

PANELS AS A MEANS OF SEPARATION IN AN ELDERLY RESIDENCE

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Abstract

Functionally impaired people aged 65 and older are often institutionalized because of a nationwide lack of appropriate shelter and services to accommodate their needs (Taeuber, 1992). This study focused on a type of room separation—open office systems—that could be used as an alternative to typical interior partitions in institutions for the elderly. Quantitative data were collected to determine whether females aged 65 and older who were randomly selected from 143 original survey respondents who fit within three activity-of-daily living skill levels—high, medium, and low—as defined in Enders' Checklist (1983), would accept open office panels as a means of separation within a residence. The 60 participants were interviewed using a 1" = 1'-0" scale model and Room Setting Sensitivity (RSS) Scale, developed by the researchers. Participants in the study moved a 1" = 1'-0" scaled female figure through the scale model, responding to the RSS items for each setting. Participants reviewed three panel heights (80", 72", and 62") and three room setting relationships (bed-to-bed; bedroom-to-sitting area; and sitting area-to-kitchenette) presented in random order. All 60 participants indicated they would accept panels as a means of enclosure for an interior partitioning system in an institutional setting. Based on the findings in this study, the researchers believe further study in a full-scale scenario is warranted.

Introduction

Since the early 1970s, this country has experienced a major increase in life expectancy. Even for people between the ages of 65 and 85, these improvements have been substantial. From 1950 to 1985 life expectancy at 85 years of age has increased by 24% for older women. It is projected to increase another 30% for the period between 1990 and 2040 for all elderly females (Ferraro, 1990). Currently, women outlive men no matter what their ethnicity, which indicates that the future landscape of later life is projected to be mainly female (Belsky, 1990).

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Increasing life expectancy brings up issues about the quality of life of older people (Taeuber, 1992). As the aging population increases, so does the probability that older people will experience chronic diseases. Women over 65 develop more chronic diseases than do men (Ferraro, 1990; Taeuber, 1992). These chronic conditions often lead to functional impairments, which in turn decrease the ability of elderly people to perform routine daily tasks. Difficulties in performing personal care and home management tasks are frequently referred to as “functional limitations.” These are measures of the ability to live independently and are used as indicators of the need for health services.

The set of personal care descriptors used to measure the ability to perform physical tasks is called Activities of Daily Living (ADL) (Taeuber, 1992). These indices measure the degree of independence in performing physical activities that include bathing, dressing, getting out of bed, continence, and feeding oneself. A study reported by Harpine, McNeil, and Lamas (1990, in Taeuber, 1992) indicated that 4.4 million elderly people needed assistance with one or more activities. Loss of the ability to carry out independent activities can lead to premature institutionalization (Belsky, 1990), which raises a concern about future needs in housing for the elderly. To facilitate performance of activities in concert with changing functional abilities, the interiors of housing units will need to be made more adaptable (Regnier, 1994). The current trend in universal design (Mace, Hardie, & Place, 1990)—one of meeting the needs of people of all abilities across the life span—is a step toward increasing independence and delaying the need of institutionalizing the elderly.

Howell (1980) suggested that in order to support independence, interior designs must be adaptable and flexible. Concepts such as “built-in adaptation, flexibility, and living units that are spatially interchangeable, extendible or retractable” exist now in an interior enclosure product—open-office systems furnishings. Ideas for the open-office integrate combinations of free-standing equipment with walls that can be manipulated to fit the dynamics of work flow. This freedom to manipulate “walls” and “hanging components” could provide more flexibility for elderly residents.

To date, alternative means incorporating flexibility, modularity, and mobility have not been adequately explored for residential interior partitions designed for elderly populations, especially in institutional settings such as assisted living facilities, congregate housing, and nursing homes. The objective of this study was to test the degree of acceptance of different heights of open-office panel systems in a different context—assisted living and congregate facilities—to provide a residential design alternative through a flexible division of space for the elderly.

