



WAYFINDING & DEMENTIA:

How Design Can Improve Navigation Among Older Adults In Assisted-Living Facilities

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INTRODUCTION:

As we age, our ability to navigate within the environment begins to diminish which may lead to increased confusion, anxiety, fear of mobility, and difficulty wayfinding among older adults living with mild to severe forms of dementia. Wayfinding is the ability to reach a desired destination in the natural or built environment, and return to a point of origin. Along with aging, the working memory begins to decline and a smaller amount of environmental information is collected by a portion of the brain called the hippocampus, to create a less detailed cognitive map. As neurological degeneration occurs, many individuals may seek additional care in assisted-living facilities. It is important these facilities accommodate wayfinding and spatial orientation needs. In order to gain a greater understanding of how assisted-living design impacts wayfinding, an overview of dementia-friendly environmental design and best practices will be reviewed.

THEORETICAL FRAMEWORKS:

Environmental Docility Hypothesis:

Created by Lawton and Simon, this model “indicates people who are subjected to restrictions on their health or cognitive ability cannot always adapt the environment to their specific needs and become more dependent on their environment¹.”

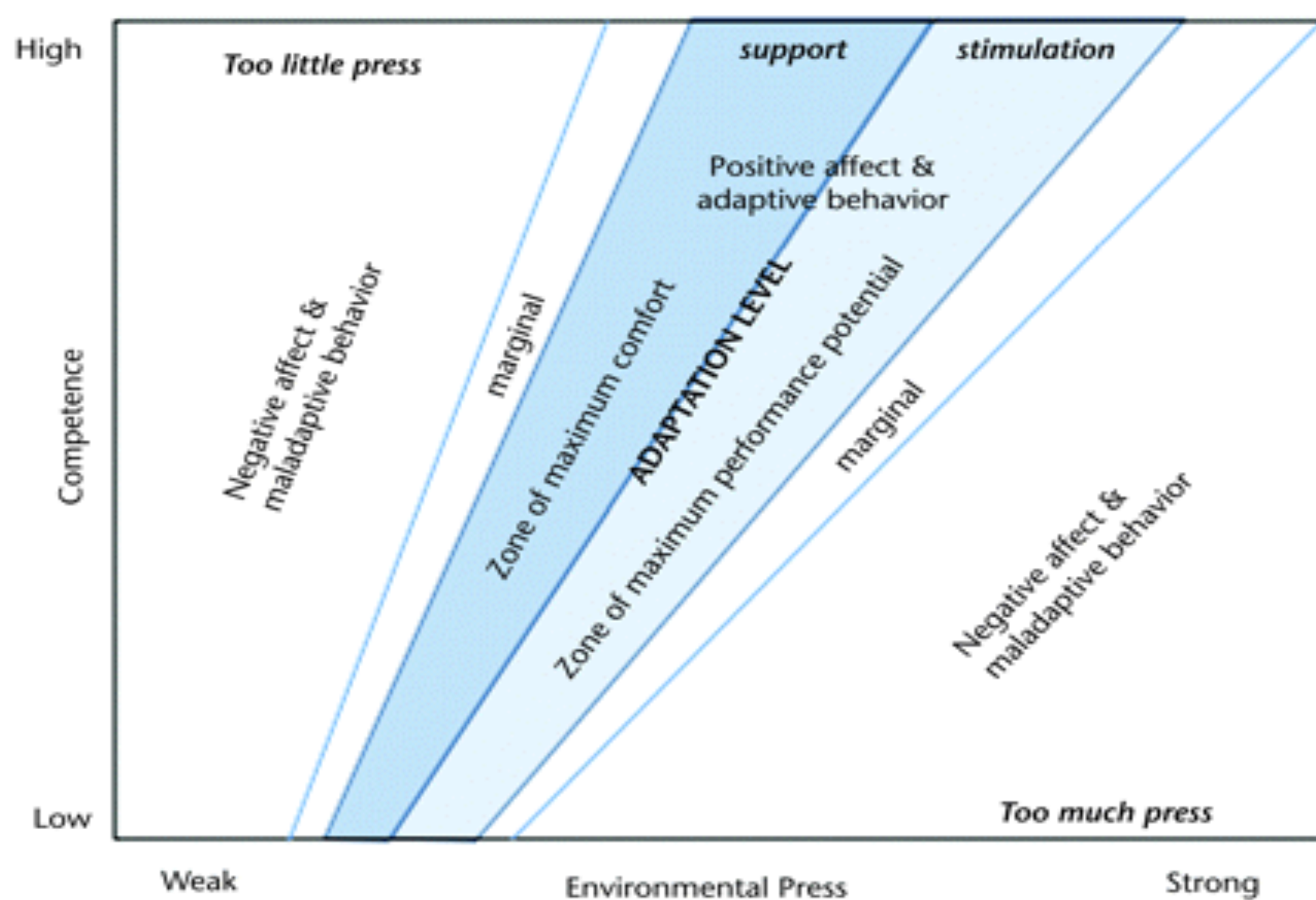


Figure 1

Competence – Environmental Press Model (Fig 1):

The “primary thesis that human behavior and function results from the competencies of the individual, the “press” of environment, and the interaction or adaptation of the person to the environment³.”

DEMENTIA FRIENDLY DESIGN:

Over the years, long-term care and assisted-living facilities have moved away from the medical model, and shifted toward the social model – while still employing aspects of the medical model⁴. The social model supports dementia-friendly environments.



