



Implementation of Hospital Inpatient Room Design that supports the Healing Process

Rosdiana Wulandari^{1*}, Asep Yudi Permana²

¹Association of Indonesian Interior Designers, Jakarta, Indonesia

²Master of Architecture, Faculty of Technical and Vocational Education, Universitas Pendidikan Indonesia, Bandung, Indonesia

*Correspondence: E-mail: dinahartadi@gmail.com

ABSTRACT

Hospitals as health facilities need to be supported in all aspects. The healing factors obtained from health services do not stand alone but must be supported by physical health facilities to make the healing process more comprehensive. Many rules must be applied in hospitals and many aspects must be taken into account when designing a hospital, so designers must understand how to design according to standard rules and also aspects of user needs because healing is carried out through the physical and psychological aspects of the patient to encourage a more effective healing process. With the various facilities in hospitals, the role of inpatient rooms is often not a priority compared to service-based health facilities such as the emergency room, operating room, ICU room, and hemodialysis room which are important priorities. Even though the healing process takes the longest time in the inpatient room. It is felt that the current arrangement of inpatient rooms does not support the healing process. Therefore, this paper aims to guide designing inpatient rooms that truly meet the behavioral needs of residents so that it is hoped to create an inpatient room that encourages healing (healing environment). The method applied is descriptive qualitative by studying it based on the theory of architectural behavior & architectural psychology, namely a Healing Environment that is suitable for hospitals through analysis of behavior that produces a need for space elements. Observe the condition of the inpatient room and the expected behavior of the occupants. The results of the analysis of inpatient rooms will be in the form of guidelines for designing inpatient rooms comprehensively. How to choose colors, choose finishing materials, furniture, and other necessary elements. The author hopes that this article can be used by all parties who will design, renovate, or carry out further research regarding inpatient room design. For designers, hospital owners, and hospital management throughout Indonesia, so whatever hospital class, location, government-owned, private, or foundation can apply hospital room design well.

ARTICLE INFO

Article History:

Submitted/Received 3 Agsts 2022

First Revised 20 November 2022

Accepted 4 July 2023

First Available online 1 December 2023

Publication Date 1 December 2023

Keywords:

Inpatient room,

Healing Environment,

Interior Design.

1. INTRODUCTION

A hospital (RS) is a health service place that has complex facilities with all kinds of problems. Hospital design requires knowledge of regulatory standards and specific requirements for each area that must be followed to ensure the healing process for patients. Hospital facilities related to treatment service rooms are a top priority, such as the emergency room, ICU room, ICU/HCU, operating room, hemodialysis room, chemotherapy room, and medical procedure room require full attention. Meanwhile, the inpatient rooms occupied by patients after undergoing procedures are often neglected and do not meet the user's expectations, which can slow down the healing process. The healing process is carried out medically (physically) and supported psychologically/psychologically (psychologically). Therefore, interior spatial planning (Arofah, et.al., 2019)(Bawono, 2019) plays a major role in meeting psychological needs that support the healing process (Ceylan, et.al., 2008).

The current condition of inpatient rooms does not meet user expectations. Minimal facilities, application of colors (Ghassani, et.al., 2019)(Maulana, 2015) that are too flashy or even look pale, inappropriate choice of flooring, wall and ceiling materials, and furniture that is not appropriate in terms of size, function, and placement. Not to mention the quality of cleanliness, safety, and user comfort which are often overlooked (McCoy and Evans, 2002). The inpatient room is the place where the patient spends the longest time undergoing the healing process. In some cases, it can even take more than a week, a month, or even more depending on the patient's condition. In conditions where there is an uncomfortable atmosphere, physical treatment can be slower. The importance of discussing this issue will change the inpatient room into a comfortable environment and accommodate the needs of its users, especially patients in the healing process. Until now, existing studies have emphasized the requirements and definitions that must be taken into account, as well as technical standards (Nurrahman et al., 2022)(Nurrahman et al., 2023), but not many have discussed in detail the overall material universally in space (Shapiro, 2015)(Shibata and Suzuki, 2004) and examples of designs that can be applied, especially in Indonesia. Because when designing hospitals there are different characteristics (C. S. Permana et al., 2020). So translating the needs into the context of hospitals in Indonesia is very important (Ghasempourabadi & Hassanzadeh, 2021).

