

The Role of Healing Environment in Reducing the Stress of Patients with Non-Communicable Disease

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Abstract

Non-Communicable Diseases (cardiovascular, cancer, diabetes mellitus) is the leading cause of death in the world. In addition to physical pain, patients with Priority PTM have a risk of mental disorders that have the potential to make the patient experience mental disorders, to suicide. The success of the healing process that occurs in patients does not only depend on received medical factors, but also psychological factors. To support the patient's psychological condition, it is necessary to create an environment that is healthy, comfortable, and provides positive support for the patient's health healing process which is called a healing space. This study aims to explore how Hanara Clinic can organize an environment that can reduce stress and support the patient's healing process. This study uses a qualitative methodology with a case study approach, and is dissected using social construction theory. The results revealed that Hanara applied 13 principles of healing space, namely: 1) Optimizing natural ventilation; 2) Optimizing natural lighting; 3) Using earth tone colors for the walls, furniture, and clothing of the therapist; 4) Providing a healing garden; 5) Presenting the sound of nature that is reconciling; 6) Provides aromatherapy; 7) Choosing soft furnishings with natural nuances; 8) Creating gardens and ponds as noise relievers; 9) Maintain patient safety by choosing blunt angle furniture; 10) Placing decorative elements as a means of therapy; 11) Provide a private zone for patients; 12) Using granite and marble floors in the circulation area; and 13) Providing the water element to create tranquility. The series of healing spaces created by Hanara played a role in reducing patient stress. In addition, it also plays a role in improving the quality of life of patients, reducing pain in physical ailments, and shortening patient care time.

Keywords: Healing Environment, PTM Prioritas, Stress.

INTRODUCTION

According to data from the World Health Organization / WHO^[1], Non-Communicable Diseases (PTM) are the leading cause of death in the world compared to other causes. Nearly 80% of deaths from Non-Communicable Diseases (PTM) occur in low-middle-income countries. In Asian countries such as Malaysia, PTM accounted for 67% of total deaths in 2008.^[2] Meanwhile, in Indonesia, PTM is predicted to experience a significant increase in 2030. Its chronic nature and attacks the productive age, causes PTM problems not only health problems, but also affects the resilience of the national economy if it is not controlled properly, correctly, and continuously.

The Ministry of Health through the Directorate of Non-Communicable Disease Control has determined priority types of PTM, namely diseases that need immediate attention and treatment, including heart and blood vessel disease, Diabetes Mellitus (DM), chronic lung disease, and cancer (especially cervical and breast cancer).

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Apart from physical illness, according to Widakdo *et al.*^[3] patients with Priority PTM have other problems, namely having a risk of psychiatric (mental) disorders at least two times that of the general population. The results of research conducted by Widakdo *et al.*^[3] showed 2 to 5 people out of 10 chronic disease sufferers experience mental disorders. In more detail, Widakdo *et al.*^[3] stated that as many as 24% of people with diabetes, tumors, or cancer had mental disorders. Meanwhile, patients with heart disease experienced mental disorders as much as 34%. The results of this study are almost the same as the case that occurred in Spain. Research by Serrano-Blanco *et al.*^[4] revealed that 45% of the 3,815 patients from 77 health services in Spain had experienced mental emotional disorders.^[3]

The high incidence of mental emotional disorders is closely related to chronic disease conditions experienced by patients.^[3,5] These mental disorders can potentially cause the individual to experience mental disorders. Besides having the potential to experience mental disorders, people with mental disorders also have the potential to commit suicide, as happened in Australia. In that country, the effects of mental disorders account for as much as one-third of total suicides in the Australian population. The incidence was slightly lower in men (by 28%) than in women (by 36%) after controlling for age, education, occupation, and economic status.^[3]

Anxiety disorder or anxiety disorder is a type of mental disorder that is mostly found in PTM Prioritas patients. Anxiety is an affective psychological factor that affects the perception of pain. Prasetyo stated that patients who are tense and anxious feel more pain during treatment than patients who are relaxed.^[6] The source of anxiety in patients usually comes from feelings of loneliness, fear of death, environments such as continuous lighting, sounds of tools that are heard all the time, and the alertness of medical personnel. It is estimated that 70% - 87% of critically ill patients experience anxiety. Anxiety can result in physiological changes including blood pressure, heart rate, breathing^[7], agitation, and increased muscle activity / movement. In addition, anxiety can also provoke other emotional disorders, such as fear^[8,9], feelings of being threatened, loss of privacy, inability to communicate effectively, sleep disturbances, and fear of death or disability.

