the mental patient (Designed by researcher)

<b>Mental illness</b>	<b>suitable Colors for use in medical accommodation</b>	<b>Reason for use</b>
<b>Memory impairment</b>	Yellow	A brain-thinking cell tonic and mental disability.
<b>Insomnia - Anxiety</b>	Blue + white	Reduces insomnia and helps to flush out whispers and overcome uncertainty.
<b>Depression</b>	Predominant blue + orange (in small proportions)	Blue: Expels authoritarian ideas and reduces pessimism. Orange: Stimulates movement and gives a sense of fun and anti-frustration and depression and facilitates digestion.
<b>Nervous agitation - violence</b>	Predominantly light blue + purple	Light Blue: Calming over-the-hand, it is a cool and calm color that calms excess nervousness, treats high blood pressure, reduces stress and increases reassurance. Violet: General sedative for neurological and psychological diseases.
<b>The tendency to hurt oneself or others.</b>	Indigo blue + green	Indigo Blue: Cures mental disorders. Green: Nature's calm color is a passion for mercy, complementing the red color (blood) that helps the patient to control his actions.
<b>Acute or chronic schizophrenia - Paranoia</b>	Predominant green + orange + brown (in small proportions)	Green: Helps to regulate the soul and body and control emotions and because it is the color of nature helps the patient to return to normal and get rid of the disease. Orange: It excites the patient and helps strengthen social relationships, which helps him to get out of the illusion and fantasies and engage with the community. Brown (in small proportions) gives a sense of strength to the patient stemming from his self-reliance and thus gives him a sense of security.
<b>Hysteria</b>	Mostly green + (orange + blue) in small proportions	Green: The color of nature helps the patient to return to normal and calm blue: a cool and calm color reduces the pulse rate and body temperature helps the patient to get out of cases of increased emotional pressure and helps him to be a balanced person. Orange: Urges the patient to feel fun and warm and get rid of the symptoms of the disease.
<b>The fear</b>	White + blue	White: A color that suggests calm, purity and clarity (the patient sees everything and no ambiguity) and gives the patient the sense of safety that he needs to overcome his fears. Blue: A calm color helps the patient to relax and rest and helps him to expel doubt and whispers.

Table (4) Some examples of mental illnesses and appropriate colors and their psychological effects on patients (2), (20), (22) and (23) (Designed by researcher)





Color		The area in which it is used	
Warm colors: orange, red, orange, white, beige		Activity area	Reception area - living rooms - dining halls - physiotherapy suites - exercise areas
			
Image (11) The use of warm colors in reception areas and waiting areas more vitality to the vacuum and white gives stability and safety.		Image (12) The use of a greater percentage of colors in the vacuum and eating and the use of yellow in the vacuum of exercise gives the patient vitality, activity and joy.	
Cool colors: green + blue + white - beige		A zone of calm and stability	Rooms and suites for patients - screening, diagnosis and treatment rooms
			
Image (13) Use green with white in the screening and radiology rooms to give the patient a proper atmosphere.		Image (14) Use cold colors with white and beige in the living rooms to give the patient stability, comfort and safety.	

Table (5) appropriate colors for use in different spaces in the hospital and its psychological effects on patients (Designed by researcher)

### 2.3.2. Studying the effects of auditory perceptions on the mental patient:

The patient completes the awareness of the mental image of the vacuum through sounds and the psychiatric hospital building is considered a complex spaces that need to make studies and sound simulations of architectural and interior design, it contains a large number of different activities that must be observed coordination between them vocally, and includes sound By emptying the sounds resulting from the practice of activities and their follow-up and intensity and dialogue between people and the voices of patients (some pathological conditions are accompanied by screaming, shouting or crying or imagining talking to people....) and the sounds of all the devices contained in the vacuum (medical devices - telephones - air con-

ditioners - fans.....) and sounds Service areas that are part of the internal noise as well as the external light coming from outside the building.

In order to reach the correct acoustic perception of the patient, the vacuum must be achieved by:

- Isolating noise of both types because of its damage it affects the nervous system and raises blood pressure and disorders of the organs of the body and increases stress, anxiety and depression.
- External noise is isolated by choosing the right location for the building (in relatively quiet areas away from dense noise areas such as train stations and airports) with the use of plants and trees, while internal noise is isolated by vacuum insulation in the sense of dividing spaces according to what It results from internal noise (for example, accommodation spaces

should not be close to directly or indirectly from the hospital reception space) and also by using acoustic insulation cladding in all interior design and furniture elements.

- The sound studies of all the spaces are separate and continuous and include the study of different types of sounds and the sound rays of them and the sand and the temporal until the vacuum becomes achieved for acoustic comfort.

- Study of the formations, materials and contact support used from the acoustic point of view (reflections - absorption - dispersion) and their different psychological effects on patients described in table (6). (24)  
 Music: Is a kind of fine arts that improve the mood, physical and psychological of the patient, the use of the appropriate music according to each disease increases the moral state because of its simple and accurate effects but it is very important and that can affect the therapeutic process negatively or positive-

ly, mouth The music reception in the brain interferes with the centers of emotion and here the language can be treated so that it is useful in cases of dementia or provokes memories and helps in diseases of memory impairment.

