

# Implementation of the Healing Environment Approach in the Chemotherapy Unit of the Dharmais Cancer Hospital

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## ABSTRACT

Cancer is a disease that causes death in the world. One of the treatments for cancer is chemotherapy, which causes side effects that can reduce the patient's health condition, namely stress. A comfortable and soothing environment can have a positive impact on the patient's psychological condition, especially stress conditions caused by chemotherapy treatment. Healing Environment is an approach that can influence psychological conditions by integrating natural elements. The application of the Healing Environment to the interior of the chemotherapy unit is based on three aspects, namely the natural aspect which is manifested through the use of colour, the psychological aspect which is manifested through the provision of interactive facilities for patients, and the five sensory aspects which are manifested through the selection of shapes and colours. The purpose of this study was to implement the Healing Environment approach in the chemotherapy unit at Dharmais Cancer Hospital. This study uses a design process according to the book *Designing Interiors* by Rosemary Kilmer. The design produced by the Chemotherapy Unit has gone through the development of the healing environment approach by thinking about aspects of the healing environment itself. The natural aspect is presented through the colour selection to create a natural atmosphere. The psychological aspect is presented with an interactive wall for patients to be free to be creative. The five senses aspects are presented by choosing the dominance of form and colour selection.

**Keywords:** *Healing Environment, Psychology, Chemotherapy Unit*

## 1. INTRODUCTION

Cancer is a disease caused by the abnormal growth of body tissue cells that turn into cancer cells. During its development, these cancer cells can spread to other parts of the body, causing death [1]. Cancer has become the number one cause of death in the world, shifting away from heart disease based on the results of two decade-long surveys of global health trends. Based on Basic Health Research data obtained from the Ministry of Health of the Republic of Indonesia, Indonesia ranks 23rd in the incidence of cancer in Asia.

The most appropriate medical treatment for cancer is chemotherapy, where chemotherapy aims to kill or prevent the spread of the virus. Chemotherapy uses special drugs to kill cancer cells, where chemotherapy is a systemic therapy, meaning that the drug spreads throughout the body and can reach cancer cells that have spread far to other places [2]. Chemotherapy treatment causes several side effects that can reduce the quality of the patient's health, including the patient's psychological condition.

According to Susanto, Sari, and Suprobo [3], the patient's recovery does not only depend on medical factors, but the patient's environmental and psychological factors also play an important role in the healing process. Environmental factors can play a major role in the healing process of disease in humans, namely by 40%, while medical factors are only 10%, genetic factors are 20%, and other factors are 30%. This percentage led to the emergence of the Healing Environment approach.

According to Ulrich in the journal Huisman [4], healing environments can be considered as "smart investments" because they save money, increase staff efficiency, and reduce the hospital stay of the patient by making the stay less stressful. This concept emphasizes that a suitable or positive environment around the patient can help accelerate the patient's healing process from the various treatments he receives.

Healing Environment according to Ihsanudin and Tri [5] is a concept that contains three important aspects in the patient's healing process, namely:

1. The aspect of environmental healing is the natural environment. The natural environment is able to provide positive energy for human psychology, which provides comfort and relaxation for the human mind's atmosphere.
2. Psychological aspects. The concept of Healing Environment in its application is able to provide positive suggestions for the patient's psychological health. These positive suggestions can generate a feeling of optimism and healthy hope for the patient.
3. Aspects of the five senses. The concept of Healing Environment must be able to provide stimulation to the five human senses which are manifested in natural elements.

The five senses in humans according to Herdiyanti [6] include hearing, sight, touch, smell, and taste. The five senses can each influence human psychology, such as:

1. Hearing Senses  
Pleasant sounds can lower blood pressure and heart rate thereby creating a feeling of comfort that affects the nervous system.
2. Sense of Sight  
Something that can relax your eyes such as scenery, natural light, artwork, and the use of certain colours.
3. Sense of Touch  
Touch emphasizes something that can be seen, smelled, tasted, and heard. Something that is not sharp, smooth, and soft will provide comfort and reduce the effects of stress on the patients.
4. Sense of Smell  
A pleasant aroma can lower blood pressure and heart rate. It can also make the patient feel comfortable and relaxed.
5. Sense of Taste  
The sense of taste becomes disturbed when the patient is sick or receiving medication.

From the background that has been described previously, the author wants to do an analysis of "Implementation of the Healing Environment Approach in the Chemotherapy Unit of the Dharmais Cancer Hospital". The objectives of this study include:

1. Knowing the aspects of an appropriate Healing Environment approach to help the psychological problems of cancer patients in the chemotherapy unit of the Dharmais Cancer Hospital;
2. Analyzing the application of environmental healing approaches in the chemotherapy unit of the Dharmais Cancer Hospital.

