Evaluation of Wayfinding Design of Senior Residential Communities

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Background

The ability to find one's way is a problem in complex buildings such as long term care (LTC) communities (i.e. independent and assisted living residences). Factors such as the complexity of the floor plan, presence of signage, lighting, glare, and use of landmarks/cues can effect wayfinding ability, especially in those with cognitive impairment (Brawley, 1997; Nelson & Algase, 2007; Marquardt & Schmieg, 2009; Benbow, 2013) . There are few tools that systematically examine the wayfinding design of LTC communities.

Theoretical Framework

Lawton's Environmental Press theory states that behavior is a result of an interaction between an individual's competence and the complexity of an environment (Lawton & Nahemow, 1973; Lawton, 1977). Design specific for wayfinding can reduce environmental complexity for those with wayfinding impairment.

Methods & Design

Two investigators scored 8 LTC communities using the revised Wayfinding Checklist. Each item was scored on a scale with values from 1 (poor design) to 3 (design effective for wayfinding). The mean scores were calculated for each item. An evaluation tool, the Wayfinding Checklist (revised), was created based on the literature review.

Wayfinding Checklist

Name of Community:_____ Rater_____ Date_____

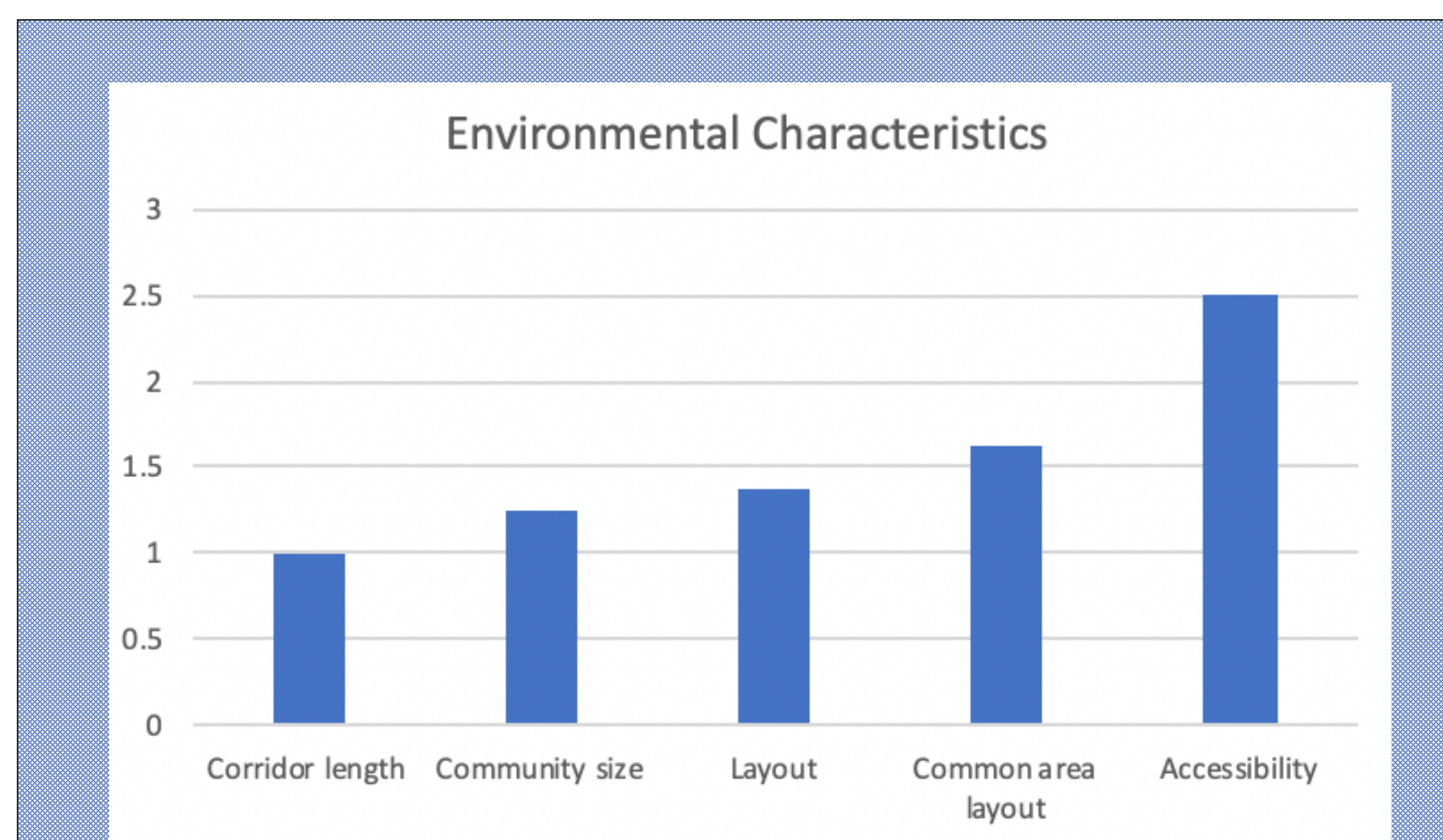|	1	2	3
Size of Community	>100 residents	50-99 residents	<50 residents
Accessibility	Locked/passcodes needed in multiple places that residents must use	A few locked codes; otherwise freely open	Totally open without locked doors
Layout	Multiple buildings connected (over time) with shared space in more than one building	Large single building with shared spaces in multiple parts of building	Single building with shared spaces mainly in one area