The most common environmental elements used to promote wayfinding and spatial orientation include floor plan typology and design, and appropriate environmental cues such as: signage, flooring, furnishings, lighting, color, and contrast⁵.

BUILDING STRUCTURE:

Floor Plan Typology:

Good Design

- Straight corridors with clear, visible ends, and wide enough to accommodate walking aids.
- Circulation systems should have fixed reference points – like a living room or nursing station.
- Common areas should require minimal travel distance to optimize frequency of use⁶.

Bad Design

- Repetitive elements such as doors on each side of the corridor⁶.
- L-shape and T-shape without reference points.

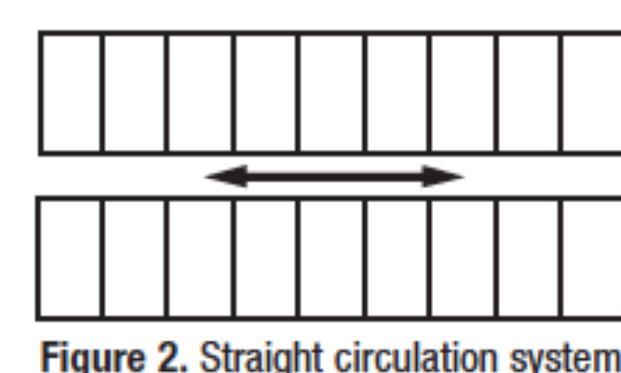


Figure 2. Straight circulation system.

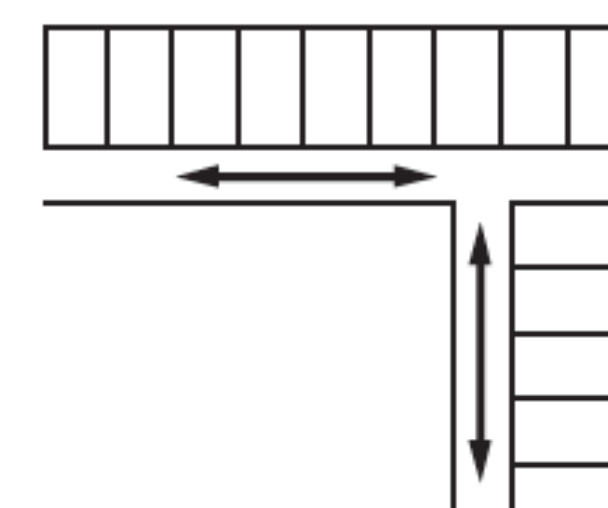


Figure 3. L-shaped circulation system with a change in direction.

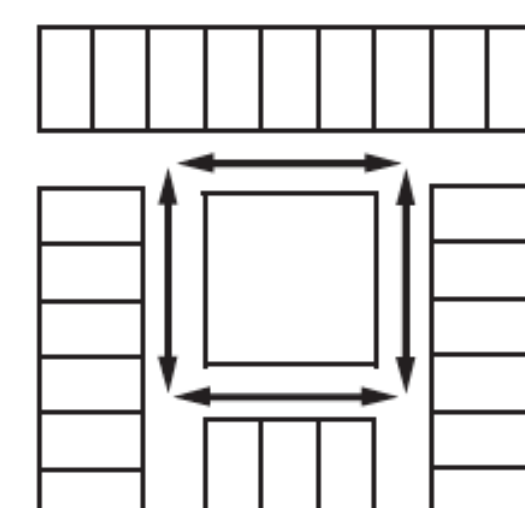


Figure 4. Continuous path around an inside courtyard.

INTERIOR DESIGN & DÉCOR:

Lighting:

Corridors and spaces should be well-lit to aid in navigation. The recommended light levels should fall between 500 to 2000 lux – which is the measurement of the intensity of light in an area⁵. There should be a minimum of 500 lux in corridors. Natural light is more desirable than artificial light. Translucent blinds should be used to prevent visuospatial disorientation associated with light reflections or glare. Spotlighting should be avoided because it produces shadows that negatively impact wayfinding⁹.



Flooring:

Various flooring materials can negatively or positively impact wayfinding.

- Flooring transitions between two different materials should be laid to blend together to avoid creating sharp contrast that can be perceived as a step.
- Transition strips of a similar color should be used to blend and connect floor patterns⁹.
- Warm tones should be used for floor materials because they are easily seen by adults with visuospatial disorientation or declining eyesight⁹.
- Surfaces should be flat and be slip-resistant.
- Flooring should not contain bold patterns, speckles, or sparkles⁹.



Color & Tonal Contrast:

The ability to differentiate between colors decrease with age and it is important to use color that compensates for visual impairment. As the eye lens age, the perception of color changes reducing the effectiveness of color coding and it becomes harder to differentiate between dark shades and light tones⁹. Strong color contrasts should be used over subtle or bold colors. To create the optimal contrast, the light reflective value (LRV) should be 30 or greater¹.

LRV:
58

LRV:
15

Signage:

Combining pictograms and general lettering should be used to promote effective wayfinding¹. Contrast should be utilized between words, pictures, and background. The lower edge of the sign should be mounted no higher than 4 to 5 feet off the ground².

CONCLUSION:

Residents rely heavily on visual cues in the environment to help them navigate. It is important to understand how physical and cognitive abilities decline with age, and affect the ability to wayfind. As the assisted-living industry continues to support individuals with dementia, it is the responsibility of the direct care team, architects, and designers to create salient environments and adopt design techniques that allow individuals to navigate successfully and independently, while improving quality of life and overall well-being.

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