

Design of gardens in healthcare facilities

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Abstract

The main purpose of this paper is to search in the academic literature to investigate the concept of healing gardens. In the first section of this literature review, different aspects of healing, spiritual healing, mental healing, emotional healing, social healing, and physical healing, will be studied. Then, in the second section, different categories of healing environments, built environments, symbolic environments, social environments, and natural environments, will be explored. In the third section, focusing on the qualities of natural environments, we are going to evaluate the ways in which a garden might contribute to the healing process. In this part, the benefits of viewing a garden and gardening such as reducing stress and anger and fear, changing mood and improving feelings, and providing satisfaction will be explained. In the fourth section, after giving a definition, we will explain a brief history of the development of healing gardens. In the end, the garden in California Pacific Medical Center as a case will be discussed.

Keywords: healing garden, healing process, healthcare, healing environment, gardening, stress reduction, satisfaction, California Pacific Medical Center.

1 Introduction

With the rapid increase of healthcare facilities, an increasing emphasis is being put on the mental aspects of “healing.” The need to reduce stress is becoming more and more a part of our contemporary, fast-paced lives. Additionally, nature, with its perceived healing properties, is seen progressively as a useful means in addressing medical needs. As a result, architects have been employing the concepts of nature as a healer to landscape designs in hospitals since the 18th century. The development of healing gardens, according to their unbelievable effect on the health of patients, is based on architects’ understanding of the concept of healing and the qualities of nature. It seems that more studies are



needed to clarify the relationship between the design of healing gardens and healing of the patients.

2 Healing

The word “heal” derives from an Anglo Saxon word “haelon,” which means wholeness (Gesler [10]). Quinn [32] believes that the reason that healing signifies “wholeness” is that “people are not collections and parts that need to be fixed, but whole bodymindspirits.” The main difference between healing and curing is that curing is what allopathic mainstream medicine has to offer, whereas healing is what you bring to the encounter with disease (Lerner [20]). Healing is a multidimensional process which includes psychological and physical (biological) factors. Psychological factors relate to spiritual, mental, emotional, and social needs (Landis [19]). Gawain [8] explains, “as we follow healing path, giving our attention to each of the levels as the need arises, all aspects gradually become more integrated with one another and it creates a balance and harmony in life.” Thus, a complete study on healing should cover different levels of it and the way that each can contribute to the healing process.

2.1 Spiritual healing

The spiritual aspect of a being is the inner essence, the soul, and the part of the being that exists beyond time and space. It connects human beings with the universal source and the oneness of all life. Developing the awareness of the spiritual level gives people an experience of a feeling of “belonging” in the universe. The lack of connection to the spirit is the root of many of social and cultural ills as well as personal problems. The contact with the spiritual dimension gives people an expanded perspective on their lives as individuals in the society by developing spiritual awareness. One is able to find the inspiration, understanding, and strength that is needed to confront the difficulties and challenges of healing on other levels (Gawain [8]). Because of this strong belief in spiritual aspects, religious healing has been a common way of healing throughout the history.

2.2 Mental healing

The mental aspect of human beings includes their intellect and ability to think and reason. All thoughts, attitudes, beliefs, and values which can cause confusion or bring profound understanding are different aspects of mentality. Developing the mental level allows one to think clearly, remain open-minded, yet discriminate intelligently (Gawain [8]). According to Gawain, the first step in any healing process is acknowledgement and acceptance of what is true in the moment. Nobody can be healed unless he accepts the existence of disease and all negative thoughts and beliefs which are part of the mind (Gawain [8]). Ornish [28] believes that the patient’s own beliefs play an important role in the healing process, and healing process depends strongly on the doctor’s belief upon the medicine and methods, which is using to heal the patient. Everything is



based on a try to change the person's belief system and to make people aware of new possibilities. In this sense, the doctor's job, sometimes, is working on a person's religious or cultural belief system. Lown [22], a psychologist, believes that some patients have been able to overcome their life-threatening illnesses by using the power of the mind such as laughter and positive thinking.

