# 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 | <200 lux 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
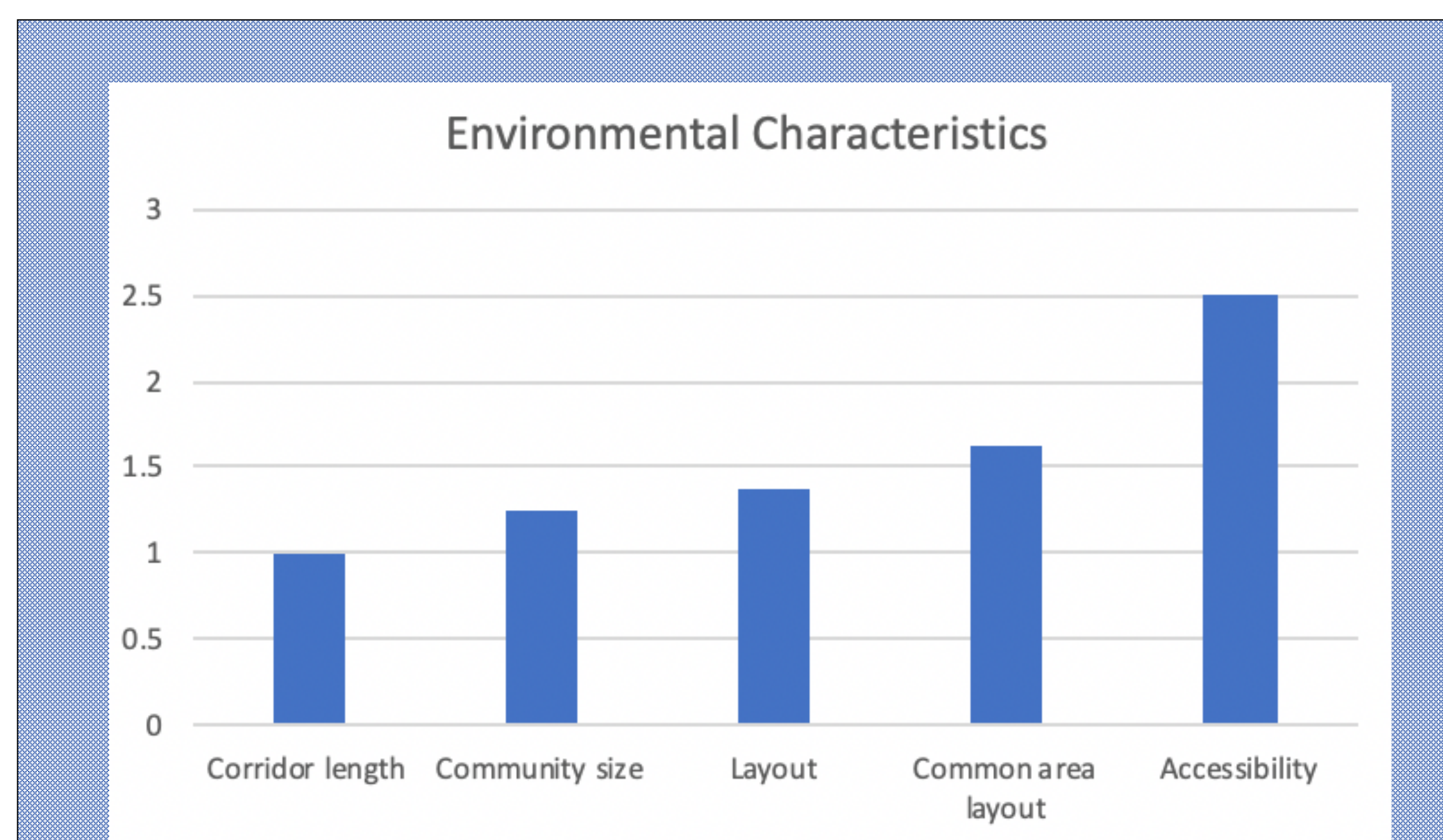


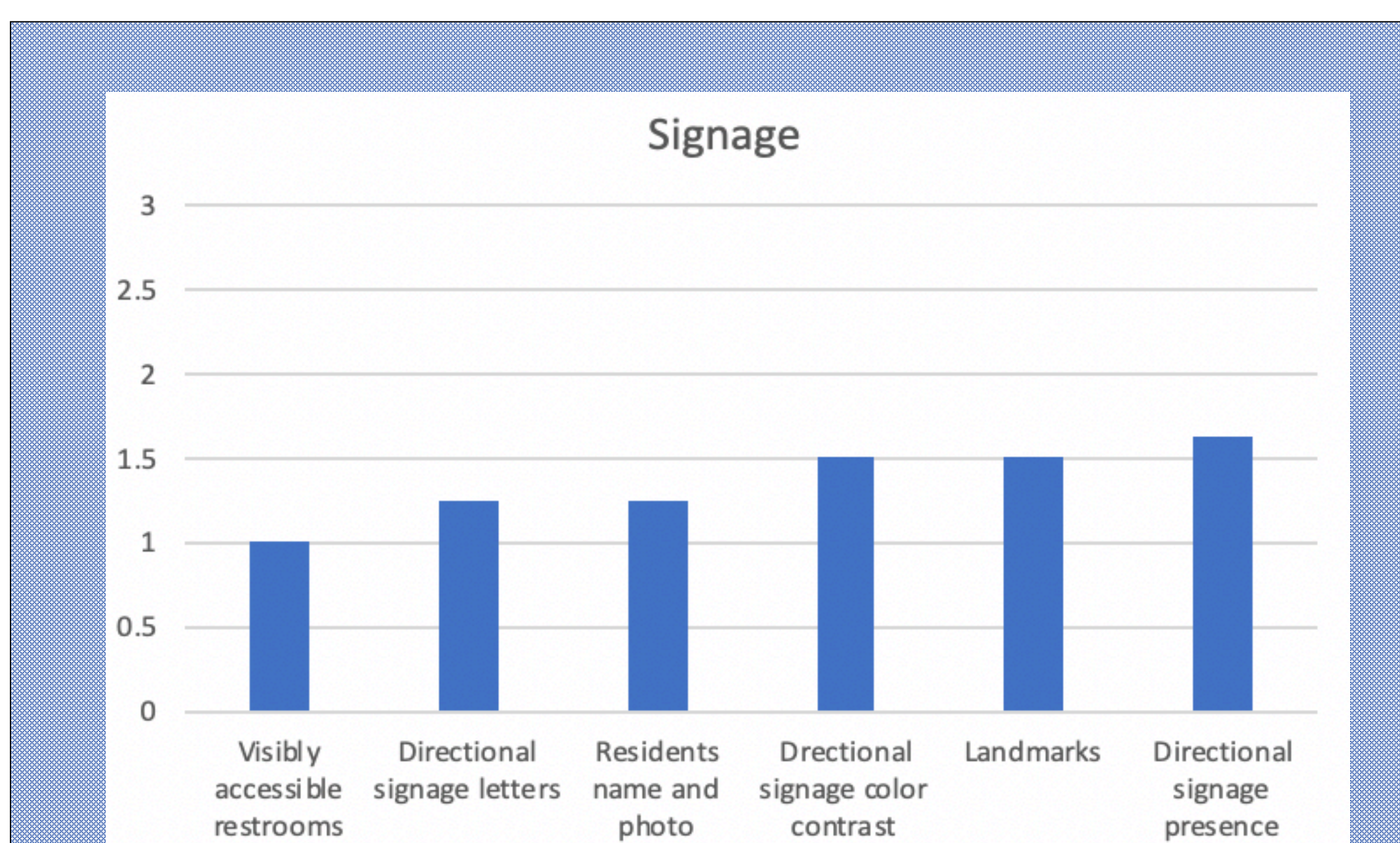Figure 1, Environmental Characteristics Mean Values.