1.1 Patient Focus

The current hospital design is based on the patient's need to receive comprehensive health services during treatment, prevention, and care after recovery. The hospital will look at the patient's needs in determining the design, especially interior design that can create a comfortable and calming feeling. In the course of the COVID-19 pandemic, the patient-focus aspect has become more user-focused (Permana et al., 2020)(Permana et al., 2022). Because what needs to be protected is not only patients but also doctors, paramedics, hospital workers, and visitors so that they do not become infected and can work comfortably and effectively (Permana et al., 2021)(Setiawan et al., 2021).

Patient focus in inpatient rooms is directed at ensuring patient comfort in resting to encourage the healing process by creating an environment that encourages the healing process (healing environment) and other users in supporting patients to recover (Alhamdani & Sari, 2019).

1.2 Evidence-Based Design (Design Analysis Based on Field Findings)

Success in designing a hospital is determined by the characteristics of the area and how the design responds to user needs. Socio-economic conditions, and behavior related to culture, age, gender, and even location greatly influence needs.

When designing an inpatient room, patient and user preferences need to be considered as what needs to be accommodated to support the healing process.

1.3 Hospital with an Environmentally Friendly Concept (Green Hospital)

A hospital is a building that contains various systems that continue to operate 24 hours a day and continuously so that efficiency in all aspects is very necessary to make efficient use of resources and also support the health of its residents (Green & Healthy Hospital).

The three concepts above intersect in terms of creating an environment that supports healing when designing a hospital. Likewise, in designing inpatient rooms (Rap), the concept of a healing environment from the intersection of the concepts above becomes important.

The inpatient room is a medical environment that has an important role in the patient's healing process. Patients need the best possible adaptation to this inpatient room because this room will be the room that will be occupied the longest while the patient is undergoing the recovery process. The patient's failure to adapt can cause psychological stress and can slow down the healing process. The effects of a physical environment greatly influence healing outcomes which have a positive correlation between environmental elements and healing outcomes (Djiktsa, 2010). Medically, stress in patients can suppress the immune system which makes patients require longer treatment time than usual, even worse, it can accelerate the occurrence of complications during the treatment period. This shows that the role of the inpatient room has an important role in reducing psychological stress on patients. Therefore, it requires an inpatient room installation design that can make patients feel comfortable, safe, and calm from a psychological perspective.

The application of the healing environment concept in the inpatient room installation is implemented to create a feeling of comfort and safety in the inpatient room based on the character of the patient. A healing environment is an environment that is conditioned in such a way as to reduce stress factors in patients and optimize patient healing through a psychological approach. The healing environment is not only focused on function but also the impression given by the interior object itself.

Healing Environment to (Huisman, et.al., 2012) in the healing environment journal: A review of the impact of physical environmental factors on users stating the factors that influence the healing environment, such as:

- a. Reduces the possibility of human error (the same room type, insufficient lighting),
- b. Improve safety systems (reducing the possibility of falls, and infections, and improving indoor air quality),
- c. Full control for the patient,
- d. Privacy,
- e. Comfort (materials, art, visual comfort, acoustic comfort, and orientation),
- f. Family support,
- g. Natural elements are designed in such a way as to reduce the psychological impact that may occur on patients and speed up the patient's healing process from a psychological perspective.

Apart from that, according to (Murphy, 2008), there are also three approaches used in designing a healing environment, namely:

- a. Natural,
- b. Sense,
- c. Psychological.

So apart from the seven aspects of the healing environment, these three approaches also need to be considered. Based on the two theories above, there are similarities in views that intersect, namely:

- a. nature and nature,
- b. Psychology is a behavioral aspect of complete control for the patient, privacy, comfort (materials, art, visual comfort, acoustic comfort, and orientation), and family support.

