



The effect of nature as positive distractibility on the Healing Process of Patients with cancer in therapeutic settings

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ABSTRACT

Background: Environmental design has a positive effect on patient health. The aim of this study was to examine the effect of nature on positive distraction on the Healing Process of Patients with Cancer.

Method: This research is a descriptive-correlational study which conducted on 80 cancer patients in an educational center with two different outlooks (natural view and no natural view) in Hamadan, Iran from March to May 2017. Patients were selected by convenience sampling method based on inclusion criteria. Two kinds of questionnaires including State-Trait Anxiety Inventory (STAI) and visual analog scale (VAS) about pain were distributed among who view natural landscapes (nature group) and who don't view natural landscapes (no nature group). Two groups compared in terms of pain and anxiety. Statistical analysis was done by SPSS version 22.

Results: Findings of the study indicate that admitted patients viewing natural scenery had less anxiety ($P < 0.001$) and pain ($P = 0.02$) than admitted patients viewing no natural scenes.

Conclusion: Natural scenes caused to reduce the pain and anxiety, so using this healing power of nature leads to positive distraction.

1. Introduction

The basis of healing ideology is that physical and psychological improvements of patients are related together. In recent decades, several studies have been conducted on the impact of environmental designs on patient health. These studies have elucidated the association between the physical aspects of environment and the patients' mental dimensions and improvement [24]. The environment where the patient receives medical care should reduce the patient's stress and pain and help the betterment of the patients [17,7].

1.1. Architectural views about the effect of nature on patients' healing

Ulrich considers green nature as the reason for the feeling of well-being and reduces anxiety. Furthermore, Ulrich believes that natural landscapes increase the positive factors and reduce the fear factors [30]. Also, patients who had sight of natural landscapes and trees, during the hospitalization period after a small surgery, had shorter postoperative hospitalization in the hospital and lower complications after surgery than did those patients in similar rooms with windows

facing a brick wall [29].

According to Kiue, the number of green plants in the joint neighborhood spaces had a great effect on reducing the psychological fatigue of the residents. Residents near to nature are more likely to be capable of coping with the major issues of their lives. Such residents feel more hopeful and less helpless about their own issues [16].

Kaplan believes that people's satisfaction is heavily influenced by the availability of nature. Less helplessness and more patience, higher enthusiasm, satisfaction with life and health are considered to be the positive signs of observing natural landscapes. In contrast, observing no natural sceneries and elements results in lower satisfaction [14].

According to Moore, the role of farmland and trees are very significant for the prisoners who have to look at the prison yard. Prisoners who look at farmland and trees, instead of the prison yard, need 0.24 less medical consideration [25]. Muslim countries have also benefited from the impact of nature on the healing of patients. Concerning the history of the use of nature in medical environments in the Islamic empire, the Mansour Hospital in 1284 in Cairo can be mentioned that had attractive natural spaces. There were cool springs in the hospital. The hospital had a large library, in which six librarians worked.

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Fig. 1. The view of rooms to the garden in the spring.

According to Guthrie, a historian, there was a clinic for cleaning wounds and a big yard for planting medicinal plants at Mansour Hospital. Fifty reciters would read Qur'an all day, and at night, a soft music would play to make bad-sleepers entertained [13].

1.1.1. Views about relationship between nature and cancer

In 2012 there were 14 million cases of cancer experienced around the world it is and expected the number will increase to high 20 million by 2035 [4]. In the history of health promotion models and health initiatives, nature as an essential component has been had a great role. Nature-based health promotion supports activities to enable health through relation to nature [29] and It can be said that recent studies focus on health promotion widely [20,2,1].

In cancer, a person is considered to be a survivor from the time of diagnosis until the end of life. In the scientific literature, an encouraging picture of the relationship between nature and well-being for cancer survivors is emerging that shed light on several nature-based interventions and their benefits [26].

Studies indicate that regular relationship with nature is healing in decreasing fatigue in women cured for breast cancer. In Cimprich and Rona's examination the intervention group - with 120 min of exposure to nature per week-improved as compared to no intervention group. The nature intervention demonstrated a significant effect even after controlling for the effects of Demographic variables like age, education [3] and etc.