Methodology

Sampling Procedure

Women included in the study were to be aged 65 or older, residents of the facility for at least three months prior to the interview period (McAuley, 1987), and deemed by the staff in their institutions as physically and mentally able to complete the interview

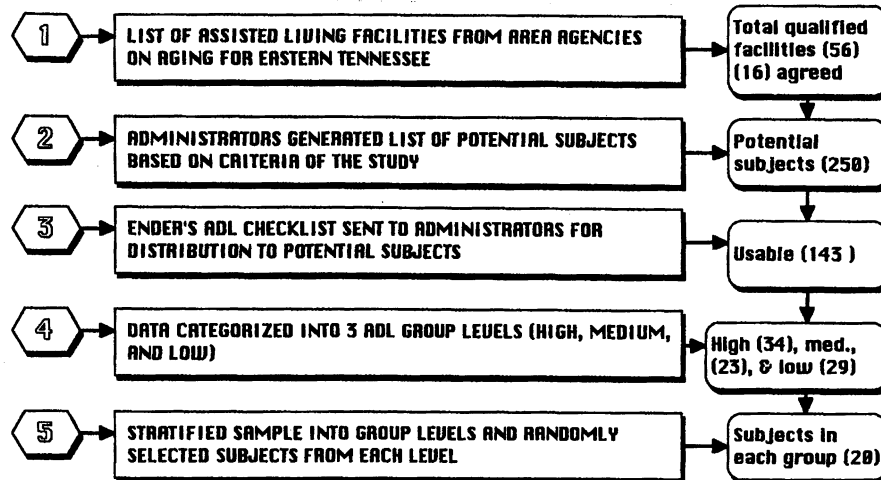


Figure 1. Process for selection of sample for the study.

and the scale model study. Age was made a fixed factor in the study to lessen the possibility of collinearity between age and the activities of daily living (Huck, Cormier, & Bounds, 1974).

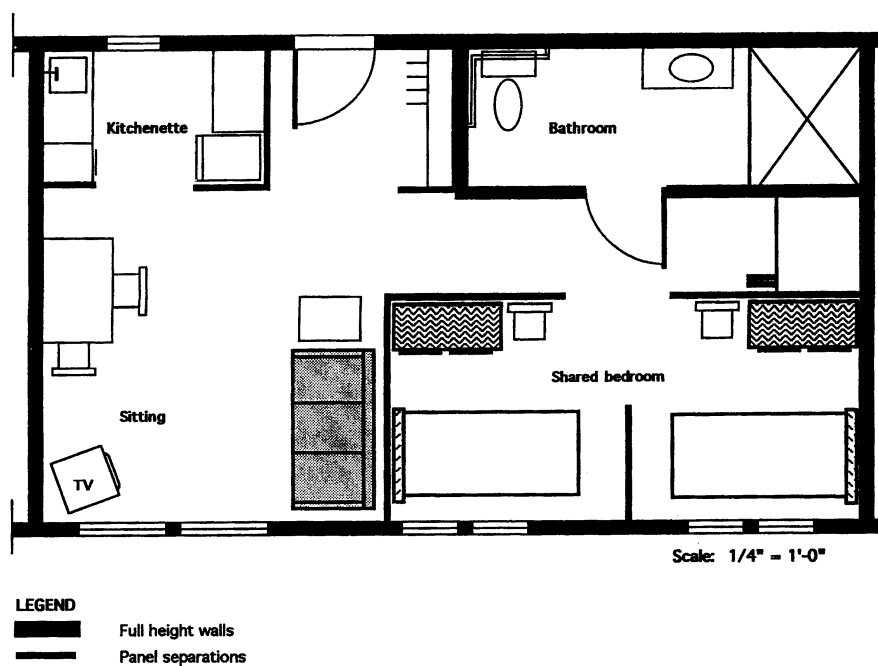
Administrators from the assisted living facilities in East Tennessee indicated that 250 residents met the criteria of the study. A revised Enders Checklist (1983) was sent to the administrators for distribution to each potential respondent. Of the 150 questionnaires returned, 143 (57% of the population of 250) were complete and therefore usable. (See summary of the sampling process in Figure 1.)