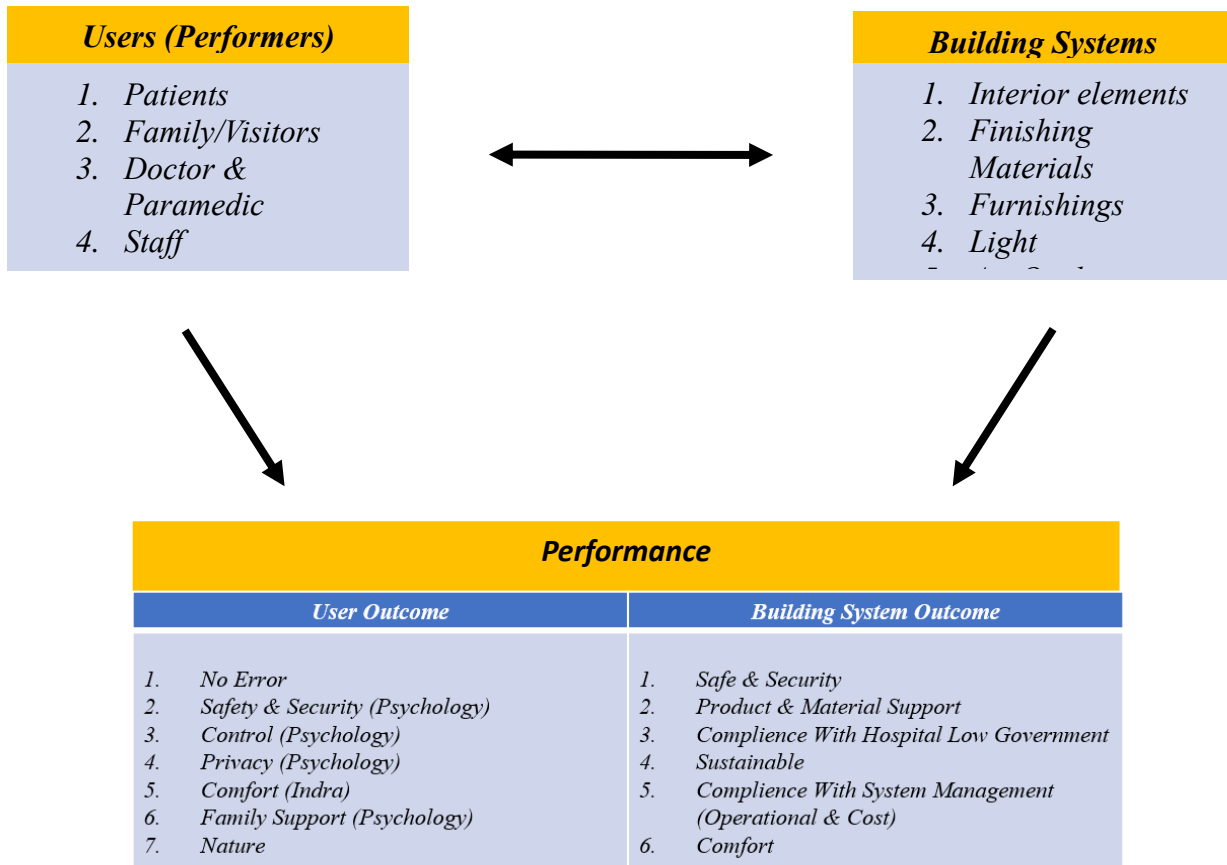


Figure 1. Inpatient Healing Environment

2. METHOD AND ANALYSIS

The method used is a descriptive qualitative method approach, namely carrying out analysis and observation of existing conditions. The observation method is a technique used to see and observe changes and social phenomena that develop and grow which can then be changed (Margono, 2007). This will determine the current conditions regarding inpatient rooms and what they require. The qualitative variables used and analyzed in each hospital are factors that influence the healing environment. To obtain research results related to healing environments, patient and user behavior will be discussed, the psychology of colors that encourage healing, and designs that support healing environments.

The type of data source is primary data which comes from data from the results of field studies at several hospitals used as comparative study locations in the form of photos and written data, as well as secondary data which is used as a theoretical basis. By using this method it is hoped that it can analyze user activities to see whether they feel comfortable, calm, and safe when in the inpatient room.

3. RESULTS AND DISCUSSION

3.1 Government regulations

The design concept according to the Ministry of Health of the Republic of Indonesia (2001), explains that there are six dimensions for patient care, namely compassion, empathy, response to needs, information and communication, physical comfort, emotional support, and family involvement. These things must be taken into account when applying the design so that the results of the design can have a positive influence on the patient's emotions and

can have a positive influence on the patient's emotions and can help the recovery process to be faster. So, the approach that will be applied is psychological. For the concept, it uses the concept of a healing environment.

Seven factors influence it, namely reducing human error, security, full control, privacy, comfort, family support, and natural elements (Huisman, et.al., 2012). These seven factors will later influence the visualization of the interior design of inpatient rooms. Second, apart from the seven factors above, it is also necessary to pay attention to three approaches in designing a healing environment, namely natural, sensory, and psychological (Murphy, 2008). Because these three things are interconnected and interdependent, where natural conditions (both natural and artificial) will respond to someone who is captured by their senses, then this response is processed according to the human psychological state and produces a reaction to nature or the surrounding environment. These three aspects will influence the feelings, reactions, or perceptions produced by the patient when they are in the inpatient room.

