SYNOPSIS

KEY POINT SUMMARY

OBJECTIVES

To assess the influence of physical aging and route complexity on wayfinding abilities.

DESIGN IMPLICATIONS

Appropriate signage and carefully considered layout are key to simplifying the process of navigating through hospitals. Routes that require passing through multiple buildings were generally found to be the most difficult; designers could consider planning facilities with as few of these building changes as possible. If there are buildings specifically designed for elderly care, signage with larger print and highly simplified floor plans should be considered.

Route complexity and simulated physical ageing negatively influence wayfinding

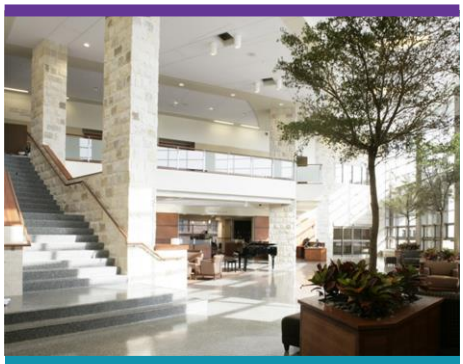
Zijlstra, E., Hagedoorn, M., Krijnen, W. P., van der Schans, C. P., & Mobach, M. P. 2016 | *Applied Ergonomics* Volume 56, Pages 62-67

Key Concepts/Context

In this study, "wayfinding" is defined as determining and following a path or route between an origin and a destination. Wayfinding can be particularly difficult in complex and sometimes stressful environments like hospitals, and as hospitals continue to expand to meet increasing healthcare demands, their layouts face the possibility of becoming more difficult to navigate. Wayfinding is particularly difficult for the elderly, who may have memory issues and weakened physical abilities. Support from the environment is necessary to help elderly people function at their best, so it is important to understand what elements of the designed environment either benefit or confuse them.

Methods

75 participants (aged 18-28, 67% female) were involved in this study. Over the course of six days, 42 individuals completed one wayfinding task while 33 completed two wayfinding tasks, amounting to a total of 108 studied wayfinding tasks. Participants were randomly assigned a group of three wayfinding tasks, starting each route from different origins and ending in different destinations. Participants were free to choose their routes among the predetermined origins and destinations. Randomly selected pairs of participants walked together; one participant acted as the wayfinder while the other was an observer measuring walking distance and time. In addition, random participants were given a gerontologic suit (a suit that allows young people to experience some of the physical limitations of elderly people), so that by the end of the study 56% of the routes studied were completed by someone in a gerontologic suit. Measures included route complexity and overall wayfinding performance.



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Findings

Building changes within routes made performances significantly less efficient; however, no significant effects were found in overall speed. Participants wearing the gerontologic suit performed their tasks at significantly lower speeds; however, efficiency rates were not significantly different from those of participants without the suit. Complexity of the route did not seem to be linked to variations in heart or respiratory rate, both with and without the gerontologic suit; however, participants using the suit did generally have higher heart rates and respiratory rates throughout their tasks.

Limitations

All participants in this study were of a relatively young age group, so despite the effects of the gerontologic suit, the results may not provide a completely accurate picture as to how the elderly would respond to these wayfinding tasks. All tasks were completed in one hospital, making it difficult to draw generalized conclusions regarding the nature and effects of complex wayfinding tasks.

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