The Enders Checklist was used to assess the ADL abilities of the participants who were placed into high, medium, and low ability levels. A "high" rating meant a low level of assistance was required for daily activities; a "medium" rating meant only some assistance was required; and a "low" rating indicated a great deal of assistance was needed for daily activities.

From the pool of 143 usable questionnaires, 60 elderly women were randomly chosen, 20 for each skill level, to participate in the final phase of the study. This fairly tedious method of surveying potential respondents about ADLs was necessary to ensure a balance of skill levels in the final sample while still maintaining a random selection procedure.

Research Instruments

The 60 women participated next in an in-depth interview process using a 1" = 1'-0" scale model and the Room Setting Sensitivity Scale (RSS). (See Figure 2 for a drawing of the scale model.)



Floor plan for scale model study. 1" = 1'-0" scale: 540 sq. ft.

Figure 2. Floor plan for scale model study (1" = 1'-0"; 540 square feet).

The Room Setting Sensitivity Scale was developed by the researcher, pre-tested, adjusted, and then used to quantify respondents' acceptance of different heights of spaces enclosed with panels. In this study "sensitivity" represented the level of acceptance of panel heights, as measured by the RSS Scale, expressed by the respondents as they viewed a scale model of a residential interior with panels used for enclosure.

The RSS Scale consisted of 10 items with five pairs of environmental factors. The environmental factors related to sensory perception and behavioral information developed earlier by Rubin and Elder (1980). The items in the RSS were paired to determine whether respondents viewed the environmental factors in the RSS Scale consistently across all conditions (panel heights and room settings).

Panel heights used in the model were 80", 72", and 62". Room settings refer to the three spatial relationships that were tested. For the room setting configurations, scale figures of the respondent and a roommate were placed in the following relationships: bed-to-bed; bedroom-to-sitting area; and sitting area-to-kitchenette.

Panel heights were chosen randomly for presentation and placed between the two scale figures, and the respondent was asked how this room setting situation would

ROOM SETTING SENSITIVITY SCALE (example of one condition)

(INTERVIEWER TO CHECK RANDOM ASSIGNMENT FOR THIS PARTICIPANT PRIOR TO PROCEEDING. MODEL PERSON TO BE PLACED IN THE ROOM AS UNDERLINED)

"PRETEND THAT THIS MODEL FIGURE IS YOU AND THIS ONE IS YOUR ROOMMATE."

PANEL HEIGHT: 80"

There are several adjectives on this card. Would you use these terms to describe how panels as a separation would make you feel? Would you find the space...(REPEAT)

80a. ROOM: Bed to bed

noisy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	quiet
stuffy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	with fresh air
private	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	public
moveable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	fastened
stale	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	well vented
no smells	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	smelly
fixed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	adjustable
protected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	exposed
disturbing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	restful
odorless	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	odor

Figure 3. Example of bed-to-bed condition for the Room Setting Sensitivity (RSS) Scale.

make her feel. See Figure 3 for a description of the process of interviewing respondents for one of the room setting conditions.

Respondents viewed the scale models individually. The "rooms" presented in the model included a kitchenette, sitting area, and shared bedroom. The order of presentation of the three heights of panels (62", 72", and 80") for each room setting was randomly determined prior to the interview process. The RSS Scale was used to track the respondent's perceptions and acceptance of the panel heights for each room setting. The process for each respondent took an average of one-and-a-half hours.

Design of the Study

The study used a mixed-model analysis-of-variance design with one dependent variable (panel enclosure acceptance). Respondents were measured across all levels of the independent variables (panel heights and room settings). The study included one between-subjects factor (ADLs) and two within-subject factors (panel height and room type). The following hypotheses were reviewed:

- H₁: The panel height had no effect on panel enclosure acceptance.
- H₂: The room setting had no effect on panel enclosure acceptance.
- H₃: The ADL level had no effect on panel enclosure acceptance.

- H₄: Panel height and room setting interaction had no effect on panel enclosure acceptance.
- H₅: ADL/panel height interaction had no effect on panel enclosure acceptance.
- H₆: ADL/room setting interaction had no effect on panel enclosure acceptance.