3.2 User Behavior Analysis

In analyzing user behavior, it is based on aspects of the healing environment that is expected to occur in inpatient rooms.

3.2.1 Patients

The inpatient room is often the place where patients stay the longest in the healing process. The condition of the rooms in many hospitals in Indonesia is still often uncomfortable and cannot provide a comfortable place. The atmosphere of the room is inadequate with minimal facilities that seem basic, materials that are not appropriate, the choice of colors that are too flashy or even pale and colorless. All of this makes Ranap's room not support the healing process. Healing environment concept.

It must be remembered that the basic function of a room is as a place to rest so that the desired atmosphere is calm, peaceful, comfortable and cool (cooling down). The general perception of a comfortable room is a bedroom at home or higher is a hotel room. So that a replica of the bedroom atmosphere can be taken taking into account the patient's needs.

For patients, especially those who stay for a long time, other activities in the room need to be considered, such as eating, working, looking outside, storing equipment. The patient's healing process also requires family support. In Indonesia, the culture of waiting for patients and visiting patients also needs to be accommodated. Apart from that, the majority of Indonesia's Muslim population also has an impact on Muslim patients who usually want to pray in their room, so the Qibla direction should be in the room and can be placed in a special place.

3.2.2 Doctors and Paramedics

The main goal of doctors and paramedics is to provide health services, monitor the patient's physical condition and provide regular treatment. For doctors when examining in the room, they need to pay attention to ease of access, the examination light is bright enough, the examination position of the right hand is on the side of the patient's head on the bed. Meanwhile, paramedics will visit patients regularly so that access in and out must be easy, ensuring that patients are supervised, safe and that infections do not occur while in the room (nosocomial control). The need for a safe space that does not cause accidents for patients (not slippery & does not injure) needs to be considered.

3.2.3 Worker

In this case, the cleaning service staff who work routinely clean the rooms both when the patient is there and when the patient changes. With the number of Ranap rooms usually quite large, the number of human resources being limited, the time for cleaning the rooms must be effective and efficient. This means that the layout, furniture design and material selection must be considered so that it is easy to clean and not easily damaged. Even choosing the type of trash can also affects the ease of cleaning the room. Nutrition staff workers who deliver food regularly need ease of entry and exit and facilities to accommodate them.

3.2.4 Visitors or Family

Patient visitors, whether family or relatives, are something that is always present in hospitals in Indonesia. Our culture of accompanying patients needs to be accommodated in a certain measure. The zoning position of the family area should not disturb paramedics or doctors when examining patients. It is necessary to provide waiting facilities that are comfortable enough to sit or sleep if you are allowed to stay overnight, especially for VIP & VVIP rooms. For patients sharing rooms, it depends on the hospital's policy as to whether they allow overnight stays or not. If you can stay overnight, it means you need to consider having a place to sleep too.

3.3 Analysis of Aspects of the Healing Environment According to Users

3.3.1 Reducing the Occurrence of Human Error

The patient's desire to recover quickly must be supported by creating a conducive space. The basic aspect of a clean room is to avoid physical accidents in the room or mishandling or diagnostics. Therefore, the choice of material is an important aspect, such as a floor covering that is not slippery, not rough. The surface of the furniture or walls is not sharp. The lighting is bright enough, especially in the patient's area, to confirm the doctor's diagnosis.

3.3.2 Improving Security Systems

The fact that the patient's belongings are often stolen from the patient's belongings and the patient's guards make it necessary to provide a sense of security by providing supporting facilities such as CCTV in the security hallway, a one-door system guarded by security officers who regulate visiting times and the location of a nurse station that is accessible to monitor all rooms, as well as a place safe and supervised storage. Apart from providing a sense of security and protection, patients receive a nurse call system near the patient's bed and in the toilet for emergencies. For nurses or workers, being able to see the patient's condition without having to enter the room is also part of creating security.

3.3.3 Full Control for Patients

What this means is that even though the patient is in a weak condition, he can manage his needs from bed or not far from it. This gives the patient confidence that he can still carry out his activities without having to be helped by other people. For this reason, you need to watch TV, adjust the coolness level of the AC, call the nurse and even turn the lights on and off.

3.3.4 Privacy

The need for alone and quiet rest needs to be created for patients, therefore the need for bed divider curtains can provide privacy, especially for patients who share a room. For Muslim patients, the room is often also a place of worship so it needs to be properly accommodated for their prayer needs.