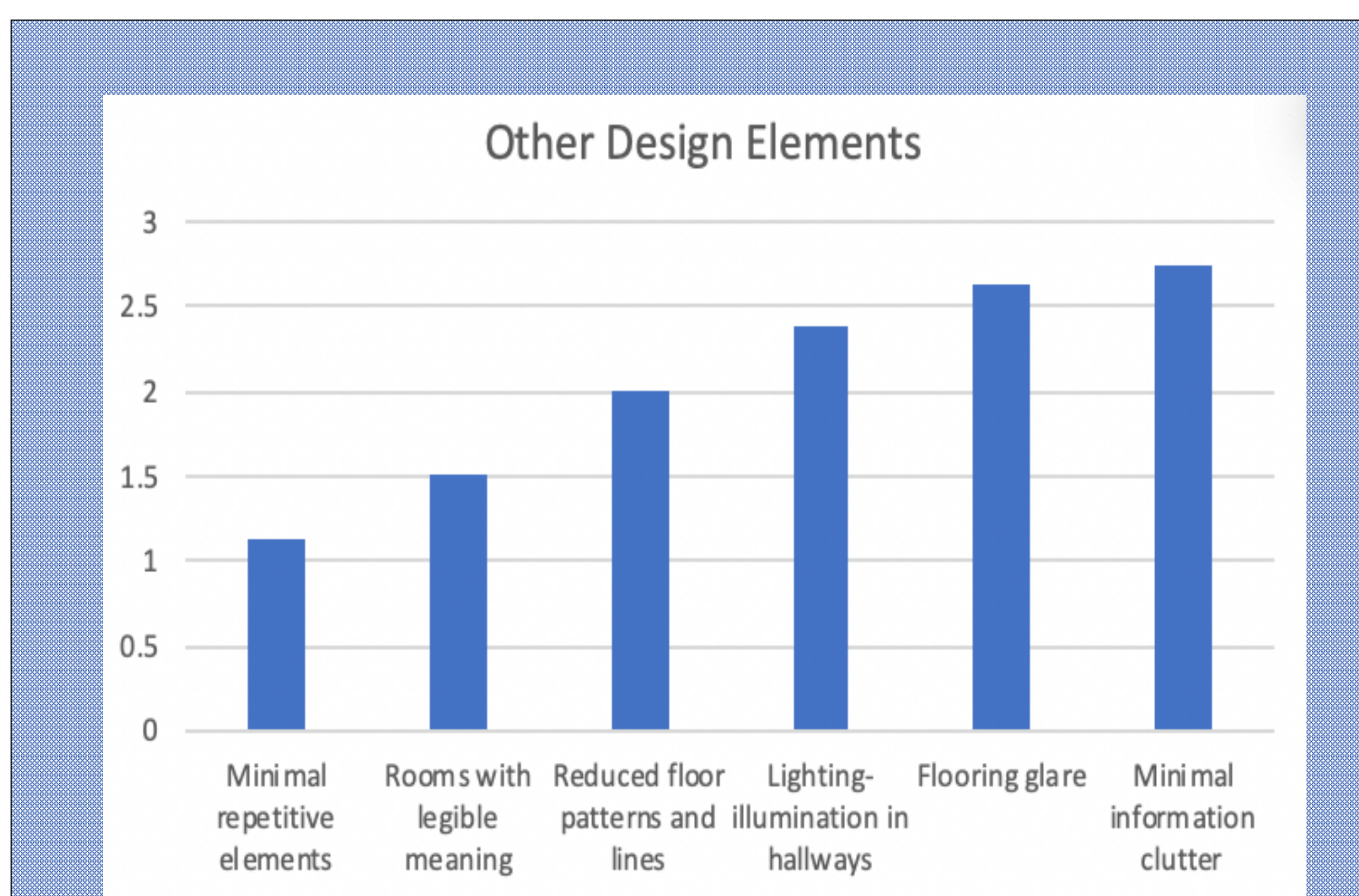


Figure 2: Signage Mean Values.



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.