

## Applying the Ecology of Human Performance Model in Therapy Room Design: Enhancing Occupational Engagement across the Lifespan

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### Abstract

Occupational involvement is core to health and well-being, although it is logical that people with disabilities are subject to considerable exclusion regarding their engagement in meaningful activities. The Ecology of Human Performance (EHP) model is a universal model used to understand the multidimensional relationship between the person, the environment, and task performance in the context of occupational therapy. This narrative review discusses how the EHP model can be applied in designing the therapy room to promote occupational engagement throughout the lifespan. The environment where treatment occurs has a great impact on the outcome of the client, and the aspect of physical design is an excellent non-verbal communicator that determines whether the therapeutic relationship is effective, whether the client feels comfortable, and the effectiveness of the treatment. The main environmental issues considered are the color scheme, lighting, space distribution, furniture design, and sound privacy. There is evidence that neutral color schemes encourage emotional control, natural lighting minimizes stress and elevates mood, and favorable room temperature and acoustics encourage client disclosure and interaction. The specifics of population and cultural sensitivity assume that the needs of children, sensory therapy, and group therapy are to be distinguished. The experience of the therapist is also crucial since the ergonomic layout and natural light contribute to the well-being of the practitioner and eliminate burnout. In this review, a synthesis of the existing evidence has been used to recommend practical design suggestions, which are based on the five EHP intervention strategies, including establish/ restore, adapt/ modify, alter, prevent, and create. Occupational therapists can design environments to eliminate barriers to involvement and maximize the therapeutic outcome of various client groups by organizing therapy space into functional areas and responding to physical, social, cultural, and temporal environments.

**Keywords:** *Environment Design, Occupational Therapy, Patient Participation.*

## Introduction

One of the fundamental concepts used in the area of occupational therapy is occupational engagement, which implies the active involvement of individuals in valuable activities or actions that add to their well-being and personal growth. It also lays stress on the significance of routine in life, roles, and activities that enhance social integration, mental health, and quality of life. Increased involvement in an occupation may lead to a higher degree of satisfaction and a stronger sense of achievement.<sup>1</sup> It is needed to sustain and maintain health and well-being. Nevertheless, not all individuals are lucky enough to be able to occupy the jobs they want.

This type of injustice is often experienced by persons with disabilities regardless of their physical, developmental, or psychological condition. Such individuals have many barriers in society, including physical, visual, and cognitive, negative attitudes of society, along with a lack of effective policies or enforcement of policies.<sup>2</sup> Yet, the model, which focuses on the complicated interaction between the person, his or her surroundings and the task he/she is attempting to undertake, is the Ecology of Human Performance (EHP). It represents simply a model that assists occupational therapists to learn the influence of the context during the treatment. Context is explained as a route through which an individual perceives his world and affects the performance and behavior in numerous ways. EHP is one model framework that can be used to appreciate the impact of context on the treatment and context is one of the major variables that can affect the performance of man. Human performance is a transactional process and hence every transaction alters all the three components that is the person, the context and the performance of the task.<sup>3</sup> EHP model suggests that change may occur via increasing or restoring the capabilities of the person, altering the person or the environment, adjusting the environment or the task and creating new strategies or supports to the environment and task. Consequently, making spaces more accessible can eliminate obstacles to participation and can enhance the quality of occupational performance by addressing the person, activity or the environment. Patients with various conditions can be characterized by the high prevalence of emotional sensitivities that lead to sensory processing difficulties. Thus, it is noteworthy to guarantee sensory inclusivity of the therapy room setting to ensure improved learning and socio-emotional performance.<sup>4</sup> In many cases, a vulnerability of the environment and sensory processing is noted in different rooms.

The therapy room environment usually affects the outcomes and service quality provided. The entire

features and the aesthetic value that help in shaping a therapy room are referred to as the therapeutic landscape that is described as a paradigm of examining social, physical, and symbolic surroundings; in that they aid mental and bodily health and wellbeing in locations. It specifically refers to a highly designed, friendly, productive, and safe atmosphere, which is supposed to revive the mood and help patients recuperate. The therapeutic landscapes are planned to minimize the environmental pressure, enhance the associations of individuals with the natural world, and promote positive feelings and actions. The concept also entails the aspects of architecture, atmosphere, and interior aesthetics, which also contribute to the healing experience.<sup>5</sup>

This implies that a therapy room must be planned in a manner that is sensitive to the special needs of the patients. Some of the key factors to be considered would be color scheme, theme, lighting, furniture, and the general layout. Also, the acoustic privacy, cultural and contextual sensitivity, and design for a particular population are important factors that can aid in the development of a supportive, functional, and healing environment.

## LITERATURE REVIEW

Occupational participation or engagement in living is a determinant of health,<sup>6</sup> and the ability of persons to be able to control their lives and to actively participate in society is a key determinant not only of their health and well-being, but also of their overall expectancy and quality of life.

### Client Results and Therapeutic Environment

Results have shown that a therapeutic setting and its components have a great contribution in ensuring the clients feel at ease and at home throughout the therapeutic process. The study investigates the factors that are imperative within a standard treatment environment, examining the consequences of setting on various wellbeing and health outcomes. Non-verbal messages are usually transferred physically, expressing such emotions as comfort and relaxation, e.g., the layout and kind of furniture. The size of a room, its color, lighting, temperature, noise, cleanliness, openness, and organization are characteristics that help to create the user's experience and are viewed as strong non-verbal messages of the built environment.<sup>7</sup>

### Interior Design Elements

Backhaus<sup>8</sup> found that a number of environmental aspects, including accessories, furniture, color, sound, room setup, and lighting, have the potential to affect the therapeutic



relationship and therapy outcomes. Furthermore, cleanliness helps create a feeling of welcome and comfort, and proper lighting has been shown to impact the perception of trustworthiness of the therapist by the clients (as well as the presence of adjustable seating, a variety of textures, and personal decoration).<sup>9</sup>