3.3.5 Comfort (materials, art, color, senses)

Discussing comfort in Ranap's room can be obtained not only in one thing but in many aspects to create comfort. Important aspects include:

- a. Selection of floor material
- b. Selection of wall materials

- c. Selection of ceiling material
- d. Lighting arrangement
- e. Air conditioning
- f. Selection of furniture
- g. Selection of supporting elements

3.3.6 Family support

In Indonesia, family support for patients is very important, so providing an area for families accompanying patients needs to be well-prepared. The resting area for the patient's companion needs to be thought of as being multi-functional. As a place to sit, rest, or work. For nurses, the presence of family also helps monitor the patient's condition more comprehensively.

3.3.7 Element of Closeness to Nature

Humans prefer to connect with nature. Patients who have a connection with an external view of nature will find it easier to rest and receive healing. Therefore, a window to the outside needs to be made so that patients can get the atmosphere of the outside view and can feel the change between morning, day, and night.

3.4 Color Analysis Encourages Healing (Healing Color)

The application of inpatient room colors is often misguided in determining color. Determining colors to support healing color is often interpreted literally. Like the color green which has connotations of nature and peaceful trees, this is translated by painting all rooms green so that they look striking. The women's room is painted entirely pink so the impression you get is uncomfortable. On the other hand, sometimes the entire wall is colored white so it feels pale.

Interpreting the psychology of color in creating a healing environment does not necessarily mean choosing one color. Healing colors for bedrooms are colors that make you relax and rest comfortably. In general, soft colors are pastel or neutral colors. What is considered representative are colors that are close to nature, such as:

- a. The color of the sky or sea is a calm shade of blue,
- b. Shady trees, soft green grass,
- c. The earth colors are shades of cream and brown.

Structuring the interior through color choices is actually not as simple as choosing one color that is dominant or the same in the room, but choosing colors in the interior is determining a mix and match of colors that support each other with certain color nuances. The color composition must be considered thoroughly, including the color of the floor, walls, ceiling, furniture and other supporting elements. Only then can you get a comfortable color composition. In this case, it is necessary to create a color scheme to produce a color composition that supports healing.

4.5. Analysis Architectural Interior Design Elements

In designing the interior of an inpatient room, this can only be achieved well if we pay attention to the elements in the room that meet the residents' expectations. These elements include:

- a. Room facilities are any necessary elements,
- b. Selection of floor, wall and ceiling materials,
- c. Selection of furniture,
- d. lighting arrangement,
- e. ventilation,
- f. Supporting elements.

4.6 Design Guide

Based on the analysis of user behavior, aspects of the healing environment, psychology of colors in the inpatient room, and the elements in the inpatient room, below is a guide or direction in determining the things mentioned above: The initial basis for designing a sleeping room is to remember that the main function of a sleeping room is as a bedroom, namely a space used for resting to speed up the healing process. As a bedroom, it means that patients need a calm and peaceful atmosphere. The patient's memory of a comfortable bedroom is like sleeping at home or a hotel bedroom which is perceived as a comfortable bedroom. Therefore, the atmosphere of the bedroom should approach this.

The results obtained from the application of healing environment factors are in the form of interior visualization designs for inpatient rooms by paying attention to the use of shapes, application of safe materials, and color concepts according to user psychology, as well as paying attention to the security side of the room, choosing the right furniture and room facilities to create an atmosphere that makes the patient feels calm. In terms of the sense of touch, it is necessary to pay attention to selecting safe and appropriate materials to support safety and comfort. A calm and noise-free atmosphere is obtained from choosing the right floor, wall and ceiling materials.

Apart from that, it is also applied to furniture to eliminate sharp impressions and provide a sense of security for patients. Apart from that, of the seven healing environment factors that can influence patient recovery, this form of concept is included in the safety factor. Because using non-sharp furniture can reduce the level of danger that can injure patients. The design concepts that need to be considered when designing inpatient rooms that support healing:

4.6.1 Spatial Planning Concept

Zone settings for patients, visitors and paramedics should be arranged so as not to interfere with each other's activities. Spatial planning needs to be considered to make it easier for patients to receive services that promote healing. Proximity to family, ease of accessing the bathroom and wardrobe, ease of taking food, and ease of carrying out other activities such as writing, working, reading or worship. Meanwhile, the family supports the patient in getting a rest area that is comfortable and affordable for the patient.

