Healing spaces: exploring therapeutic concept for breast cancer clinic

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Abstract. The psychosocial effects of breast cancer patients have a prevalence of depression to 46%. This condition will have an impact on the psychological aspects of the sufferer, namely distress which will affect their quality of life. General Design Guidance in Health Building Notes explains the need to consider an environment that can have an impact on the recovery of patients and medical members, and provide a quality environment that provides positive care for patient care and vice versa. The aim of this study was the design of the main breast cancer clinic that applied the therapeutic environment in helping to cure this medical and psychological illness based on Health Building Records, as well as descriptive and qualitative protection. The results of the study were the space requirements that help patients to get medical assistance to improve the quality of life for cancer patients.

Keywords: Therapeutic, breast cancer, clinic

1. Introduction
UN Habitat (United Nations Resettlement Program) state the quality of life is important to be improved, as is the formulation of a better environment for human health and well-being that can create a human-developed environment. This is interesting with discussion in one of the problems, namely Human Settlements that are Environmentally Sustainable, Healthly and Liveable. Quality of life consists of four dimensions, namely physical, psychological, functional and social well-being. One form of decreased quality of life more experienced by cancer patients is a decrease in psychological well-being. Psychological well-being is a picture of an individual's psychological health based on fulfilling the criteria for that individual's positive psychological function (positive psychological function) such as self-acceptance, positive relationships with others, independence, environmental mastery, life goals, and personal growth [1]. The influence of psychological factors on the quality of life of cancer patients needed a support between medical and psychological.

In general, people affected by cancer will experience stress and anxiety. Based on The Medical Journal of Australia in 2012, depressive disorders occur in cancer patients with a prevalence of major depression around 10-25%. Side effects caused by chemotherapy are physiology which includes nausea, diarrhea, constipation, thrush, fatigue, infertility and psychological effects which include stress, depression, trauma and anxiety [2]. Based on research on psychosocial effects in cancer patients, breast cancer has a prevalence of depression of up to 46%. [3] Cancer is the number 2 cause of death in the world by 13% after cardiovascular disease (heart and blood vessel disease). In 2018,
The total number of new cancer cases in Indonesia was 348,809 cases and the number of cancer deaths was 207,210 people [4]. Of this amount, it can be estimated that 59% of the total number of cancer patients died. Data on the number of prevalence (5 years) of cancer cases will reach 775,120 cases. Of the various types of cancer, the highest cancers in Indonesia in women are breast cancer and cervical cancer, while in men are lung cancer and colorectal cancer [5].

From the number of new cases of breast cancer (58,256 cases) and deaths from breast cancer (22,692 cases) in Indonesia according to Goblocan 2018, then 39% of breast cancer sufferers in Indonesia in 2018 died. Based on DKI Jakarta Provincial Health Profile data for 2017, while the average number of outpatient visits to the Dharmais Hospital is 800-900 per day, of which 300 are radiotherapy services. So that the handling of breast cancer is not focused, considering the need for handling other types of cancer. There is no cancer medical service in Indonesia that has an environment that supports psychological healing (distress and anxiety) of cancer patients, especially in most cancer patients, namely breast cancer. Therefore, in dealing with patients / sufferers of breast cancer which is increasing in number, it needs medical and psychological services.

Research shows that the influence of nature can have a positive influence on emotional states, physiological activities and provide ongoing changes for the better [6]. A quote in the 2014 Health Building Note on the General Design Guidance for Healthcare Buildings also explains that the need to create a healing environment that can have an impact on the healing of patients and medical members and provide a good quality environment has a positive impact on patient care and vice versa [7]. So that the design of the Main Clinic for Breast Cancer will apply the Therapeutic Environment as a healing environment to help cure breast cancer patients psychologically, not just medically / physically. The level of health care services for breast cancer care clinics is the main clinic (specialist). The building of this breast cancer treatment clinic functioned as a supporter of breast cancer patient services in Dharmais Hospital (Type A Hospital) where breast cancer patients can take care of this clinic before going directly to Dharmais Hospital, due to the lack of Dharmais Hospital facilities as previously described. Therefore site selection will consider access to and from the Dharmais Hospital which is also adjusted to the Government's 2030 Spatial Regulation with the permitted building, the Clinic.

The purpose of this paper is to find out how the design strategy or elements of architectural design that can be applied in the design of breast cancer clinic buildings related to aspects of the application of therapeutic environment in the treatment or care room for breast cancer patient in order to reduce stress and depression level on breast cancer patient.

2. Theoretical Considerations
The studies conducted in this study were regarding Clinics, Breast Cancer, Cancer Care / Treatment and Therapeutic Environment literature studies.

Clinic is a health service facility that provides individual health services that provide basic and / or specialist medical services [8]. Minimum facilities available in the clinic, consisting of: registration room/waiting room; consultation room; administration room; medicine rooms and consumables for clinics that carry out pharmaceutical services; action room; nursery room and other spaces according to service needs. According to Indonesian Ministry of Health, Breast Cancer is a malignancy in breast tissue that can originate from the ductal epithelium or lobules.

