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Healing Garden as a Green Open Space in Hospital

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ABSTRACT

Introduction: Natural environments within healthcare settings have received growing interest for their potential role in supporting health and well-being. Healing gardens are typically green open spaces within hospitals that promote the physical, mental, and emotional rehabilitation of patients, also benefiting the staff and visitors. This paper presents a narrative review pertaining to the theoretical underpinnings, history, and empirical research on the effectiveness of healing gardens in health care settings.
Result: It has been reviewed in recent literature that healing gardens have a huge effect on stress reduction, mood enhancement, improved cognitive functioning, and accelerated physical recovery. Some key design principles, such as access, sensory stimulus, and restorative components, arebanner in maximizing this potential therapy. Healing gardens, therefore, become one of the most cost-effective ways for patient care and staff well-being; however, there might be some little challenges in implementing and maintaining them.
Conclusion: Future research should be directed toward long-term impacts and design innovations that ensure maximum efficacy of these therapeutic spaces. Future work into the healing garden would focus on developing more patient-centered, restorative, and sustainable healing environments that underscore this deep connection between nature and health.

Introduction

In the past years, natural environments have gained emphasis as a factor toward health and well-being (Shanahan et al., 2019; Totaforti, 2018). One such manifestation of this trend is their being integrated into healing gardens within hospitals. These green open spaces are intentionally designed to serve as therapeutic landscapes that support the physical, mental, and emotional recovery of patients, while also providing benefits to hospital staff and visitors (Belčáková & Galbavá, 2018; Kim, 2021; Mahmood, 2018).

Healing gardens are rooted in the concept of biophilia, which states that human beings have an innate love for nature (Totaforti, 2018). This connection to nature is not merely aesthetically beautiful; it is also basic to human health. (Bulakh et al., 2021; Shanahan et al., 2019). The design and implementation of healing gardens in hospitals reflect a holistic approach to

healthcare, one that goes beyond treating symptoms to fostering overall well-being.

According to Shanahan et al. and Totaforti, 2018, healing gardens can be said to be part of the enhanced interest in having patient-centered care incorporated into hospital environments. By creating spaces that promote relaxation, reduce stress, and encourage physical activity, hospitals can enhance the healing process (Chang & Chien, 2017; Iqbal & Abubakar, 2022). Researcher notes that these gardens are particularly striking in that they stand as an antithesis to usually sterile and stressful hospital environments by offering a tranquil sanctuary from the busy activities to patients, families, and healthcare workers.

This narrative review seeks to discuss the complex benefits that healing gardens in hospitals have. This paper is intended to give a review of theoretical underpinnings and history, empirical evidence explaining their efficacy, and basic principles governing designs so that therapeutic potential could be brought out maximally. The review also wants to bring out the challenges in setting up and maintaining such spaces and point toward future directions in research.

As healthcare systems around the world face increasing pressures, the adoption of healing gardens represents an innovative and cost-effective strategy to improve patient care and staff well-being (Iqbal & Abubakar, 2022; Shanahan et al., 2019). By integrating nature into the healing process, hospitals can create environments that support recovery and foster a sense of tranquility and hope (Bulakh et al., 2021).

The next sections of this review examine some of the specific benefits associated with healing gardens, drawing on both qualitative and quantitative studies. It will outline best practice in designing them and note practical considerations when implementing them. This review would seek to make a case for healing gardens as one of the essential components of modern healthcare design and practice.

Methods

The literature used in this review was obtained from several sources such as Google Scholar, SINTA Journal, and Pubmed. The keywords used to conduct literature searches are "Healing Garden" "Therapeutic Garden", "Green Open Space" and "Hospital". The publication of articles/literature is limited to 2018-2024 only. 10 articles were obtained that fit the criteria for further analysis in this literature review.

Results and Discussion

The Concept of Healing Gardens

Healing gardens are outdoor spaces that are thoughtfully designed to promote health and well-being through the direct use of

nature (Kim, 2021). The healing gardens, therefore, do not simply make for beautification; instead, it is an area from the health care environment tailored to support therapy and restoration among patients, staff, and visitors. (Belčáková & Galbavá, 2018; Mahmood, 2018).

Healing gardens have extreme depth in both historical and theoretical contexts. Throughout history, across the various cultures, the gardens were associated with healing and spirituality (Bulakh et al., 2021). The health benefits realized from nature were appreciated by ancient civilizations such as the Egyptians, Greeks, and Romans, who used them in their medical practices and healing sanctuaries. In more recent history, the medieval cloister gardens of Europe served as places of contemplation and healing, often associated with monastic hospitals (Dinu Roman Szabo et al., 2023). These quiet retreats provided a place in which to recover amidst the healing atmosphere of plants and elements of nature.