4.6.2 Size and Physical Concepts

The size of the room is important to achieve comfort in the room, the area, ceiling height, size of furniture, cupboards, chairs all follow applicable standards and Ministry of Health regulations for inpatient room requirements and pay attention to health aspects.

4.6.3 Color Concept

To achieve an atmosphere that can reduce stress and anxiety so that patients feel comfortable when they are in the inpatient installation if viewed from a psychological perspective, this color concept has an important influence in interior design because it can create a room atmosphere that has a strong, pleasant, and welcoming impression. provide an emotional influence on users (Pile, 1995). Apart from that, there is research that has proven that colors that reflect nature can help relieve anxiety and provide comfort and calm. Apart from colors that reflect nature, colors that are calm and calm. The color blue (reflecting nature, namely the sea), has a calm, serene, serene, and peaceful effect (Gon H, et al, 2008).

For brown (a color that reflects nature, namely wood), it gives a comfortable, stable, and warm effect (Gon H, et al, 2008), for pink, which is the color of a woman's character which is associated with softness, it has a calm and peaceful effect (Gaines, 2011) . The color white itself gives a clean, open, and bright effect in hospitals (Pile, 1995 and Birren, 1961). The concept of color in this healing environment includes the application of sensory effects, namely sight. The application of color in this inpatient installation can influence patient psychology.

4.6.4 Lighting Concept

The lighting concept applied in inpatient installations is divided into two, namely natural lighting and artificial lighting. The application of these two types of lighting must be applied to inpatient rooms by standards and needs. For the need for artificial lighting in inpatient installations by Minister of Health regulations, namely when the patient is not sleeping the light intensity required is 100-200 lux, while when the patient is asleep the light intensity required is a maximum of 50 lux with both using medium light colors (Guidelines Class B Hospital Facilities and Infrastructure Techniques, 2010).

The natural lighting concept used in this inpatient installation comes from the window openings available in the room, which have direct access to views around the hospital which can reduce stress during the treatment period. For artificial lighting, there are two types used, namely general lighting and task lighting (check lights). General lighting is divided into two, namely direct using downlights for the room area so that the light is even, and there are surface luminaries for inspection lights. Meanwhile, for indirect, LED lights are used with a cover light system to provide soft light and not make the eyes tired when it is time for the patient to sleep or rest. This is also used to adjust to the use of light intensity determined by the PERMENKES.

This lighting concept is by one aspect of the healing environment, namely the sense of sight. Where the required light intensity can affect the patient's condition. Apart from that, lighting is also included in the seven healing environment factors that influence patient healing, namely full control. This means that the use of this light must make the patient feel comfortable and not have a dazzling effect on the patient and the light should not reflect on the objects it illuminates (Technical Guidelines for Class B Hospital Facilities and Infrastructure, 2010).

4.6.5 Material Concept

The material concept that is good for use in inpatient installations is material that can give a natural impression with warm tones, neutral colors and natural colors to respond to the needs of a space that has a high number of activities and users, so a room is needed that can reduce stress and reduce stress. provides comfort.

The material concept for material use, there are requirements that must be used in hospitals, namely quality materials (not easily damaged & durable) that are water resistant, fire resistant, scratch resistant, and resistant to bacteria and fungi. Apart from that, it also requires material that is easy to clean, does not endanger users. These requirements are in accordance with those stipulated in the Indonesian Minister of Health Regulation. For example, using "easy clean" wall paint which is low VOC, odorless, easy to clean. Then use homogeneous vinyl and granite ceramics on the floor, and gypsum board on the ceiling. The application of this material concept includes the healing environment aspect, namely the sense of touch. Where the material applied must have a smooth texture for patient safety and the concept of this material is included in one of the seven healing environmental factors, namely safety. It can be said to be safe if the material is not slippery, easy to clean and hygienic.

4.6.6 Air Conditioning Concept (Indoor Air Quality)

The ventilation system in inpatient installations is recommended to have natural ventilation, namely air entering and leaving through the windows in the room so that patients feel calm with the cool air from outside (Technical Guidelines for Class B Hospital Facilities and Infrastructure, 2010). Apart from that, for the use of artificial ventilation, namely through AC, its use is adjusted to the patient's needs, the air temperature can be adjusted according to the patient's wishes. So the AC used is a split AC which is adjusted to suit your needs. Standards for temperature, humidity and air pressure in inpatient rooms must be considered. So, in the inpatient room the room temperature is between 22°C– 24°C, with humidity of 45 – 60%, and positive air pressure (Technical Guidelines for Class B Hospital Facilities and Infrastructure, 2010). The following is the concept of ventilation in this inpatient

installation including seven healing environment factors, namely full control. Where AC control is very necessary to maintain the stability of the condition of the patient being treated.