In addition to anxiety disorders, stress disorders are also often felt by sufferers of Priority PTM. Based on the results of research conducted by Pratiwi *et al.*^[10], the high proportion of stress in priority PTM patients, especially diabetes mellitus (DM), is caused by psychological changes as a result of chronic disease experienced by patients. Patients who are burdened by their disease think that DM is a serious and frightening disease. This is an unpleasant experience and can cause stress.^[10] The same thing happens to cancer sufferers. The small

percentage of recovery adds to the mental burden of the sufferer. This leads to feelings of hopelessness, loss of enthusiasm for life, isolation, and anger. This heavy mental burden can affect the results of their treatment.^[11]

The healing process that occurs in humans does not only depend on received medical factors. The Samuelli Institute defines healing as “a holistic and transformative process of repair and recovery in the mind, body and spirit that results in positive change, finding meaning, and movement towards self-realization of wholeness, regardless of the presence or absence of disease”.^[12,13] All of these components contribute to the healing process.^[14,15] To support the patient’s psychological condition, it is necessary to create an environment that is healthy, comfortable, in the sense that psychologically the environment provides positive support for the healing process.^[14,16,17] With a comfortable environment, it is hoped that it can reduce stress factors or mental stress experienced by patients.^[18,19]

This can be realized by creating a conducive and supportive atmosphere through the healing environment. In the United States, the Samuelli Institute, a medical research organization exploring the science of healing has developed the “Optimal Healing Environment” (OHE) which it describes as an integration of “the social, psychological, physical, spiritual, and behavioral components of support and stimulates the body’s innate capacity to support it. heal himself”.^[19-22] Based on the concept of the Samuelli Institute, there are 4 elements that are components in OHE, namely internal, interpersonal, behavioral, and external. Of the four components, this study only focuses on one component, namely the external element which is ecological resilience and part of the healing space.

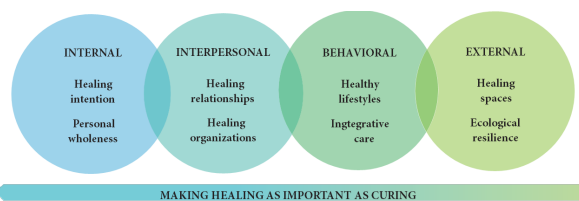


Figure 1: Optimal Healing Environment Model from Samuelli Institute.

Source: Source: Samuelli Institute^[12,23]

In the perspective of communication science, the environment is referred to as nonverbal communication in the form of artifacts.^[24] Based on research conducted by Biley^[7], LaTorre^[25], Zhafran *et al.*^[26], Krisnawati *et al.*^[27] artifacts have a positive impact on patient health and become one of the factors that play a major role in the healing process and the creation of patient mental health, and to be the key to success in the therapeutic field. This is supported by data contained in the book Health and Human Behavior, which reveals that it is precisely environmental factors that play a major role in the human healing process, which is 40%, while

medical factors are only 10%, genetic factors 20% and other factors 30%.^[11,28,29] Regarding its large role in the healing process, environmental factors should receive great attention in designing the interior and exterior designs of a health service facility.

The essence of the concept of healing space is to build an atmosphere through adjusting all design elements to be able to provide positive stimulation for the patient's five senses, so that it can support the patient's health recovery process^[20,30], generating positive and pleasant experiences; reduce stress^[31,32] and offers comfort, hope, comfort regardless of the situation^[16], a sense of optimism^[33] and provides a feeling of peace to the patient and supports the patient's recovery process.^[12] The application of these concepts includes: 1) The design must be able to support the patient's physical and psychological recovery process; 2) Access to nature; 3) The existence of outdoor activities that are directly related to nature; and 4) The design is directed at creating quality space so that the atmosphere feels safe, comfortable, and does not cause stress.^[29]

This study aims to explore the role of healing space in reducing stress in priority PTM patients at Hanara Wellbeing Center Bandung. Researchers hope that this research can become a new treasure in the development of communication, health, and architectural sciences. This research can also be a reference for practitioners in the health sector in creating a comfortable environment that can support the patient's health recovery process.

LITERATURE REVIEW

Healing Environment

Humans and their environment are two inseparable things.^[34] E.O.Wilson in his book *Biophilia* suggests that humans have an innate attraction to nature so that their interactions with nature have a therapeutic effect.^[35,36] The therapeutic environment or the healing environment is also known as the healing environment. According to Putri *et al.*^[37], the healing environment is a physical environment in a health facility that can accelerate the patient's health recovery time or accelerate the patient's adaptation process from chronic and acute conditions by involving the patient's psychological effects in it. The presence of a healing environment is intended to help patients deal with stress caused by their illness.^[38-40] Yetti^[41] said that the application of the healing environment concept in the care environment will appear in the final condition of the patient's health, namely reducing hospitalization time, reducing medical costs, reducing pain, reducing stress or feeling depressed, providing a positive mood, uplifting, and increase patient expectations of the environment.