The theoretical underpinnings of healing gardens are grounded in the principles of biophilia and environmental psychology. The term "biophilia," was coined by biologist E.O (Totaforti, 2018). Wilson, suggests that humans have an innate affinity for nature and natural processes. This connection is believed to enhance our physical and mental well-being (Dinu Roman Szabo et al., 2023). The biophilia hypothesis posits that exposure to natural environments can reduce stress, enhance mood, and improve overall health (Chang & Chien, 2017; Dinu Roman Szabo et al., 2023; Totaforti, 2018).

Theories, usually in environmental psychology, further support the design and actualization of healing gardens, including the Attention Restoration Theory (ART) and Stress Reduction Theory (SRT). ART, proposed by Kaplan, states that fascination and entailments of natural environments help restore depleted cognitive resources by providing an escape from routine stressors. According to SRT, introduced by Ulrich, views of nature can result in large reductions in physiological markers of stress, such as blood pressure and heart rate. (Mahmood, 2018).

Healing gardens can take various forms depending on their specific purpose and the needs of the hospital population (Belčáková & Galbavá, 2018). Common types include:

1. Therapeutic Gardens: These are planned and designed sensitively to support horticultural therapy, physical rehabilitation, occupational, psychiatric, and other forms of therapy. They often include features like raised planting beds, accessible pathways, and spaces for group activities.
2. Restorative Gardens: Restorative gardens are typified as providing restful

experiences and involve elements that create an environment where one feels relaxed and stress-free (Iqbal & Abubakar, 2022). They usually contain the following features: water features, shaded seating areas, and lush, diverse plantings (Dinu Roman Szabo et al., 2023).

3. Rehabilitation Gardens: These are designed and fitted to ensure facilitation of physical recovery. These gardens will include those features that would promote movement and exercise. This includes paths with varying textures, exercise stations, open space for stretching, and mobility exercises (Kim, 2021).
4. Meditation Gardens: These would be those that would further support mindfulness and meditation practices. They typically feature quiet, secluded areas, minimalistic design, and elements that foster a sense of tranquility and contemplation (Dinu Roman Szabo et al., 2023).

Benefits of Healing Gardens

Psychological Benefits

1. Stress Reduction and Mental Health Improvement

Healing gardens have been shown to significantly reduce stress and improve mental health (Cordoza et al., 2018; Mahmood, 2018). The presence of natural elements like plants, water features, and natural light can create a calming environment that helps to alleviate anxiety and depression. Studies have indicated that patients with access to views of nature experience lower levels of stress and anxiety, which can enhance their overall sense of well-being (Chang & Chien, 2017; Iqbal & Abubakar, 2022).

For example, a study by Ulrich (1984) demonstrated that patients recovering from surgery who had a view of trees from their hospital window experienced less postoperative anxiety, required fewer pain medications, and had shorter hospital stays compared to those with a view of a brick wall. Similarly, healthcare workers who take breaks in healing gardens report reduced burnout and improved mental health, as found in the study by Cordoza et al. (2018).

2. Cognitive Restoration

Healing gardens can also support cognitive restoration. According to the ART, natural environments restore reduced cognitive resources through fascination and escape from routine stressors. This can be applicable more specifically to patients who may suffer from cognitive fatigue due to illness or treatment. For health personnel, mental workers who need mental rest from their demanding jobs, the stress reduction can be beneficial for work performance and potentially lower the level of burnout

(Cordoza et al., 2018; Iqbal & Abubakar, 2022; Ulrich et al., 2020).

Physiological Benefits

1. Enhanced Physical Recovery

Healing gardens contribute to faster physical recovery and pain reduction. The natural environment can distract patients from their discomfort, promoting a more positive outlook and reducing the perception of pain (Andriani et al., 2021). Research has shown that patients with access to gardens or natural views recover more quickly and require fewer analgesics compared to those without such access (Cordoza et al., 2018).

In a study by Park and Mattson (2009), surgical patients with access to a garden required fewer pain medications and had shorter hospital stays compared to those without garden access. The presence of plants, water features, and other natural elements can create a soothing atmosphere that enhances the healing process (Dinu Roman Szabo et al., 2023).

2. Improved Physiological Functioning

Exposure to natural settings has been related to reduced physiological functioning, which includes lower blood pressure, reduced heart rate, and enhanced immune function (Dinu Roman Szabo et al., 2023). These benefits are particularly important for patients in hospitals, as they can support overall health and recovery.