2.3 Emotional healing

Another level in the healing process is working on the emotional aspects of being. This aspect is the ability to experience life deeply to relate to another person and the world on a feeling level. This is the part of human beings which is always seeking meaningful contact and connection with others. Developing the emotional level gives people the opportunity to feel the full range of the human experience and find fulfillment in the relationship with people and the world (Gawain [8]). Rossi [35] believes that positive attitudes and emotions can affect the biochemistry of the body, and can facilitate healing. Another researcher, Fox, believes that a synergy between patient and practitioner can help patient and practitioner to bring the resources (Lown [22]; Fox [7]). Candace Pert [31] in an interview with Bill Moyers explains that moods and attitudes come from the realm of the mind and transform themselves into the physical realm through emotions.

2.4 Social healing

In addition to mental, spiritual, and emotional aspects of healing, Dean Ornish [28], a clinical professor of medicine in an interview with Bill Moyers, adds another concept: psychosocial healing. He believes that psychosocial has to do with the context in which healing occurs. He adds, "an individual does not exist in isolation from everyone and everything else, but exists in the context of a community, family, workplace, religion, and so on" (Ornish [28]).

2.5 Physical healing

The physical aspect of human beings is their bodies, which includes the ability to survive and thrive in the material world. Developing the physical level of the being involves learning to take good care of the body and to enjoy it and to develop the skills to live comfortably and effectively in the world (Gawain [8]). Almost all researchers agree that healing body is only possible if the patients want to get well and if they coordinate their thoughts, spirituality, emotions, and social support in an effort to get better, and medicine, as a complementary, can act as only an effort to a physical cure (Gesler [10]). This relationship between Physical and psychological aspects of healing is described by Delaney and James [3], who believes that the "healing mechanism includes a series of chemical reactions in the patient's body, such as replacing cells, adjusting the blood pressure, turning hormone and immune system to respond to one's thoughts, feelings, and physical activities" (Delaney and James [3]).



3 Healing environments

Any discussion about healing gardens requires precise definitions for related terms such as healing and therapeutic environments. "Healing environments" are defined as environments which have achieved a healing sense of place (Gesler [10]). This definition is different from the common definitions for therapeutic environments. Environment refers to separate and identifiable settings which are not so readily therapeutic. The term "therapeutic environments" has been used for two different environments; environments in which therapy occurs and that encapsulate therapeutic processes and environments make a direct contribution to the healing and therapeutic processes (Jones [14]). This definition for a therapeutic environment is different from the first one, which means an identifiable place where people go to receive therapy (Canter [2]). According to Gesler [10], healing environments could be divided into four categories: built, symbolic, social, and natural environments.

3.1 Built environments

Environmental psychologists such as Bagly [1], Holahan [12], and Reizenstein [33] who have worked on this subject believe that people's experiences from their surrounding affect their needs, emotions, and actions. In a similar study, Spencer (1986) suggested that building design has a direct affect on human behavior. Hospitals, as one kind of built environment, have been always used to enhance the healing process. Florence Nightingale was one of the first persons who claimed that the characteristics of hospitals such as low-ward density, circulation of fresh air, adequate light, good drainage, clean laundry rooms and kitchens, and accommodations for nursing staff, directly affect patients' therapy (Gesler [10]). Later studies about hospital design showed its huge influence on the health and therapy process (Canter [2]).

3.2 Symbolic environments

Contrast to natural and built environments, symbolic environments are neither tangible nor accessible to the five senses (Gesler [10]). Evans [5] believes that symbolic mediators act between stimulus and response when a person reacts to an environment. Similarly, Meinig [25] believes that people "regard all landscapes as symbolic, as expressions of cultural values, social behavior, and individual actions worked upon particular localities over a span of time" (Meinig [25]; Meining [26]). Arthur Kleinman [18] believes that "healing occurs along a symbolic pathway of words, feelings, values, expectations, beliefs, and the like which connect events and forms with affective and psychological processes." (Kleinman [18]) These abstract symbol provide meaning to healing situations, for example, "rituals often contain symbolic language or actions that celebrate, maintain and renew one's world as well as deal with its danger." (Helman [11])

3.3 Social environments

Healing is a social activity which involves interactions among people who have different roles within the society. The history of some hospitals reveals the



importance of the relationship between healer and healed, feelings of mutual respect and trust (Gesler [10]). The concept of “therapeutic community,” which began during the World War II, was based on a good social relationship between people. It played an essential role in providing healing environments (Filstead [6]; Rossi [35]). The main idea behind the concept of the therapeutic community is that breaking down hierarchies and dimensions between patients and staff and developing full participation within a community atmosphere affect healing process (Meining [26]).