The concept of healing environment is based on the scientific premise of psychoneuroimmunology, which proposes that there is a significant relationship between

the brain and its perceptions of stressors, tension, and stressful environments and the body's immunological system.^[16] The concept of the healing environment has its basis in neuropsychology and neuroesthetics or the study of the influence of beauty (perception in visuals, art, and taste) on the brain and neurological system. Neuroesthetics has recently emerged as a separate field of study and has significant interest in discussing the influence of the built environment (design attributes, layout, interior design features) on patient and provider outcomes.^[16] This concept was later developed by Robert Ulrich, director at the Center for Health Systems & Design, Texas A&M University, United States. The main theme of the research is the effect of user-centered design or designs that emphasize the needs of users, meaning that users are patients in health care facilities. This research proves that the environment in which a health care facility is located affects the quality of the healing process that takes place in it. The user-centered design principle is then also applied to the artificial environment, namely the interior, through the application of colors, textures, materials, and other architectural elements to create a calm, relaxed and comfortable atmosphere. This is in accordance with the concept of Patient Centered Communication Kurzt and the Planetree Patient-Centered Care (PPCC) Model.^[42]

Ramdani *et al.*^[40], Yetti^[41], Herdyanti *et al.*^[43] explained that there are three approaches used in designing the healing environment, namely natural, sensory, and psychological which are described as follows:

- 1) Nature: Natural elements that are placed into the patient's treatment can help relieve the stress suffered by the patient. Nature has restorative effects such as lowering blood pressure, contributing to a positive emotional state, lowering stress hormone levels, and increasing energy. One of the applications of natural elements in a health facility is to provide a garden. According to Marcus *et al.*^[44], there are several types of gardens in health facilities, including contemplative gardens, restorative gardens, healing gardens, enabling gardens and therapeutic gardens.
- 2) Indra: Indra includes hearing, sight, touch, smell and taste. Each of the senses can be described as follows: a) Sense of hearing: A pleasant sound can reduce blood pressure and heart rate thereby creating a sensation of pleasure that affects the nervous system. b) Sense of Sight: Something that can make the eyes relax / relax such as scenery, natural light, works of art and the use of certain colors. c) Sense of Touch: Touch is the basic mechanism in emphasizing what the patient sees, smells, tastes and hears. d) Sense of Smell: A pleasant smell can lower blood pressure and heart rate, while an unpleasant odor can increase heart rate and breathing. e) Sense of Taste: The sense of taste becomes disturbed when the patient experiences illness or is receiving treatment.

Therefore, the quality of the food and drinks offered must be considered.

- 3) Psychological: Psychologically, the healing environment helps the patient's recovery process faster, reducing pain and stress. There are six dimensions for patient care, among others^[45]: a) compassion; b) Coordination and integration; c) Information and communication; d) Physical comfort; e) Emotional support; and f) The involvement of family and friends.

Stress

Schafer^[46] defines stress as a distraction from the mind and body in responding to demands. Dewi *et al.*^[28] explained that disease is one of the sources of stress experienced by a person. Stress that comes from the source of the disease experienced by patients according to Schafer^[46] is called distress. Symptoms of distress can include a lack of concentration, trembling hands, back pain, anxiety, nervousness, depression, irritability, to speed up speech. Distress leads to two types of physical and psychological disorders, including: headaches, arthritis, high blood pressure, chronic skin disease, gastritis, colitis, lumbago, heart attacks, cancer, headaches, and high blood pressure. . The disadvantages of individuals who experience prolonged and repeated stress are decreased productivity, feeling unhappy, physical illness, low energy, wasted energy, decreased life satisfaction, low self-esteem, non-involvement in general problems, and loss of interest in sexual relations.

Patients with priority non-communicable diseases

Non-communicable disease (PTM) or non-infectious disease is a disease that is not caused by germs but due to physiological or metabolic problems in human tissues. Usually this disease occurs because of an unhealthy lifestyle such as smoking, genetic factors, physical disabilities, aging, and psychiatric disorders^[47]. Based on a review of existing data, WHO and the Ministry of Health through the Directorate of Non-Communicable Disease Control have determined priority types of non-communicable diseases that must receive immediate treatment, namely heart and blood vessel disease, Diabetes Mellitus (DM), chronic lung disease, and cancer (in particular. cervical and breast cancer).