Social Benefits

1. Enhanced Social Support

Healing gardens provide a welcoming environment that encourages social interaction and support (Kim, 2021). These spaces can facilitate informal gatherings and conversations among patients, families, and healthcare workers, helping to reduce feelings of isolation and promote a sense of community. Social support is a critical component of emotional health and can significantly enhance the recovery process. Belčáková et al., n.d.(2018) propose that growing herbs helps patients develop management and responsibility skills while fostering an interest in the natural environment. These activities example can enhance social skills and team communication. It might also reduce their stress during treatment and make them feel more effective and successful in whatever they do.

Healing gardens are places of calmness and peace for visiting family members: a place where they can restore themselves in calmness. This can improve their emotional state, making them better able to support their loved ones during the hospital stay.

2. Community Building

Healing gardens can also serve as community-building spaces within the hospital. They offer a neutral and aesthetically pleasing environment where patients, visitors, and staff can come

together, fostering a sense of connection and shared experience (Bulakh et al., 2021; Kim, 2021). This sense of community can be particularly important in large hospital settings where individuals may feel isolated.

Environmental Benefits

1. Improved Environmental Quality

Healing gardens are associated with improved environmental quality, including better air, decreased urban heat island effects, and increased biodiversity. Plants and trees can purify, provide shade, and create habitat for a great number of species, enhancing thereby the healthiness and sustainability of the hospital setting. (Andriani et al., 2021).

2. Sustainable Healthcare Practices

The integration of healing gardens into health-care facilities is part of a broader agenda of sustainability and public health. Green spaces in hospitals can decrease energy consumption through natural cooling and insulation, according to Andriani et al., 2021, and Bulakh et al., 2021. They could also serve as learning platforms to teach patients, staff, and visitors about caring for the environment.

Design Considerations for Healing Gardens

Designers should collaborate with healthcare professionals, landscape architects, and the hospital community to create spaces that meet the specific needs of users (Mahmood, 2018). The involvement of patients and staff in the design process can ensure that the garden addresses their preferences and requirements. Healing gardens are distinguished by several key characteristics that set them apart from other types of gardens (Dinu Roman Szabo et al., 2023). These include:

A*ccessibility*

1. Universal Design Principles

Healing gardens must be accessible to all users, including those with mobility impairments (Belčáková & Galbavá, 2018; Kim, 2021). It should allow for the incorporation of universal design principles so that everyone, regardless of physical ability, can use and enjoy it. This would include wide, smooth pathways; ramps rather than steps or stairs in any location where elevation needs to be traversed; and seating areas at different heights.

2. Wayfinding and Signage

Clear wayfinding and signage are vital for the easy movement of the user across the garden. The signage should, therefore, be intuitive and include visual, tactile, and auditory cues to suit different needs. The paths should also be well-indicated, thus easy to follow, hence no confusion or frustration. (Dinu Roman Szabo et al., 2023).

Sensory Engagement

1. Multisensory Experience

A healing garden should engage all the senses to create a rich, immersive experience. This can be achieved through the careful selection of plants and features that provide visual, auditory, olfactory, tactile, and even gustatory stimuli (Andriani et al., 2021; Belčáková & Galbavá, 2018; Dinu Roman Szabo et al., 2023).

- Visual: Plants can be very stimulating to visual equivalency with diverse plantings of color, shape, and texture. This should also consider garden changes during seasons for visual interest throughout the year.
- Auditory: It creates audio features, which can include soft, gentle sounds of water in motion created by fountains or streams; wind chimes or rustling leaves also provide sounds that enhance the audio experience.
- Olfactory: Fragrant plants, such as lavender, rosemary, and roses, can provide pleasant and therapeutic scents.
- Tactile: Plants of varying textures—soft moss, rough bark—are stimuli to the sense of touch. Paths with varied textures can also heighten tactile stimulation.
- Gustatory: Edible plants such as herbs, vegetables, and fruits will create the possibility of taste and make picking and tasting interactive experiences.

Restorative Elements

1. Natural Elements

Elements of nature, such as water, plant, rocks and soil, give significant enhancement in the restorative property of the garden'. Water features also provide stimuli of vision and hearing, besides imparting a calming and soothing effect (Andriani et al., 2021; Belčáková & Galbavá, 2018; Dinu Roman Szabo et al., 2023).

2. Shaded Areas

Providing shaded areas is crucial for comfort and usability, especially in hot climates. Shade can be provided by trees, pergolas, or shade sails. These areas offer a respite from the sun and create comfortable spots for relaxation and contemplation (Chang & Chien, 2017; Dinu Roman Szabo et al., 2023).

3. Seating and Resting Areas

Comfortable and strategically placed seating areas encourage users to spend time in the garden (Kim, 2021; Mahmood, 2018). Seating should be varied in type and placement, including options for individuals, small groups, and larger gatherings (Chang & Chien, 2017). Benches, chairs, and loungers can be placed to offer views of the garden's most engaging features (Belčáková & Galbavá, 2018).