3.4 Natural environments

Natural environment is considered one of the most important sources of healing in the history. Nowadays, many people get away from routine life by spending time in nature to attain physical, mental, and spiritual healing. Studies by Marx [24] and Williams [40] show the restorative powers of rural life as opposed to stressful cities. In this paper, we will discuss the healing properties of gardens as one kind of natural environment.

4 The contribution of gardens to the healing process

Qualities inherent in nature such as sunshine, clean air, natural water, and green vegetation, are generally considered to have a soothing effect on people. Fredrick Law Olmsted, recognized as the father of landscape architecture, was the first known scholar that advocated the natural experience as an effective restorative measure for the body, soul, and mind (Olmsted [27]; Honeyman [13]). While some external benefits of greenery such as improving air quality have been proven through several research studies, recent research has shown the significant impact of greenery on the levels of stress, fear, anger, and feelings.

4.1 Reducing stress

Stress affects virtually every vital organ. In times of stress or perceived danger, the endocrine system goes into overdrive, stimulating the heart muscles and the nervous system. Typical reactions to stress are mental alertness, anxiety, stomach cramps, cold and sweaty palms, and rapid heartbeat. According to psychologist Deepak Chopra, sensory input changes body chemistry within one one-hundredth of a second; therefore, being in a stressful environment automatically accelerates the aging process and promotes disease (Delaney and James [3]). Research studies done after 1973 showed that the presence of natural greenery in a scene has a high correlation with stress reduction (Kaplan [15]; Ulrich [38]; Honeyman [13]; Kaplan and Kaplan [16]; Ulrich [39]). According to Stephen and Rachel Kaplan [16], “vegetation serves as a shock absorber for the human sensory system. It provides an opportunity for rest from the constant mental alertness. Vegetation heals the wounds congested cities inflict on their residents” (Kaplan and Kaplan [16]). Studies by Ulrich show that when people are exposed to plants, their blood pressure lowers, their muscles loosen, their heart rates slow down; and even the way the skin conducts electricity becomes more



characteristic of positive states (Rodale [34]). In another study, Honeyman [13] proved that the exclusion of vegetation in urban areas creates stress and other negative psychological responses.

4.2 Reducing anger and fear

In her thesis about vegetation and stress, Honeyman [13] measured the levels of anger, fear, and positive effects in three groups of people watching three groups of slides: countryside scenes, an urban area with vegetation scenes, and an urban area without vegetation scenes. Final measurements demonstrated that the levels of fear and anger were significantly lower in the countryside and urban area with vegetation groups, and positive affect was significantly lower in the “urban without vegetation” group (Honeyman [13]).

4.3 Changing mood and improving feelings

One of the positive properties of vegetation is its impact of mood changes in people with gardens. Various researchers such as Ulrich, Honeyman, Marcus, and Barnes, have tested the impact of plant life on emotion. In 1973, Ulrich [36] interviewed several shoppers whose home locations gave them a choice between driving to a shopping center on an interstate highway or on another parkway with more scenery and landscaping. Most of the shoppers responded that they preferred the parkway in spite of its much longer driving time because of their opportunity to experience natural beauty. The results of another study by Ulrich [37] showed that patients with vegetation view windows in hospitals recover earlier than patients in rooms with windows looking out at buildings. In her study, Honeyman [13] concluded that the natural element of vegetation plays an important role in the psychological well-being of humans, the inclusion of vegetation in urban areas provides an important psychological benefit for the people experiencing it, and human psychological response is influenced considerably by the absence or presence of vegetation in urban context. In other research, Marcus and Marni [23] interviewed 36 patients in a garden located in a hospital to explore which specific characteristics of gardens helped patients feel better. According to the responses, flowers and colors, openness and views, seasonal change, and greenery were the most important factors in mood changes among patients.