Kavanagh describes therapeutic Environment as a healthy environment that prioritizes and provides a safe and comfortable environment for everyone [9]. Therapeutic Environment according to Gesler (1996) is the character in which the physical and building environment, social conditions and human perception are combined to produce an atmosphere conducive to healing [10]. Furthermore, there are four key factors of therapeutic environment that applied in the design of the health care environment, can improve the quality of patients’ life [11].

3. Method
The method in this study is qualitative and descriptive. The application of design method based on provisions or standards for space requirements in a cancer treatment building in the Health Building
Note on Cancer Treatment Facilities [12]. It refers to the Health Building Note regarding the General Design Guidance for Healthcare Buildings in 2014 [7].

The data is obtained through observation, comparative study and literatures (articles, books, journals and government regulations). Field data collection was carried out directly at the site on Jl. Abdul Muis, Petojo Selatan, Gambir, Central Jakarta where direct observation of the site was carried out regarding environmental conditions, site conditions, circulation, noise and lighting which were the basis for consideration in applying Therapeutic Environments in the design. Comparative studies are carried out by comparing building functions of the same type, such as the University of Arizona Cancer Center; Kathleen Kilgour Center and Skandion Clinic.

The analysis was carried out closely related to the aspects needed in designing breast cancer treatment clinics as space analysis, building users and site analysis. Therapeutic environments analysis is carried out based on four keys of therapeutic environmental factors delivered by Smith and Watkins as Reduce/Eliminate Environmental Stressors, Provide Positive Distractions, Enable Social Support and Give a Sense of Control [11].

4. Results and Discussion

Therapeutic concept on breast cancer clinic discusses on two main analysis as spatial analysis and therapeutic environment. On spatial analysis discusses the spaces and facilities provided, regarding to the standard for breast cancer clinic building and the zoning. The application of a therapeutic environment and facilities based on the health building notes was analyzed and applied to the healing spaces of the clinic.

4.1. Spatial Analysis

The main clinical cancer services mainly serve breast cancer patients in early stages (stages 1 and 2) only. For this purposes this clinic provides one-day care services (7-8 hours’ outpatient / treatment) and also treatment room facilities with bed.

According to the Health Building Note 02-01: Cancer Treatment Facilities and the Breast Cancer Management Guidelines from the Ministry of Health of the Republic of Indonesia [12][13][14], for treating breast cancer patients with stadium 1 and 2, there are certain rooms must provide in this clinic. For diagnostic facilities they must provide mammography and MRI rooms. For treatment facilities they provide chemotherapy and radiotherapy rooms and for physical examination – they provide doctor rooms. Based on this treatment facilities, space requirements are obtained from user analysis and the required rooms are grouped in 5 zones as clinical, public, staff, family and service zone provided on table 1.

| Rooms                                      | Zone     |
|--------------------------------------------|----------|
| Diagnostic – x-ray mammography imaging     |          |
| Diagnostic – Magnetic Resonance Imaging (MRI)|         |
| Chemotherapy (seated)                      | Clinic   |
| Chemotherapy (bed)                         |          |
| Radiotherapy                               |          |
| Oncologist                                 |          |
| Public area                                | Public   |
| Staff area                                 | Staff    |
| Service area                               | Service  |

4.2. Therapeutic Environments Analysis

Facilities and rooms were adapted to four keys of therapeutic environmental factors according to Smith & Watkins (2016) as Reduce/Eliminate Environmental Stressors, Provide Positive Distractions, Enable Social Support and Give a Sense of Control.

In the common area for public user such as lobby, to have a therapeutic environment, positive distractions, reduce or eliminate environmental stressors, and enable social support. the room must
providing a positive experience in the environment by combining natural light, natural elements, calm sound and beauty (sense of beauty). The lobby area uses natural lighting, which uses outside light with voids. In this lobby area there is also a reception desk and elevator at the entrance area, this is so that visitors can immediately find out their destination while in or entering the building. There is also a waiting or sitting area that can support building users to interact with each other. (Fig.1)

Figure 1. Lobby and common area

Special condition applied to the MRI and radiotherapy room because of the limitation of the equipment. It cannot be exposed to direct sunlight. To provide positive distractions and reduce environmental stressors, an interior element with a natural theme needs to be added to replace the original natural environment. (Figure 2 and 3)

Figure 2. MRI room

Figure 3. MRI room

Based on the key factor as provide positive distraction as views of nature, the chemotherapy room needs to get natural lighting which is in accordance with the activities of the chemotherapy which is carried out for 7-8 hours in 1 treatment.
The chemotherapy room equipped with window to have visual access to nature, even the seat arrangement of chemotherapy patients is also oriented to the window; to get a view to nature in privacy.

![Chemotherapy room illustration with orientation to window](image)

**Figure 4.** Chemotherapy room illustration with orientation to window

5. **Conclusion**

Breast cancer clinic mainly have three facilities as diagnostic, treatments and physical examination and provide at least 5 rooms on clinic zone such as Mammography and MRI, Chemotherapy, Radiotherapy and doctor room. Therapeutic environment concept applied to create healing spaces, all lead to provides positive distraction with visual access to the natural environment. It distinguished in three different basic conditions as lobby and common area which supported by enable social support, treatment facilities such as chemotherapy room which supported by give a sense of control and diagnostic facilities with a special attention on artificial natural environment.

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