4. Safety and Privacy

Healing gardens should provide a sense of safety and privacy (Mahmood, 2018).

Enclosed areas, hedges, or partitions can create private spaces for reflection and solitude (Andriani et al., 2021). Ensuring that the garden is well-lit and easily monitored can also enhance the sense of security (Dinu Roman Szabo et al., 2023).

Flexibility

1. Versatile Spaces

Designing flexible spaces that can accommodate various activities and uses is essential (Kim, 2021). This includes areas for quiet contemplation, social interaction, physical therapy, and recreational activities (Ulrich et al., 2020). Multipurpose spaces allow the garden to meet the diverse needs of its users.

2. Adaptable Features

Features within the garden should be adaptable to changing needs and preferences (Chang & Chien, 2017). For example, movable seating, adjustable shade structures, and modular garden beds can provide flexibility and adaptability over time.

Challenges and Future Directions

While the benefits of healing gardens are well-documented, several challenges remain in their implementation. These include:

- Funding and Resources: Securing funding for the creation and maintenance of healing gardens can be challenging. Hospitals must balance budget constraints with the potential benefits of these spaces (Chang & Chien, 2017; Totaforti, 2018).
- Maintenance: The successful implementation of a healing garden requires ongoing maintenance and management (Chang & Chien, 2017). This includes regular upkeep of plants, pathways, and garden features to ensure the space remains inviting and functional. Regular maintenance is crucial to ensure that the garden remains an inviting and functional space. This requires dedicated staff and resources.
- Integration with Hospital Operations: Healing gardens must be integrated into the overall operations of the hospital, ensuring that they are accessible and used by patients, staff, and visitors (Iqbal & Abubakar, 2022; Kim, 2021). The integration of healing gardens into healthcare settings requires careful planning and collaboration between healthcare professionals, landscape architects, and the hospital community.
- Needs Assessment: Understanding the specific needs and preferences of patients, staff, and visitors is crucial. This can be achieved through surveys, focus groups, and consultations with stakeholders (Belčáková & Galbavá, 2018; Chang & Chien, 2017).
- Site Selection: Choosing the right location for the healing garden is essential for its accessibility and

effectiveness. Proximity to patient rooms, ease of access, and visibility from indoor areas are important considerations (Dinu Roman Szabo et al., 2023; Kim, 2021).

- Design Process: The design of healing gardens should be guided by principles of therapeutic design and evidence-based practices (Belčáková & Galbavá, 2018; Iqbal & Abubakar, 2022). Collaboration with landscape architects experienced in healthcare design can ensure that the garden meets its intended purpose.
- Evaluation and Feedback: Continuous evaluation and feedback from users can help improve the garden's design and functionality. Surveys, interviews, and observational studies can provide valuable insights into how the garden is being used and its impact on health outcomes (Chang & Chien, 2017; Mahmood, 2018).
- Inclusivity: Gardens should be designed to be inclusive and accessible to all users, regardless of physical or cognitive abilities (Dinu Roman Szabo et al., 2023). This includes considering the needs of diverse populations (Chang & Chien, 2017).

Future research should focus on long-term studies to better understand the sustained impact of healing gardens. Exploring innovative design solutions, such as incorporating technology or enhancing sustainability, can further maximize the therapeutic potential of these spaces (Bulakh et al., 2021).

Conclusion

Healing gardens serve as a transformative element within hospital settings, offering a multitude of benefits that enhance the overall healthcare experience. These green open spaces are not merely aesthetic additions but are integral to promoting holistic health and well-being for patients, staff, and visitors. The evidence supports the use of healing gardens as a complementary intervention that enhances the overall healthcare experience.

In detail, the establishment and maintenance of a healing garden involve a collaborative relationship between health professionals, landscape architects, and the community of a hospital. Evaluation and continuous user feedback serve to keep up the effectiveness and relevance of the garden. Further, regular maintenance and patio ideas of sustainability ensure these spaces are kept beneficially working and environmentally responsible.

Healing gardens are thus part of the contemporary health care facility, forming part of the therapeutic benefits that a patient may derive from a hospital beyond the conventional medical remedies. It is a natural haven for holistic treatment and

wellness—a place that enriches the quality of clinical care. Therefore, when it comes to health facility development, more focus should be on having healing gardens as a way of coming up with patient-centered, restorative, and sustainable healthcare environments. These gardens epitomize that strong relation between nature and health, specifically showing just how strongly thoughtfully designed green spaces can have drastic effects on human health and recovery.

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