## 2. METHODS

The method used for this design is based on the design process in Rosemary Kilmer's *Designing Interiors* book. The design process according to Kilmer [7] is divided into 2 stages, namely the analysis stage which aims to identify problems, understand and analyze problems, and the second

is the synthesis stage which is carried out to process the results of the problem analysis into a design solution.

This design goes through an analysis stage process which is a programming stage where the authors collect all data related to the project design process, then the synthesis stage is a design process that aims to produce solutions to problems obtained from the previous stages. The following are the stages that the author went through, including:

- a. *Commit*, is an introduction to design problems which is the first step in the design process. In this case, the priority regarding time management is very important.
- b. *State*, after knowing the design problem at the previous stage, understanding the design problem, defining and declaring the design problem will be studied in this process which will then be the beginning of the programming phase.
- c. *Collect*, data is an important component in the design process. The data collected is supporting data for solving problems that have been previously known. The data taken can be in the form of a theoretical review, interviews with several parties concerned, and field surveys.
- d. *Analyze*, this process is the stage where field data and theory reviews are analyzed or reviewed in order to get answers to predetermined problems. At this stage the authors produce simple visual sketches such as Bubble Diagrams and Matrix Diagrams from the design plan by developing them from the conceptual diagram to the final design plan which will then continue until the implementation step.
- e. *Ideate*, this stage will generate as many ideas or alternatives as possible that are useful as solutions to problems to achieve project goals, namely a soothing atmosphere for the patient.
- f. *Choose*, at this stage the writer chooses the most appropriate or best option by looking back at how the selected concept fits the needs and design goals.
- g. *Implement*, this stage communicates ideas through 2D and 3D presentation forms. Software for 2D using AutoCAD, and 3D using Sketchup with manual rendering and mix media.
- h. *Evaluate*, is a process of critical assessment of what has been achieved to see if it actually resolves the problems that have been determined. In addition, to see what is controlled or gained from experience and what is the influence or result of the design activity. This stage is also part of the refinement of the design process used and available to achieve closure on a problem.

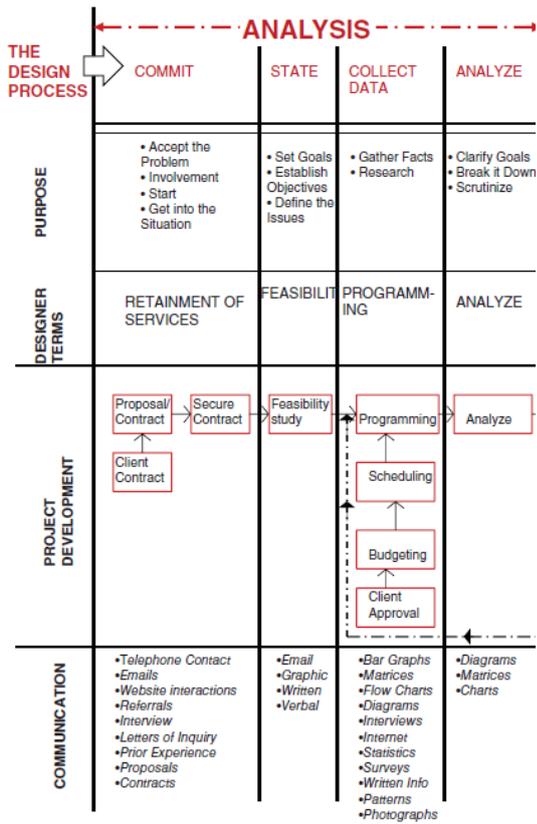


Figure 1 Analysis Stage of Design Process (Source: Interior Designing, Rosemary Kilmer, 2014)

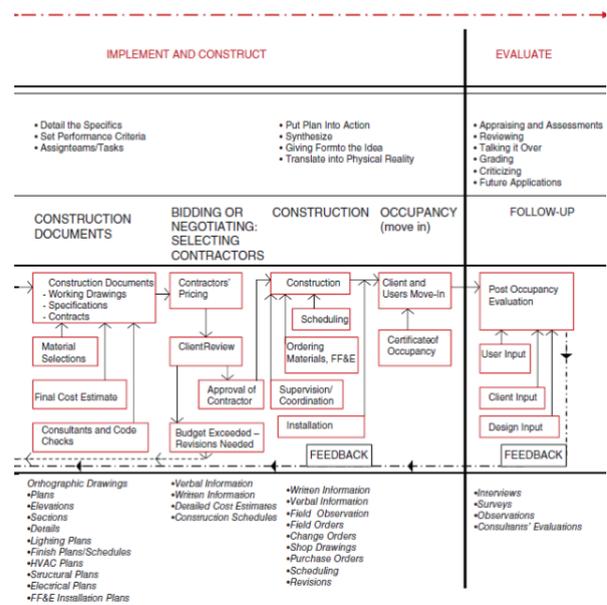


Figure 3 Synthesis Stage of Design Process (Source: Interior Designing, Rosemary Kilmer, 2014)