Coronary heart disease is estimated to be 30% the cause of death worldwide.^[48] Meanwhile, cancer is known as the second deadly disease after heart disease. In 2012 it is estimated that there are 14 million new cases of cancer in the world and 8.2 million of them cause death and attack productive age^[49] Indonesia is the country with the second highest number of cervical cancer sufferers in the world.^[50] Apart from heart disease and cancer, diabetes mellitus (DM) is a health problem in Indonesia.^[51] WHO in September 2012 explained that the number

of DM sufferers in the world reached 347 million people and more than 80% of deaths due to DM occurred in poor and developing countries.^[51] Based on data released by WHO, Indonesia currently ranks 4th in the number of people with diabetes mellitus in the world.^[10]

Finally, the priority PTM in Indonesia is Chronic Obstructive Pulmonary Disease (COPD). The number is estimated at 64 million people (WHO, 2011). Based on the results of a survey by the Directorate General of PPM and PL, it shows that COPD ranks first as a contributor to morbidity (35%), followed by bronchial asthma (33%), lung cancer (30%) and others (2%).^[52]

Research methods

This research was conducted at one of the clinics that provide environmental healing facilities in Indonesia, namely the Hanara Wellbeing Center Bandung. Located on Jl. Gatot Subtoro No. 60 Bandung. Hanara started operating in 2010 until now. The type that researchers use is qualitative. Meanwhile, the method used by researchers is descriptive case study method with a single case design so that the research results can describe or describe in detail the problem sequentially from research activities in the field. The theory used is the Social Construction Theory, meanwhile, the source of research data comes from primary data sources such as observations and interviews, and comes from secondary data sources, analyzing documents, documents, archives, notes, and other images related to research. The data collection techniques include observation, interviews, and literature and document studies.

RESULT AND DISCUSSION

Clinics and hospitals in Indonesia, generally have a formal layout, seem stiff and cold with rows of dark uniform iron chairs. On the walls we will also find public health promotion posters. Not to mention the signs hanging on the ceiling of the room or taped to the wall near the door, which inform that a room is a doctor's office, laboratory, registration room, waiting room and so on. In addition, the pungent smell of disinfectant (anti-germ) is typical of a hospital which seems hygienic, usually makes people reluctant to linger there if there is no need.



Figure 2: Lounge / patient waiting room at Hanara Wellbeing Center Bandung Clinic.

Source: www.instagram.com/hanara_wellbeing, 2020.

Unlike the Hanara Wellbeing Center Clinic, Bandung Indonesia. Even though it operates in the same service sector, the Hanara Clinic is specially designed by the owner to be a very comfortable and homy health clinic, so that anyone who is in it feels at home, feels like at home. Once entering the Hanara building, patients will immediately feel the different atmosphere. On the Hanara terrace, there is a Japanese style garden with green grass and shady trees which makes the atmosphere cool and shady. When entering the lounge which functions as a waiting room, there are large sofas with a modern style that seem exclusive and comfortable. The Hanara Lounge looks more like a hotel lobby than a hospital waiting room. This is done in order to make visitors feel comfortable. Given that the target consumer Hanara is the upper middle economy.

Far from having a “hospital smell,” all rooms at Hanara are specially designed using automatic aromatherapy fragrances that exude a fresh smell in every room. The lighting in Hanara is also very good, so it seems very clean and comfortable. So it is not surprising, while waiting for consultation or therapy time to arrive, many patients look very comfortable, considering Hanara as at home. Some patients have even been seen playing games while sitting cross-legged on the sofa, other patients are sitting back and leaning back, some are sitting on their backs, and even many patients fall asleep, they are so comfortable.

Based on the literature review carried out, there are 24 elements used as elements in the healing environment, even so, the Hanara Wellbeing Center Clinic only applies 13 principles, including:

Air Circulation

The air circulation or ventilation in the Hanara Wellbeing Center Clinic consists of natural and artificial ventilation. To get natural ventilation, this is done by making large openings in the wall, window and door areas. The doors in Hanara are designed in the form of sliding doors with glass material, so that when you open them, you get the maximum opening. According to Ramdani *et al.*^[40], this is very good, because it makes it easier for patients to be able to access fresh air, reduce anxiety, and reduce stress. This is confirmed by research conducted by Oi-Zhen *et al.*^[31] which shows that patients who live in rooms with windows facing the outside can have significantly shorter postoperative hospitalizations than patients who have closed brick walls. Meanwhile, to support ventilation in the clinic environment, Hanara planted many plants that function as air purifiers. In the outer area, there are vegetation *Casuarina Equisetifolia*, *Bambusa Vulgaris* Var. *Striata*, *Psidium Guajava*, *Chalatea*, *Singonium*, *Schefflera Arboricola*, *Bromelia Bicolor*, and *Osmoxylon Lineare*. Meanwhile, in the indoor area, Hanara placed indoor

plants in every corner of the room, such as *Zamioculcas Zamiifolia*, *Singonium Podophyllum*, *Arecaceae*, and *Typha Angustifolia*. Another way that Hanara uses to optimize ventilation is to create artificial ponds and waterfalls that are placed in the front and side areas of the clinic, this is very good, because flowing water is more effective at ionizing the air.^[53] Meanwhile, Hanara used artificial ventilation (AC) when the temperature in Bandung began to rise. Usually used starting from 10.00 WIB. AC is usually installed in every room.