Music helps to improve many psychological conditions such as depression, dementia, weakness and memory disorder, schizophrenia, autism, addiction and insomnia because it helps to calm down, focus and express feelings (some conditions can not express themselves using words and here can become Music is a language that expresses its ideas, enhances memory, improves mood, improves social communication, and music therapy is an interactive treatment between the patient, which must have the desire and willingness to do so and between music in the form of listening, playing and singing activities practiced by the patient. In the presence of a specialist. (25), (26) and (27)

Elements of interior design	The kind.	The effect.
Walls	Increased formations - rough contact - dispersed materials	It has a negative psychological effect from the internal noise raising.
	Lack of formations - soft contact - reflective materials	
	Use of sound absorbents	
Floors	Use polished floors	It has a negative psychological effect from the internal noise raising.
	Use of sound absorbent floors (e.g. cork)	It has a psychological effect with the comfort of reducing the sound of human movement that causes vibrations.
Ceiling	Flat, sound-reflective or polished ceilings	It has a negative psychological effect from the internal noise raising.
	Sound-absorbing flat ceilings	It is the right quality for use in the psychiatric hospital because of its good psychological impact resulting from sound control and noise reduction.
	Oblique or vaulted ceilings	Partially used with flat ceilings.
Furniture	Distribution of furniture helps distract the sound	Helps reduce noise and calm, making an impact on the mental well-being of the patient.
	Sound absorbent materials used in furniture.	

Table (6) audio-appropriate configurations for use in different spaces in the hospital and its psychological effects on patients (Designed by researcher)

2.3.3. Study the effects of tactile perceptions on the mental patient:

Texture: One element of formation and touch is the feeling of these elements directly or the visual experience of the materials and is a two-dimensional representation and it is difficult to separate the materi-

als and contact them and light and color where light plays an important role without it will not show areas of light and shadow that show the texture of the materials Different and employed of different types to suit the vacuum, patients and activity as it must vary in the use of different contacts to achieve the contrast




of the void, and the texture is present in all the void inside and out on the patient and the different contact and its effects and shows the table (7) different contact and Its psychological effects on patients.

Raw materials: The world of interior design materials and furniture is endless and is an essential element in the formation integrated the process of general perception of space and visual and tactile perception may precede other elements such as color and light, and the modern materials contribute to the creation of spaces more suitable for the activities of the psychiatric hospital and the nature of the Satisfactory nanotechnologies contributed to the creation of clean spaces through self-cleaning paints and antifungal glass and bacteria, and smart and digital materials contributed to more flexibility and control of the vac-


uum in terms of sound, color and light in proportion to the nature of individual patients cases Their diseases, in general, must comply with the international specifications for the use of materials in hospitals.

- The use of natural materials (such as wood, stone and glass) that give the patient a sense of comfort and serenity.
- The use of sound absorbent materials to provide acoustic comfort in the vacuum to provide psychological comfort and calm, which contributes to the treatment process.
- The use of unstudied manufactured materials may lead to physical or physical damage from their role that negatively affects the patient's psyche and the treatment process.

Texture Type		Psychological effects	Appropriate Vacuum
Class	Pretty	It gives the patient a sense of calm and relaxation, it reduces detail and shadows, suggests dilation, reduces stress and helps to relax.	Accommodation and treatment vacuum
	Rough	It suggests movement and increases with shadows.	Motor vacuum such as physical therapy vacuum or exercise
Appearance	Regular	Gives a sense of formality and regularity.	Reception space
	Irregular	Gives a sense of randomness and movement	Can be used very carefully in exercise spaces
Type	Real	Contact that the patient can feel for her spatial proximity gives him a sense of desire to explore and helps to realize the mind and remember and inspire <u>srightness</u> and movement	Part of the living spaces and public spaces
	Not Real	Unreal contact images or images of landscapes or places	Public spaces such as reception space and nursing stations
	Natural	It's the texture of nature, like the texture of the skin and the glass, and it benefits the patient in the sense that he lives in a natural atmosphere.	Taking into account the use according to the type of vacuum, activity and type of disease
	Industrial	From natural-like materials and sometimes give a sense of uneasiness and logical	



Images (15) The calmness and breadth resulting from the use of soft contact with the space of



residence  
Photo (16)  
variety of contact between soft, rough, natural and false in the hospital reception space

Table (7) various contact and its psychological effects on patients (Designed by researcher)

• **The results:**

1. Maintaining public physical and psychological health has a direct impact on the individual and society.
2. The internal design of psychological hospitals by applying the foundations of architectural psychology in the study of human beings, emptiness and different perceptions based on human and senses leads to obtaining internal spaces suitable for the psychological patient to help him stay in the hospital and treatment to the stage of healing.

• **Recommendations**

1. The research recommends opening the field towards the orientation of more research that studies how to take advantage of materials and modern technologies (nano- smart, digital, interactive ...) and apply their use within the different spaces of the psychiatric hospital to obtain the desired design flexibility to suit the vacuum with The patient and the patient, realizing the foundations of architectural psychology.
2. The research recommends that the different sectors of the country direct more research and construction efforts to the mental health sector because of its great importance to the individual and society.
3. The research recommends that a psychiatric therapeutic institution adopt the idea of researching the application of design using the foundations of architectural psychology (as an experimental design sample) to improve the therapeutic voids of mental illness.

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