Common area layout	Uses different elevators to get to main common areas	Uses one elevator to get to common areas	All amenities on one floor; no elevator needed
Corridor Length	Main corridors >115 feet	Main corridors 100-114 feet	Main corridors<100 feet
Landmarks	No intentional use of landmarks	Visual cues/landmarks present but lack distinctiveness/meaning	Multiple, meaningful, distinctive landmarks for key areas
Minimal repetitive elements	Highly repetitive room features/doors/halls	Distinct amenities, wing entrances	Distinct amenities, wing entrances, and resident doors
Rooms with legible meaning	Amenity furnishings only	Décor and Fixtures indicate room meaning	Words and pictograms
Residents name and photo	Name beside resident room	Name and memorabilia by resident rooms	Name, photo, plus other memorabilia on/by door
Directional Signage: Presence	Very few directional signs at decision points	Has a few directional signs (i.e. at building entrance)	Has directional signs at major intersections and decision points
Directional Signage: letters	< ¾ inch lettering; no pictogram	¾-1 ½ inch lettering Pictogram at times	1 ½ inch lettering Placement below 48 inches, with pictograms
Directional signs: Color Contrast	<7.7.1	7.7:1 - 8.8.1	>8.8.1
Lighting – illumination in HALLWAYS	<200lux ambient or less	200-299 lux ambient;	↗ 300 lux ambient;
Flooring Glare	High glare, reflective flooring much of building	Reflective flooring present in less than half of building	No high glare flooring
Reduced floor patterns and lines	High contrast, large patterned design; adjoining floor contrast	Minimal contrast, small patterns; adjoining floor contrast	No adjoining floor contrast
Minimal information clutter	Walls cluttered, signage blends in	Minimal clutter but complex background/wall color	Minimal clutter, clean walls/background
Visibly accessible restrooms	Bathrooms hidden from main view	Bathrooms have flag/other signage, visible from down hall	Bathrooms have awning/other décor to highlight

(Benbow, 2013)