Figure 3: Some *Singonium Phodopyllum* and *Zamioculcas Zamiifolia* indoor plants placed at the Hanara Clinic are useful as air purifiers.

Source: www.instagram.com/hanara_wellbeing, 2020.

Lighting

There are two sources of light in Hanara, namely natural (sunlight) and artificial (lamps). Natural lighting is obtained through openings in wide walls (windows), glass walls, or skylights. This is done so that sunlight can enter optimally into the room. Sunlight is important for calcium assimilation, vitamin D production and liver work processes^[53], increases the body’s immune system^[28], and encourages positive emotions.^[26,29] At several central points, such as the cafe area, front office, lobby, and treatment room, the walls are made of full clear glass, so that sunlight can freely enter, and the room is bright and looks beautiful. According to Putri *et al.*^[37], this is ideal, because natural lighting with the use of glass can introduce sunlight into the building. Meanwhile, in the outdoor area, patients are treated to skylights with thick and large round shapes that make it easier for natural light to enter the terrace area. This method of managing natural light according to Honggowidjaja^[54] has a plus point, because it is also useful for fulfilling aesthetic aspects.



Figure 4: Use of skylights to optimize light at the Hanara Wellbeing Center Clinic Bandung, Indonesia.

Source: www.instagram.com/hanara_wellbeing, 2020.

Research shows that with appropriate light selection (plus color, sound, and privacy), patients have a shorter

stay, take less pain medication, and have fewer negative comments documented in nursing records than patients placed in traditional hospital environment.^[17] Apart from natural light, Hanara Clinic also uses artificial light in the form of lamps. In artificial lighting (lamps), the color temperature is indicated in Kelvin (K) units. A low color temperature creates a warm and cozy light effect, while a high color temperature creates a fresh and vibrant effect. In the terrace and front office area, Hanara uses lighting with a pure white or white color temperature, ranging from 6,000K - 6,500 K, showing a modern impression. Meanwhile, the Hanara treatment room uses warm white lighting, has a yellowish-white color, ranging from 2,500K - 3,500 K, displays a luxurious impression, creates a feeling of calm and warmth and relaxation. Meanwhile, the doctor's office and lobby have natural white lighting, have a white color with a slightly yellow tone, are between white and warm white, ranging from 4,000 K - 5,500 K, displaying colors that match / approach the original. It is very suitable to be used to get the benefits of these two colors (white and warm white). The position of this artificial lighting source is planted on the ceiling (mounted downlight) or hidden next to the ceiling (hidden lamp), this is done so that the light is protected from the patient's eyes. Apart from the main lights, in each room Hanara also places spotlights that are positioned to illuminate decorative elements. The lamp is equipped with a light switch and is ideally installed in the range of $\pm 1,300$ mm from the floor surface. According to Putri *et al.*^[37], this is said to be ideal, because the position of the light switch will make it easier for someone to control the lighting.

Colour

Psychologically, color has a strong influence on mood, emotions^[14,55], and the patient's physiological response.^[17] The Society of Critical Care Medicine recognizes the importance of color and recommends that room color should be calming and encourage rest.^[17] Therefore, according to Spalding^[56] the choice of color in the healing environment must be considered carefully, because each color has the potential to give a positive or negative impression to space users which will affect user behavior and also the user's psychological state.^[38] Hanara applies natural colors (earth tone) such as white, cream, khaki, and chocolate which are applied both to the interior, therapeutic clothing, as well as various products, accessories, and healing gardens in Hanara. Brown and other earth colors are a combination of three colors, namely red, yellow and black. Brown is a color that creates a serious yet soft and warm impression in a room.^[57] This color is a color that is a symbol of the earth^[58] which shows softness, warmth, a sense of comfort and safety, simplicity, elegance, and familiarity. Apart from the earth tone, Hanara also uses white for the entire wall of the room. Based on color analysis, natural colors such as white give a clean impression^[40], open^[55],

and give the impression that the space is bigger than the actual dimensions.^[14]



Figure 5: Application of earth-tone colors to therapist clothing, clinic interior design, and Hanara products.
Source: www.instagram.com/hanara_wellbeing, 2020.