### 3. RESULT AND DISCUSSION

The design of this chemotherapy unit takes the concept of natural themes, namely meditative, warm, and calm in order to maintain patient calm. The concept of the theme is inspired by the atmosphere of calm hills with cool temperatures.



Figure 4 Reference of Nature Images (Source: Granny54, via Freshfarmhouse.tumblr.com)

The nature depicted in Figure 4 inspired the design of the chemotherapy unit as a whole. The photo shows a vast

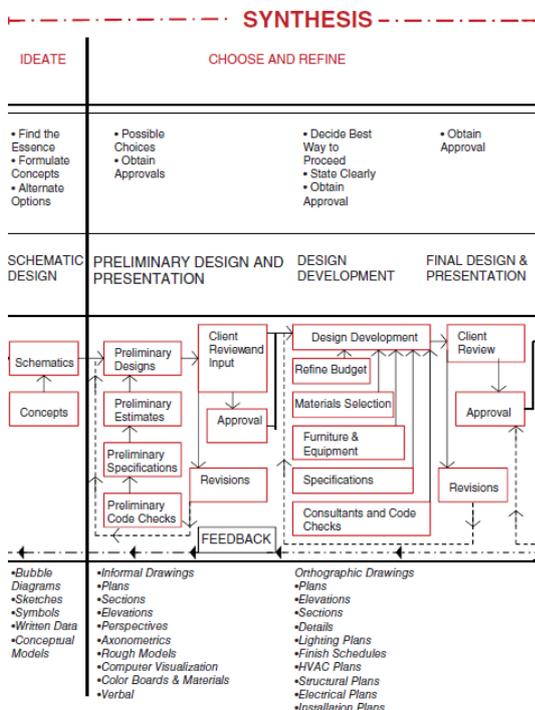


Figure 2 Synthesis Stage of Design Process (Source: Interior Designing, Rosemary Kilmer, 2014)

meadow that allows one to do whatever activity he/she wants. This describes the patient's freedom to do activities even with limited energy. This broad grass also symbolizes openness in the design of the chemotherapy unit. This openness is addressed to patients who are receiving treatment and information about the treatment to be undertaken.

Figure 4 also depicts the cool to warm atmosphere that the chemotherapy unit intends to produce. This will be realized in the ease where patients can see and interact with other patients and nurses who are in the chemotherapy unit.

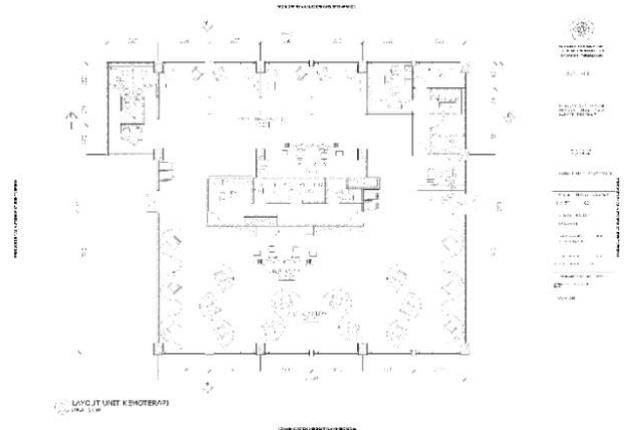
The concept of style taken for the design of the chemotherapy unit is contemporary with the dominance of curved lines that will be applied to the elements of walls, ceilings, and floors.



**Figure 5** Reference of Contemporary Style  
(Source: Robarts Interiors and Architecture, via Architizer.com)

The chemotherapy unit is intended for patients with stages 1 and 2 where the patient's physical condition is still good enough to do light activities but still requires a wheelchair to walk. The method of treatment carried out in this chemotherapy unit is through an infusion. This area is divided into a receptionist, chemotherapy area 1, nurse station 1, chemotherapy area 2, nurse station 2, staff room, and service area.