- **Color:** Pieterse, Dijkstra, and Pruyn<sup>10</sup> proposed that white walls could elevate the stress levels in a person, especially when he or she has low sensory screening capacities, but green colors can be used to relax the stress and cause arousal with orange. Nevertheless, general therapy environments usually welcome neutral tones, which do not overstimulate but instead lead to the development of an emotional balance.<sup>11</sup>
- **Lighting:** Natural light has been positively reported to have a mood and cognitive performance effect. Beute and de Kort<sup>12</sup> observed that exposure to daylight in therapeutic environments may be utilized to minimize stress and eliminate the effects of depression. Where natural light may be lacking, it is advisable to use warm-colored artificial lighting in order to make the atmosphere relaxing and friendly.
- **Room Space:** According to a mixed-methods study by Sinclair,<sup>13</sup> clients and therapists indicated that some important factors about the therapy space are quite essential. These were comfortable seating systems, suitable room temperature, good soundproofing, no interruptions, and easy access to the room.
- **Privacy:** Acoustic privacy is a crucial aspect of therapy room design. Clients are less likely to disclose sensitive information if they believe they can be overheard.<sup>14</sup> Keeping in mind that the client being a child can even show tantrums and not respond accurately in the presence of other members, providing privacy to each client is vitally important and necessary to ensure engagement in all tasks and activities.
- **Cultural Sensitivity:** Therapy environments must also be designed with cultural sensitivity in mind. As noted by Sue et al.<sup>15</sup> cultural backgrounds can significantly influence how clients interpret aspects of the physical space, including color, spatial layout, and personal boundaries. To accommodate diverse populations, designers should integrate flexible elements that can be adapted to various therapeutic approaches and cultural needs. For example, sensory spaces may require specific features such as soft, calming lighting, clearly visible exits, and the use of sensory-friendly materials to promote a sense of safety and comfort.<sup>16</sup>

## Design for a Specific Population

Design elements should be tailored to suit the specific needs of the target client group. For instance:

- Child therapy rooms typically feature bright, playful colors, toys, and interactive elements to encourage self-expression and engagement.<sup>17</sup>
- Sensory therapy spaces focus on safety and grounding, incorporating tools like weighted blankets, tactile materials, and calming color schemes to support sensory regulation.<sup>18</sup>
- Group therapy rooms are often arranged to promote inclusivity and balanced participation, commonly using circular or semi-circular seating to foster open communication and connection.<sup>19</sup>

## The Therapist's Experience

While ensuring client comfort is essential, it is equally important to consider the needs of the therapist. A thoughtfully designed therapy room can support the mental well-being of practitioners and help prevent burnout. According to Shepley et al.<sup>20</sup> features such as ergonomic seating, access to natural light, and secure storage for notes and materials play a vital role in creating a functional and supportive work environment.

## Conclusion

Designing an occupational therapy room based on the EHP model can include factors that focus on the person, task, and environment. It should be designed in a way that provides environmental support for the client. Main goals for room design layout should include:

- Client-centered Customization
- Adaptability And Flexibility
- Task Diversity
- Environmental Modification Capabilities
- Inclusive And Accessible Layout

### I. Identify The Target Client Group:

Determine whether the space will serve children, adults, older adults, or clients with specific needs such as neurological or orthopedic conditions. Understanding the characteristics of the client population helps inform decisions about activities and environmental design elements.

### II. Design for Environmental Contexts:

The four types of contexts and their design consideration are as follows:

- Physical context can include modular furniture for task modification, good lighting, ventilation,

adjustable-height tables, adaptive equipment, and safe flooring. Wide doorways should also be considered for wheelchair accessibility.

- Social context can be included by ensuring proper space for private one-to-one sessions and group sessions as well. Also, proper waiting areas should be present during a family interview or involvement. To support communication, visual aids should be present.
- Cultural context should include respect for every client, be it from a different religion or race. Diverse beliefs and customs should be respected.
- Temporal context can include factors such as daylight, task scheduling tools such as timetables, clocks, etc.
- Promote The 5 EHP Intervention Strategies
- Establish/Restore involves skill building that means improving the person's skills or capabilities. Such as using equipment for motor skills, cognition, etc.
- Adapt/Modify includes a change in task or environment to better fit the person, such as adjustable furniture, assistive devices.
- Alter involves change context entirely, such as mobile therapy stations, outdoor therapy.
- Prevent includes anticipating possible performance difficulties and modifying things to avoid them, such as using safety tools, grab bars, non-slip mats, and sensor lights.
- Creating involves building new supportive environments that support optimal performance, such as sensory-friendly zones, life skills corner.

**Table 1. Organizing Space by Functional Zones**

Area	Purpose	Sample Features
<b>Activities of Daily Living (ADL) Area</b>	Practice self-care (ADLs) tasks	Mirror, sink, hygiene kits, dressing tools
<b>Productivity Area</b>	Focus on productivity goals such as school tasks, office work	Computer desks, office supplies, work surfaces
<b>Sensory and Motor Area</b>	Engage in movement-based therapy and sensory play	Swings, exercise balls, tactile panels, weighted blanket
<b>Rest and Recovery Area</b>	Support relaxation and regulation	Comfortable seating, dim lighting, calming tools and equipment
<b>Social Engagement Area</b>	Develop social communication skills	Round seating setup, games, conversation aids

**Author Contributions**

**Hadiqa Tabani:** Study conception and design, literature review, data collection, data entry, statistical analysis, methodology development, data interpretation, manuscript preparation, review, and revision.

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**Conflict of Interest**

The author declare no conflicts of interest in relation to this research study.

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