Healing Garden

A healing garden is a garden designed in such a way that it can make people feel better.^[11,29,41] The purpose of the healing garden is to make people feel safe, relaxed, comfortable, uplifting, lowering blood pressure, making emotions positive, reducing stress levels, reducing pain, increasing energy, and increasing the quality of life.^[29] Hanara itself has two healing gardens located in two main areas, namely the front garden area located in front of the parking area and adjacent to the front office space, circular in shape around each room in Hanara so that it can be accessed easily by patients. The natural scenery enjoyed by patients, according to Nugroho *et al.*^[38] can relieve stress and reduce pain. Apart from containing aesthetic elements, these plants also function well for health, for example, they can absorb pollutants, absorb toxins, reduce radiation, and natural air purifiers. Apart from gardens, Hanara also provides artificial ponds and waterfalls that are useful for improving air quality and providing a relaxing effect. Water features, according to Putri *et al.*^[37] can reduce stress levels and a positive distraction from pain.

Sounds of Nature

To optimize therapy through sound, Hanara creates artificial waterfalls and ponds and plays natural music to make her patients feel more comfortable and relaxed. Research shows that stimulation through the sounds of nature can reduce stress levels^[28], calm the mind, create feelings of peace, and reduce depression^[59], relieve the patient's physical, mental, and emotional suffering^[60], and are simple and cost-effective hospital interventions that reduce the anxiety experienced while patients undergoing invasive examinations, medications, procedures or surgery.^[20]

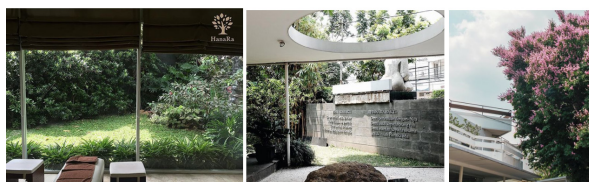


Figure 6: Healing Garden at Hanara Wellbeing Center Bandung Clinic.
Source: www.instagram.com/hanara_wellbeing, 2020.

Aroma

One of the components of another healing environment in Hanara is aroma. Smell can be felt through the sense of smell to stimulate the part of the brain that works on emotions. Several studies have proven that fragrances can have several benefits, including stimulating memory^[61], reducing nausea and vomiting^[62], providing relaxation and anxiety effects^[20,63,64], anti-depression and lowers blood pressure^[65], reduces pain^[26,66-69] and able to overcome insomnia, migraines, nervous tension, and sadness.^[65,70,71] At several points of the room, Hanara placed a coffee scent. According to Buck *et al.*^[72] the aroma of coffee is useful as a neutralizer of unpleasant room odors, sharpens smell, provides a relaxing effect and relieves stress, and increases energy naturally.

Soft Furnishing

The principle of healing environment implemented by Hanara is also applied through the selection of soft furnishing materials including the final coating on furniture, walls, windows and floors.^[73] The design of the front office area provides an open and warm ambiance with wood colors and large blocks of marble made into the reception table. Hanara also uses marble to coat the floors throughout the clinic. Indrani^[74] states that marble has a luxurious and elegant impression because of its unique veins giving it a natural impression. For Hanara furniture, there are many elements of wood. According to Hilliard *et al.*^[73] wood has a natural impression and implies a ‘soft’ feel. Its brown color and unique grain lines allow the wood to give off a “warm” atmosphere in modern architecture and interiors. This wood element is applied to benches, tables, frames, doors and other furniture.

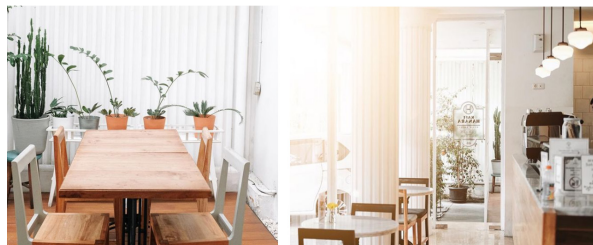


Figure 7: Hanara Clinic applies wood and marble elements to the soft furnishings to give a warm impression.

Source: www.instagram.com/hanara_wellbeing, 2020.

Calmness

Hanara Clinic is located on the main road which has the potential to cause noise. To reduce noise from outside the area, a transition zone is needed. According to Safitri *et al.*^[75], this transition zone is a noise-reducing zone and a bridge from areas that have high enough noise and quiet (private) zones. This transition zone is applied by placing a garden in the front area of the clinic. In the garden area there is vegetation in the form of large

trees, vines, bamboo fences, ponds and walls. Trees and plants function as noise absorbers and wind breakers at night.^[40] Meanwhile, in the indoor area to create a calm atmosphere, Hanara uses high ceiling materials for sound absorption, and provides a wall-enclosed space in the treatment area.



Figure 8: The Hanara Wellbeing Center clinic transition zone consisting of vines, walls & statues (mother and child), and large trees that function to dampen road noise.

Source: www.instagram.com/hanara_wellbeing, 2020.