5 Healing garden

5.1 Definition of healing garden

According to *Encyclopedia Britannica*, a garden is a plot of ground where herbs, fruits, flowers, vegetables, or trees are cultivated. (Britannica [4]) “People cultivate gardens either to produce food or for aesthetic reasons- to create pleasant surroundings harmonizing flowers, shrubs, and trees within the landscape. Gardens in the second sense comprise plants, water, natural land formations, and architectural elements” (The Academic American Encyclopedia, 2002, 40). Researchers have different definitions for a healing garden, a



restorative garden, and a therapeutic garden. Ulrich [38] believes that any garden acts as a healing garden. Eckerling (1996) defines the healing garden as “a garden in a healing setting designed to make people feel better.” The goal of a healing garden is to make people feel safe, less stressed, more comfortable, and even invigorated. However, Marcus and Marni [23] write that the healing garden is an outdoor or indoor garden space that is specifically designated as healing garden, a garden that heal. In the October 2001 issue of *Landscape Architecture Magazine*, Clare Cooper Marcus identified seven essential components to creating gardens that heal. They are visibility, sense of security, physiological comfort, opportunities to make choice (seeking privacy or gathering for social support), engagement with nature, familiarity, and unambiguously positive design features. She believes that a garden could be called a healing garden if it possesses one or many of the above characteristics. Framed in this way, the definition is broad and inclusive. Kaufman and Gelarch-Springgs et al. [9] have limited their definition for healing garden, therapeutic garden, and restorative garden to just gardens in health care facilities.

5.2 The history of healing gardens

According to Warner, restorative gardens which acted as the reflection of individual emotions, cultural training, and social support, originated in Persia, Egypt, and the orient (Gelarch-Springgs [9]). The first restorative gardens in Europe started during the Middle Ages, when hospitals and monasteries ministering to the sick, the insane, and the infirm often incorporated an arcaded courtyard where residents could find the degree of shelter, sun, or shade on a human scale (Marcus and Marni [23]). During the 14th and 15th centuries, with plague and crop failure and waves of immigration into burgeoning cities, the role of monastic provision declined in medical care (Gelarch-Springgs [9]). With the decline of monasticism, the significance of restorative gardens declined, and consequently, open spaces attached to hospitals became accidents of local tradition (Gelarch-Springgs [9]). According to the historical texts in the 17th and in 18th centuries, the tradition of designing courtyards in hospitals in England, France, Italy, and Austria continued. During this time, outdoor spaces in hospitals started to emerge along with scientific medicine and Romanticism. The notion that infections were spread by noxious vapors spawned designs that paid attention to hygiene, fresh air, and cross-ventilation. In the 18th and 19th centuries, a new wave of designing landscapes in psychiatric hospitals, whereby gardening and farming became a part of therapeutic regimen, began. With the beginning of the 19th century, pavilion hospitals became the predominant form. In some hospitals, because of a strong belief in the healing benefit of fresh air and sunlight in the recovery process, hospital beds were wheeled out onto sun porches and roofs (Gelarch-Springgs [9]). Gradually, after World War I, garden work entered the arena in rehabilitation hospitals (Marcus 1995). In the 20th century, with higher rates of cancer and AIDS in U.S. cities, the therapeutic effect of the garden was re-discovered. Thus, designing gardens in healthcare facilities gradually became predominant, but none of these gardens were perceived as environments that might contribute to the restoration of health.



5.3 Case Study: California Pacific Medical Center

This section is based on the studies done by Marcus and Barnes in 1995 on the garden campus in California Pacific Medical Center, which is located in San Francisco. Originally designed in 1915, in 1938 this facility started providing rehabilitative services ranging from cardiac and respiratory therapy through physical therapy and vocational counseling. Nowadays, this hospital offers post-acute care and hospice services to AIDS and other chronically ill patients. The plan of the garden includes two glazed shelters, two longer patio areas, and a volleyball/basketball court. This L-shape hospital, located between a residential and commercial neighborhood, has a long balcony in the west side. In this study, the balcony has been considered as part of the garden. The garden, placed on the uphill behind the building, offers an intimate environment to its users; staff, patients, and visitors. (Marcus and Marni [23]) The interviews with six staffs, visitors, and one patient reveal this fact that the garden is acting as a relaxing environment for them. All respondents think that their presence in the garden changes their emotions and increases the degrees of satisfaction and contentment. One of them explains, "you don't know you are in a hospital." Similarly, the staffs believe that the greenery of the garden clearly changes the feeling of patients who have come into the garden from their rooms. Marcus and Marni [23] indicate that in such an atmosphere the quality of life is much more important than other immediate goals of a medical institution. Frequent family picnics in the garden and the intense use by the children and other people have been reported show the function of the garden in a larger scale than the hospitals. The weaknesses of this study are laid in its dependence on the interviews and the selection of respondents. A more developed study would include a larger domain of users and visitors and focus on the objective qualities of the garden considering its functional context.

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