Results

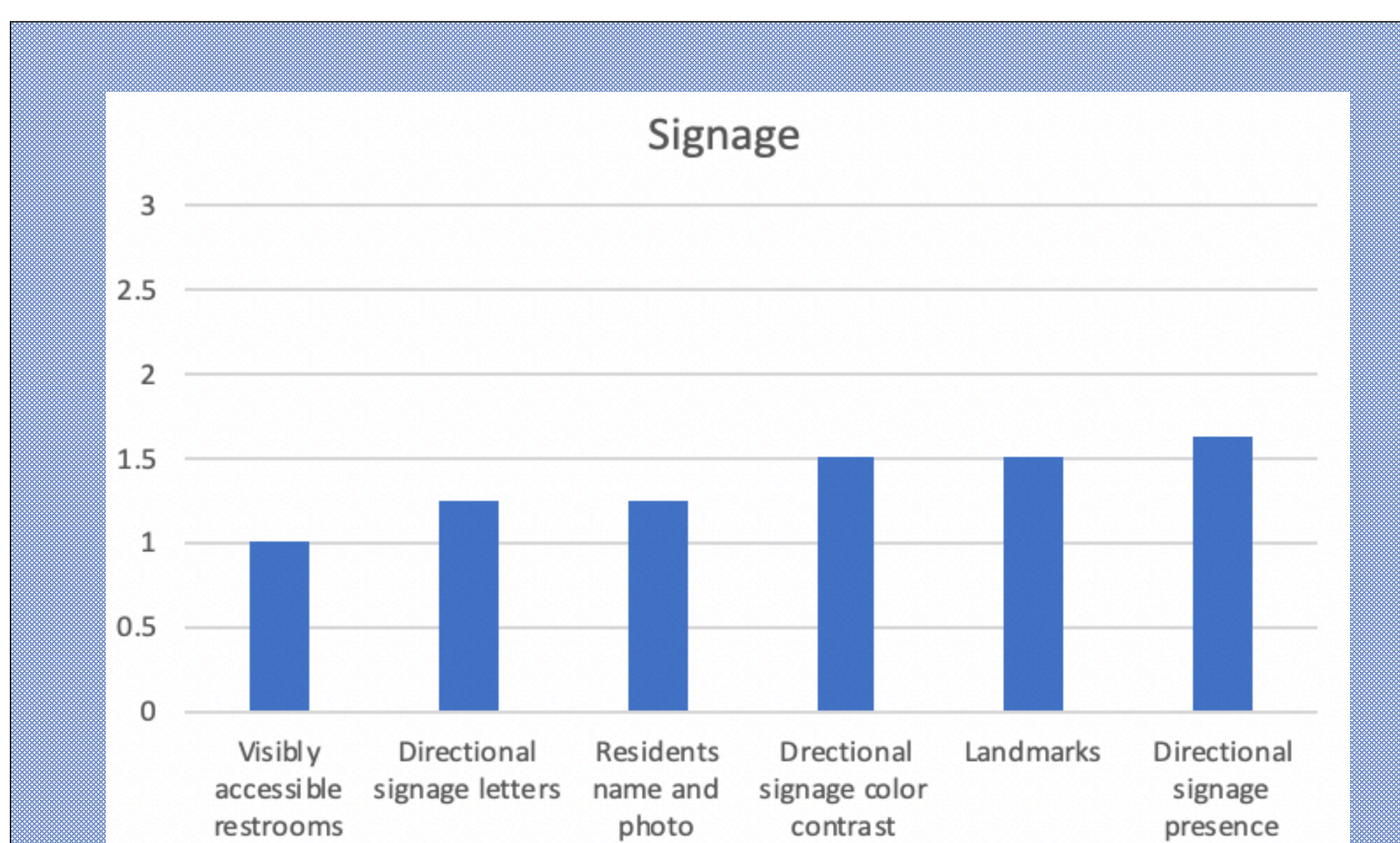Figure 1, Environmental Characteristics Mean Values.
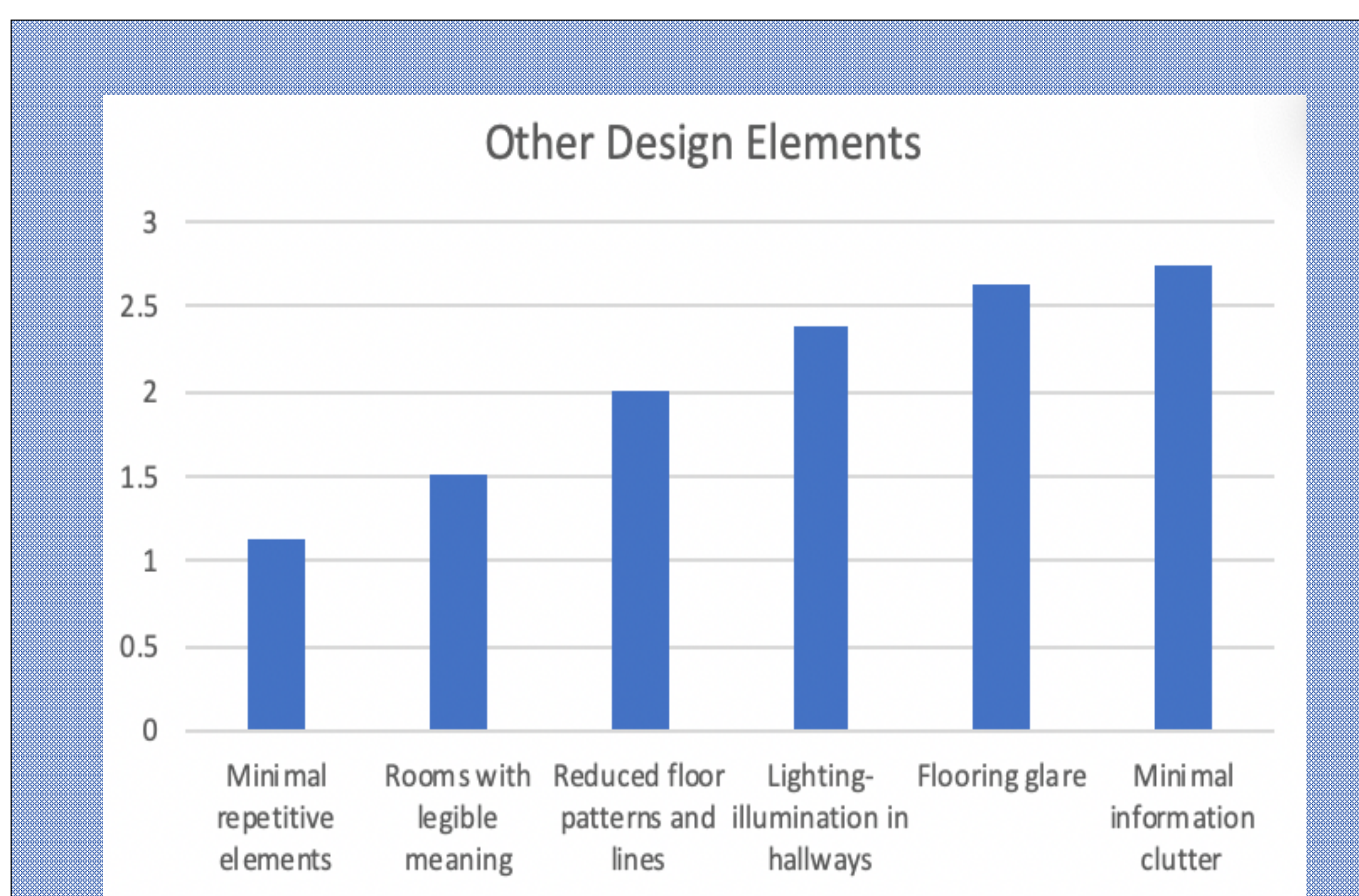

Figure 2: Signage Mean Values.

Figure 3 Other Design Elements Mean Values.

Fig. 4: Example of appropriate signage and wayfinding cue

Results

- The means of all environmental characteristics are poor, except for accessibility.

- The corridors in most buildings were long, the sizes were large and complex, and most buildings had confusing layouts.

- Most buildings had a lack of signage and poor contrast between letters and background.

- Most buildings had multiple repetitive elements and a lack of definition of the meaning for community rooms.

- Most buildings were had a lack of visual clutter and no glare.

Conclusions

The revised checklist used in this study showed that the LTC communities were large, complex buildings with poor design for wayfinding. Some of these elements can be modified (i.e. lighting, signage) to improve wayfinding and independence.

Nursing Implications

Long term care communities are especially difficult for wayfinding. Older adults, with more visual and mobility problems, can benefit from improved wayfinding design. Tools like the Wayfinding Checklist can indicate areas that can be modified.