Shape

Nutrition is not just what is eaten. Sensory experiences can also fertilize or poison a person.^[53] Basically, the various shapes displayed in the Hanara Clinic building are modern in style by displaying geometric shapes that prioritize firm lines, horizontal and vertical lines in the building. This simple form is also reinforced by “silent” colors, such as white, so that a clean modern minimalist design grows.^[74] However, so that the interior atmosphere does not seem “cold” and “soulless”, Hanara gives a touch of “warmth and comfort” through the use of natural materials such as wood and natural stone. Hanara put a large round stone that was placed under the skylight. In terms of furniture shape, Hanara chose a blunt and non-angular shape. This form (blunt), according to Herdyanti *et al.*^[43] serves to increase safety and stimulate patients to relax. Apart from the use of furniture, a “warm” modern feel can be achieved by playing with classic “warm” colors such as beige, ivory, terracotta, and dark brown.



Figure 9: Hanara uses furniture with a blunt shape without sharp corners which is useful for increasing safety and stimulating the patient to be more relaxed.

Source: www.instagram.com/hanara_wellbeing, 2020.

Decorative elements

Apart from furniture, the application of shapes for healing is also applied to decorative elements. According to Calloway^[76] decorative elements in space are very important because they have a major influence on the appearance of space. This is confirmed by the research conducted by Ghazali *et al.*^[20] that decorative elements and art have an impact on improving mental health and healing patients. Another fact was also found by Estores *et al.*^[60] which states that art therapy can improve the quality of life of patients. The types of decorative elements in Hanara include abstract paintings with strong colors, which aim to make the space look more “alive” and lively. Mayer^[77] states that expressive abstract painting is like a reflection of a dynamic modern character. The choice of bright colors in the painting is also credited with bringing a “warm” impression to the room. Apart from paintings, Hanara also places artwork that is placed on the empty walls as accents that can beautify the room. Art work according to Indrani^[74] can help improve the mood of a room and can be used as an interesting visual object. In addition to wall displays, Hanara also uses interior accessories as a complement, such as frames, cushions, candle holders and glass or clay knick-knacks. In addition, Hanara places flower arrangements that can enhance the appearance of the room.

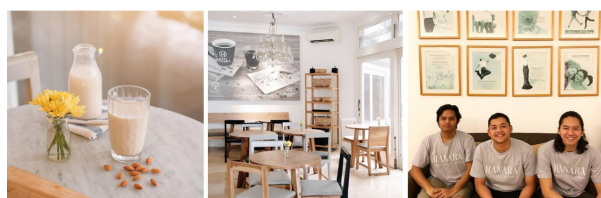


Figure 10: Some of the decorative elements in the Hanara Well Being Center Clinic.

Source: www.instagram.com/hanara_wellbeing, 2020.

Privacy

Hanara is very concerned about patient privacy so that patients can rest and do treatment in peace. Hanara divides each room into three, namely the public zone, semi-private zone, and private zone. The public zone is a zone that can be accessed by the general public, for example, parking areas, cafes and front offices. The semi-private zone is a zone that can only be accessed by patients, staff, doctors, and accompanying patient families, for example a lounge, meditation room, healing garden, doctor’s room, Hanara pool, Hanara waterfall, changing rooms, locker rooms, toilets, and prayer room. Meanwhile, the private zone is a patient’s privacy area that serves to provide privacy and a sense of security. In the private zone, there is a treatment room that can only be accessed by patients who get a recommendation from a doctor and register at the front office. This room can only be accessed by 1 individual and 1 therapist.



Figure 11: Patient Private Zone at Hanara Well Being Center Clinic.

Source: www.instagram.com/hanara_wellbeing, 2020.

According to Oi-Zhen *et al.*^[31], it is important to provide a privacy-oriented health care center where the quality of care can be improved and, in turn, increased patient satisfaction levels. In fact, Felgen^[32] findings show that patients who can control temperature, lighting, music volume, time, and food content personally (privately) have less stress and are likely to recover more quickly. Not only has a positive impact on patients, this private facility is also beneficial for those closest to the patient, because it can reduce the patient’s family anxiety and increase their participation.^[17]

Circulation

Circulation within the clinic is not only intended for pedestrian areas and wheelchair users. The floor is made strong, sturdy, and non-slip so it is safe for patients. Hanara uses granite flooring in the outdoor area and marble in the indoor circulation area. The connecting circulation between buildings is equipped with a canopy to provide comfort for patients to reach between buildings. But unfortunately for the staircase area, Hanara does not have facilities for wheelchair users. Even though the second floor is an important area where there is a doctor’s room.



Figure 12: Granite flooring in the outdoor circulation area at Hanara Clinic.

Source: www.instagram.com/hanara_wellbeing, 2020.