4.6.7 Furniture Concept

The concept of furniture that will be used must pay attention to the strength of the material, selecting safe materials, the right size, proper placement and not storing dust. Apart from that, we must pay attention to the user's needs, where in terms of the concept of this furniture it also requires special attention, such as paying attention to ergonomics and anthropometry to make patients feel comfortable and safe when they have to undergo treatment in the inpatient installation. There are three types of furniture concept for furniture that will be used.

1. Built in is furniture that is designed to be attached to or planted on a wall, for example wardrobes, pantries, storage shelves, medical gas wall outlets, wash basins.
2. Loose furniture is loose furniture, namely furniture that can be moved around, such as chairs, sofas, tables.
3. *Mobile furniture* namely those that can be moved and have wheels to make mobility easier, for example patient beds, IV drips, wheelchairs, dining tables, and various other medical equipment (medical equipment).

This furniture concept is included in one of the seven healing environment factors, namely comfort. Because the furniture used must suit the patient's ergonomics and anthropometry. And also for the sake of patient comfort and safety, the furniture used must not have corners, have soft seats, be easy to clean, and not store dust.

5.8 Security Concepts

The security system is one of the healing environment factors, namely security, which is applied in inpatient installations in the form of protection for safety, user security and accidents. The security concept of the fire protection system is by providing interior materials that are fire resistant for 2 hours. For light fire protection, use a light fire extinguisher in the form of a fire extinguisher placed in the inpatient corridor, smoke detectors and sprinklers in each inpatient room. The protection system against accidents uses materials that comply with standards, namely non-slip, non-sharp, non-toxic, as well as handrails in the corridors of inpatient installations which are made in accordance with hospital standardization provisions made by the Indonesian Ministry of Health, namely handrails for adults with a height of 80 -90 cm (Technical Guidelines for Class B Hospital Facilities and Infrastructure, 2010). Security systems to prevent crime such as using CCTV and locking inpatient installation rooms that are considered prone to crime. CCTV can also be used as a safety system because it can monitor the patient's condition if something unexpected happens. Apart from that, a nurse call must be available in the inpatient area. If something happens to the patient, they can easily call the nurse to immediately ask for help (Technical Guidelines for Class B Hospital Facilities and Infrastructure, 2010).

4.6.9 Supporting Materials

What is meant by supporting materials are elements that need to be present in inpatient rooms to provide user comfort. The supporting materials include:

1. Room numbering is to make it easier to find the patient's room. The room number should be written in letters that are large enough and clear in color.
2. Aesthetic elements such as paintings, art work or digital printing can be provided to provide positive energy (positive distraction) for the space. Aesthetic elements should be chosen that support the color composition of the space. For hospitals, natural elements can usually provide a feeling of calm, such as flowers, green leaves, and others.
3. The direction of the Qibla, the majority of the Indonesian population being Muslim, means that patients also need to pray in the room, so the Qibla should be positioned and placed in a

place that is visible but not prominent, such as in the corner of the ceiling or in a cupboard drawer.

4. Trash cans are often overlooked in determining design, even though they are very useful for ensuring room cleanliness. The trash can in the room should be closed and opened with a step to make it more hygienic and placed in a place that is easily accessible to cleaning staff. Put one in the room and one in the toilet.

4. CONCLUSION

Based on the discussion above, it can be seen that user behavior is important in creating inpatient rooms that encourage healing using the healing environment concept where user needs are translated into the choice of colors, materials, furniture, facilities, and other supporting elements. The inpatient room is a place for patients to rest and should have a calm, clean, orderly, and comfortable atmosphere so that the healing process is optimal. Users' physical and psychological needs are met optimally. Of course, in providing safe rooms with certain specialties, such as for children, mothers or the elderly, further research related to user psychology needs to be added. But this guide or direction for designing a bedroom will be the basis for further research.