It is noted in the Martiniuk's 2003 review that it should be focused on expanding the camping programs and relation to nature for child survivors [26]. There is an extensive body of literature exploring the healing effect of nature, in camp on childhood cancer survivors [23].

In the study of English et al. the experiences of therapeutic landscapes in the everyday lives of 14 breast cancer survivors explored. The result was that the therapeutic landscapes have a significant effect in reducing anxiety and improving quality of life [8].

1.1.2. The effect of nature on positive distraction

According to previous studies, for example, the results of sound broadcast and the observation of natural views, there is a strong relationship between healing and positive distraction during injuries. Moreover, positive distraction leads to anxiety reduction and pain reduction [5]. One of the ways to create positive distractions in the therapeutic environment is to display natural landscapes or natural sounds through the sound player devices. Thus, these two factors will largely account for the healing amount measurement in the studies [12]. Also, findings from studies of mixed clinical experiences have shown positive associations between nature exposure and reduced strength of pain medication [19].

Now, what is the effect of nature on patients with sensitive and chronic illness in the hospital? What is the healing effect of live nature and behind the hospital window on patients with cancer? This is the research question of this study.

1.1.3. Importance for conducting the research: focusing on gaps

As it was mentioned in the introduction, there are architectural views about the positive effect of nature on patients with an injury.

Also, there are some pieces of evidence about the healing role of live nature-not behind the window-on reducing anxiety in cancer patients. Besides, there are some researches about the relationship between sound broadcast or natural views and positive distraction.

But now the question is: what is the effect of nature behind the hospital window on patients with cancer who are not in the relationship with vivid nature? This research determined cancer patients' engagement with nature and its relevance in their reduction of pain and anxiety.

In this study, the relationship between landscape and health recovery was investigated. The focus is on the positive relationship between health and landscapes. Thus, the purpose of this study is to assess the documentation of the therapeutic aspects of the natural scenery on the admitted patients in hospitals [21]. The data of the study were collected through observation, and knowing the patients' attitudes through administering a questionnaire.

2. Methods

This research is a descriptive-correlational study which conducted in Shahid Beheshti Medical Educational center in Hamadan, Iran from March to May 2017.

Our hypothesis is: positive distraction can be made by the healing effect of vivid nature and behind the hospital window on patients with cancer. Quicker healing of hospitalized patients by viewing natural landscapes compared with admitted patients to the same hospital but with sights such as streets, buildings, and in general no natural landscapes, was tested by administering the pain and anxiety questionnaires. The intended hospital had two kinds of perspectives with regard to the outside sceneries. One side facing the streets and urban landscapes is nature-free, and another side facing the natural scenery of a lush hill with vegetation including green trees (see also Fig. 1).

It is important to consider that this linear form hospital is placed along the street, and has one face to the street and another face to the backyard garden. Actually, two kinds of views are completely separated, so patients facing the street view can't see the garden view at all. With the purpose of using the maximum effect of nature, observation and investigation of the patients were conducted in the spring season.

The mean admitted hospitalized patients in the oncology department during 3 months included 100 patients. Based on Cochran's formula (Hazarika) [11], the sample size was 80 patients ($p = 0.5$, $q = 0.5$; $e = 0.05$; 95% confidence level; $z = 1.96$) ($n = n_0/1 + (n_0 - 1)/N$, $N = 100$. So, $n = 80$).

The patients with the diagnosis of cancer (grade 1 to 4), age between 18 and 85 years with the consciousness of reading and writing literacy, hemodynamic stability and no use of anti-anxiety and analgesic drugs with 3–7 days of hospitalization duration were selected by convenience sampling method.

The questionnaire administered to the patients was the State-Trait Anxiety Inventory (STAI). The State-Trait Anxiety Inventory (STAI) consists of separate self-assessment scales, to measure trait and state anxiety. STAI most popular version has 20 items for assessing trait anxiety and 20 items for state anxiety. This inventory is self-report that is completed by the person himself and it's about patients' feelings

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