Water Element

The presence of the water element in space can be a stimulant for all human senses. Natural water elements are applied by making an artificial waterfall called the Fountain of Youth and an artificial pool called the Life Energy Pool. The presence of the water element

according to Laurens *et al.*^[78] functions as a reflection, provides a dramatic effect, stabilizes heart rate and blood pressure^[28], and provides a relaxing effect, and improves air quality.^[38]

Based on the explanation above, that the 13 elements of healing space in Hanara Wellbeing Center Bandung can not only relieve stress experienced by PTM patients, but also help improve the physical health of patients and improve their quality of life, which if described in a model as follows:



Figure 13: Artificial Pond at Hanara Clinic.
Source: www.instagram.com/hanara_wellbeing, 2020.

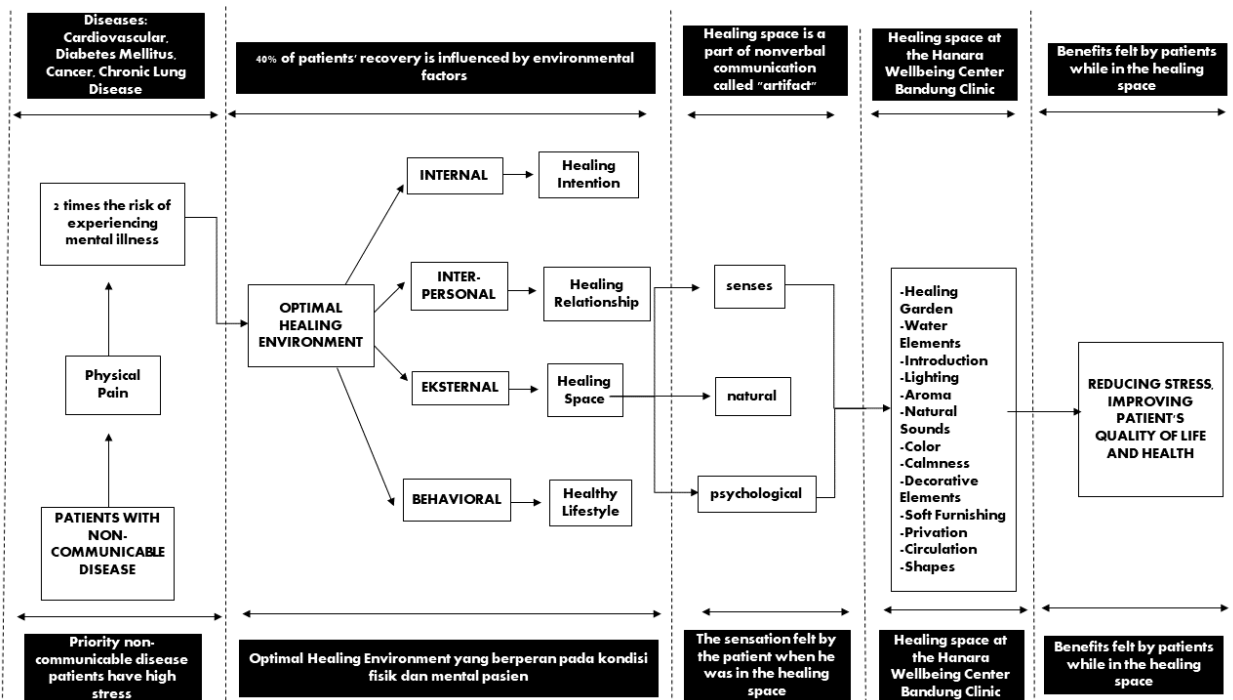


Figure 14: Model of Healing Space in Reducing Stress in PTM Patients at the Hanara Wellbeing Center Clinic, Indonesia.

CONCLUSION

The results of the study revealed that Hanara applied 13 principles of environmental healing that were applied to her clinic, namely: (1) Optimizing natural ventilation; (2) Optimizing natural and artificial lighting; (3) Applying an earth tone color; (4) Providing a healing garden; (5) Presenting natural sounds; (6) Providing aromatherapy; (7) Choosing soft furnishings with natural nuances; (8) Providing gardens and ponds to reduce noise; (9) Hanara chose a blunt shape to increase patient safety; (10) Placing abstract paintings, art work, and flower arrangements for decorative elements; (11) Maintain patient privacy; (12) Regulating circulation in the clinic area; and (13) provide the water element. Not only reducing patient stress, the healing environment at Hanara Clinic also plays a role in improving the patient's quality of life, relieving physical pain, and reducing the length of treatment.

The suggestion to be conveyed at Hanara Clinic is

to provide circulation to support wheelchair-bound patients in the stairwell area. This is to make it easier for patients who have difficulty walking to access the second floor, because the second floor is the main area where there is a doctor's room on that floor. Because so far, patients with wheelchairs need 3-4 people to carry the wheelchair on the second floor.

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