REFERENCES

- Alhamdani, M. R., & Sari, D. P. (2019). Performance Evaluation of Pontianak Kapuas Indah Market from Architecture and Behaviour Aspect. *Journal of Architectural Research and Education*, 1(2), 107. <https://doi.org/10.17509/jare.v1i2.22301>
- Arofah, W. R., Permana, A. Y., & Mardiana, R. (2019). Implementation of Responsive Architectural Concepts in the Design of the Cikole Forest Resort, Bandung, West Java. *Indonesian Journal of Built Environmental and Sustainability*, 1(1), 1. <https://doi.org/10.31848/ijobes.v1i1.247>
- Bawono, A. (2019). Creative economic development of Islamic boarding schools. *Shirkah: Journal of Economics and Business*, 3(1), 25-47.
- Ceylan, C., Dul, J., and Aytac, S. (2008). Can the office environment stimulate a manager's creativity?. *Human Factors and ergonomics in Manufacturing and service Industries*, 18(6), 589-602.
- Ghasempourabadi, M., & Hassanzadeh, H. (2021). COVID-19 DISSEMINATION ASSESSMENT THROUGH NATURAL VENTILATION IN HOSPITAL PATIENT ROOM. *Journal of Architectural Research and Education*, 3(1), 1–13. <https://doi.org/10.17509/jare.v3i1.31309>
- Ghassani, A. I., Permana, A. Y., & Susanti, I. (2019). Konsep Ekowisata Dalam Perancangan Resort di Kabupaten Ciamis. *Jurnal Arsitektur TERRACOTTA*, 1(1), 11–21.
- Kencanasari, R. . V., Surahman, U., Permana, A. Y., & Nugraha, H. D. (2020). Enhancing Community Environmental Awareness Through Indoor Air Quality Workshop. *Journal of Architectural Research and Education*, 2(2), 165–175. <https://doi.org/10.17509/jare.v2i2.30290>
- Maulana, R. (2015). The influence of human capital on regional economic growth in Central Java province. *Economics Development Analysis Journal*, 4(2), 159-165.
- McCoy, J. M., and Evans, G. W. (2002). The potential role of the physical environment in fostering creativity. *Creativity Research Journal*, 14(3-4), 409-426.
- Nurahman, H., Purwatiana, R. A., Kusliansjah, Y. K., & Permana, A. Y. (2023). Revitalization of Colonial Buildings as Community Centre: Case Study of the Former Radio Cililin Building, Bandung, West Java, Indonesia. *Journal of Design and Built Environment*, 23(2), 34–56. <https://doi.org/10.22452/jdbe.vol23no2.3>
- Nurrahman, H., Permana, A. Y., & Akbardin, J. (2022). A virtual tourism model as an alternative to the concept of post Covid-19 educational tourism in Bandung. *AIP Conference Proceedings*, 050002(December).
- Permana, A. Y., Akbardin, J., Permana, A. F. S., & Nurrahman, H. (2020). The concept of optimal workplace in providing a great experience to improve work professionalism in the interior design of PLN Corporate university, Ragunan, Jakarta. *International Journal of Advanced*

Science and Technology, 29(7), 3238–3254.

<http://sersc.org/journals/index.php/IJAST/article/view/18953>

- Permana, A. Y., Mardiana, R., Dewi, N. I. K., Sumanta, R. V. V., Ezzaty, F. M., & Nareswari, P. A. (2022). Evaluation of Classroom Performance in The Post-Covid- 19 New Normal Era at The Building Program Vocational High School. *Journal of Southwest Jiaotong University*, 15(2), 126–145.
- Permana, A. Y., Nurrahman, H., & Permana, A. F. S. (2021). Systematic assessment with “poe” method in office buildings cases study on the redesign results of office interior after occupied and operated. *Journal of Applied Engineering Science*, 19(2), 448–465.
<https://doi.org/10.5937/jaes0-28072>
- Permana, C. S., Permana, A. Y., & Dewi, N. I. K. (2020). Penerapan Konsep Green Architecture dalam Perancangan Hotel Resort di Kabupaten Tasikmalaya. *UNDAGI: Jurnal Ilmiah Arsitektur Universitas Warmadewa*, 8(2), 82–94.
- Setiawan, A., Akbardin, J., & Maknun, J. (2021). Analysis of Demand Potential and Need for Passenger Terminal Facilities at Cikembar Sukabumi Airport. *Journal of Architectural Research and Education*, 3(1), 67–81. <https://doi.org/10.17509/jare.v3i1.3293>
- Shapiro, I. (2015). Contemporary economic growth models and theories: A literature review. *CES Working Papers*, 7(3), 759-773.
- Shibata, S., and Suzuki, N. (2004). Effects of an indoor plant on creative task performance and mood. *Scandinavian Journal of Psychology*, 45(5), 373-381.