Chemotherapy area 1 is an area where the patient cannot be accompanied by family or relatives, while chemotherapy area 2 is an area where the patient can be accompanied by 1 family or relative. Each field has a nurse room for nurses to monitor patient activities and treatment.



**Figure 6** Chemotherapy Unit Layout  
(Source: Authors' Documents)

This area difference is applied on the basis that the healing environment approach has social and psychological factors that have an important role in helping the patient's psychological state. Social and psychological factors are one of the concerns in the design of the chemotherapy unit. These factors include (1) Feeling in Control; (2) Privacy; (3) Access to Information.

A simple way to make the patient feel in control is to provide the opportunity for the patient to choose freely in the setting of the care and recovery environment, care, and timing of activities. In this design, the chemotherapy unit allows the patient to choose to do treatment in chemotherapy area 1 or chemotherapy area 2.

The difference between the two areas is in the different chemotherapy chair layouts. Privacy which is included in the social and psychological factors previously described is applied to 2 areas of chemotherapy in the form of furniture and bulkhead layouts.

Patients in chemotherapy area 1 get a more private area where there is a partition equipped with a curtain so that it can be closed if the patient doesn't want to be disturbed but can still be seen by the nurse. In addition, the inclined direction of the chemotherapy chair allows the patient to communicate with other patients next to him so that the chemotherapy 1 area is more flexible for patients who want to do activities while undergoing treatment.



**Figure 7** Chemotherapy Area 1  
(Source: Authors' Documents)

Chemotherapy area 2 allows the patient to be accompanied by a maximum of 1 family or relative. This area is semi-private with a partition between rooms. This partition is designed using a window film that is customized with a serene mountain view image with a bit of transparency so that the patient can see the room next to it. This is in line with one aspect of the healing environment, namely the aspect of the senses of sight, where the scenery can make the eyes relax. This area is equipped with TV facilities for entertainment for patients and their accompanying family or relatives.



**Figure 8** Reference for Window Film  
(Source: Edangshun, via etsy.com)



**Figure 9** Chemotherapy Area 2  
(Source: Authors' Documents)

Another aspect of the healing environment is the psychological aspect that can generate positive suggestions for the patient's psychology. This aspect is realized by providing interactive wall facilities for patients who are undergoing treatment. An interactive wall is applied in the form of an interactive e-board which is next to the nurse station area 2. This interactive e-board allows the patient to write or draw freely according to the patient's wishes. In

addition, this interactive e-board is connected to the computer in the staff room so that the results of the patient's writing or drawing can be saved and printed to be displayed in the message board area that has been provided. With this interactive e-board, doctors and nurses can analyze the patient's psychological condition from the patient's writing or drawing. This can help doctors and nurses to provide treatment not only through drugs but through the psychological side of the patient so that they can get the maximum healing treatment.



**Figure 10** Interactive E-Board  
(Source: Author Documents)

According to Marysa [8], color has a strong influence on human mood and emotions, making the atmosphere hot or cold, provocative or sympathetic, exciting or calming, which in turn is a sensation. The color used for the chemotherapy unit is dominated by green, where this color has very strong healing power because it can balance and stabilize the body's energy and stimulate healing according to Herdyanti [6]. Green is combined with brown which creates a natural atmosphere that is applied to interior elements. The choice of color is in line with the aspect of the healing environment, namely the aspect of the sense of sight.



**Figure 11** Chemotherapy Area 1  
(Source: Author Documents)

Based on the aspect of healing environment, namely the aspect of the sense of touch, where something that is not sharp, smooth, and soft will provide comfort and reduce the effects of stress for the patient which leads to the choice of the dominant form used. In line with the defined style concept, curved and circular shapes dominate the design of

the chemotherapy unit where this shape symbolizes the impression of protection.

#### 4. CONCLUSIONS

Patient's psychological problems caused by chemotherapy treatment are one of the concentrations when designing the chemotherapy unit design. The healing environment approach that has been applied has been developed by thinking about aspects of the healing environment, namely the natural aspects where green and brown colours create a natural atmosphere in the chemotherapy unit, the psychological aspects where the provision of an interactive wall in the form of an interactive e-board which frees patients to be creative through text or drawing that can also help doctors and nurses to further understand the patient's psychological condition, and the five-sensory aspects where the dominance of shapes and colour choices represent the sense of sight and sense of touch.

This study has the advantage that this chemotherapy unit can produce an interactive wall area which is rarely applied to chemotherapy units, especially chemotherapy units for adults. The deficiency of this study is the lack of detail in the resulting design due to the limitations that the authors have. Therefore, the authors hope for further research to be able to study more details of the related design in order to produce a better design.

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