Results

An analysis of variance was used to test for sensitivity-scale mean differences among respondents for each of the main effects and their potential interactions. Only H₁ and H₂ showed a statistical significance at alpha level <.05. (See Table 1.)

No significant differences were found for any of the other hypotheses tested. To determine where the significant differences were in the respondents' perceptions, a single degree of freedom contrast (Tukey's HSD in Huck, Cormier & Bounds, 1974) was performed as a post hoc analysis of the significant results. The means for the main effect were in the expected direction (a 62" panel height was least acceptable and 80" was most acceptable to the women). There appeared to be little distinction between the 72" and 80" panel heights, but both were significantly different from the 62" panels.

Table 1. Summary of Results for ADL Group, Panel Height, and Room Settings.

SOURCE	WILKS'S LAMBDA	F	DF	P
Main Hypotheses				
ADLGRP	-	0.24	(2,57)	0.7888
Setting	0.68	13.19 *	(2,56)	0.0001
Panel Height	0.43	37.69 *	(2,56)	0.0001
Interactions				
PH*ADLGRP	0.95	0.75	(4,112)	0.5596
Setting*PH	0.96	0.53	(4,54)	0.716
Set*PH*ADLGRP	0.86	1.06	(8,108)	0.3987

* = Significant at the 0.05 level

Note: ADLGRP = ADL group; PH = panel height; SET = setting

Note: Wilks's Lambda only performed on repeated measures

Note: Between-subjects factor = ADL group

Within-subjects factor = panel height & room setting

ANOVA Statistical analysis conducted

Results involving the room setting indicated that the "bed-to-bed" setting response was not significantly different from the mean response to both the "bed-to-bed" and the "bedroom-to-sitting areas." The "sitting-to-kitchenette" setting response was significantly different from the mean responses to both the "bed-to-bed" and the "bedroom-to-sitting areas" at alpha level $<.05$.

Two questions unrelated to the hypotheses also produced interesting information. Seventy percent of the participants indicated that "yes" they would like to live in this type of paneled environment; 15% said they would not; 12% were undecided; and 3% had no response. Ninety-two percent of the respondents indicated that they would prefer a paneled separation over a cubicle (hospital) curtain; 95% agreed that a panel would be better than leaving the spaces open, and 68% chose a paneled environment over a "normal wall" (i.e., stud with drywall) as a means of separation.

Discussion

It is clear that the elderly women who were part of the study felt that certain panel heights would be more appropriate than other heights. This was to be expected, and two factors could contribute to this perception. First, the women, upon accurately evaluating the panel heights, would only accept situations that most closely resembled what was familiar to them (in terms of wall height). This perception could explain why these women were more satisfied with the highest panels (72" and 80"). Second, the women in the study felt that a 62" panel height was not high enough to provide basic privacy (as determined by the RSS Scale) and therefore this height was the least effective choice in the study.

It is interesting to note that these women accepted panels at all. Most of the women in the study were too old to have had experience working in panel systems, which would be even more novel in a living environment.

Upon review of the responses to the contrasting panel heights, it became apparent that the women felt strongly about the 62" height and could differentiate this height from the taller panels. However, they did not appear to see any difference between the 72" and the 80" heights. This information could be useful to healthcare providers, since there could be substantial cost savings in the use of panel, instead of full-height wall, environments.

The elderly women's concern about the "sitting-to-kitchenette" setting was unexpected. Since the bedroom tends to be the second most private space in the home (where dressing and sleeping occur) the "bed-to-bed" area was expected to be the area where the women would be the most concerned about privacy.

This reaction might suggest, among other things, that the women were more protective of the kitchenette area of their residence, perhaps because this area is one where the "public" could view a resident's diminished skills and have an opportunity to judge these skills. On the other hand, roommates can become accustomed to each other's habits and skills over time, and even work to protect each other's failings. It could also be possible that the women wanted their roommates to be able to visually monitor them if they needed assistance. Further study needs to be done in this area.

The elderly women in the study indicated that they would indeed consider living in paneled environments. Therefore, it may not be necessary to fully enclose the interior residential areas for elderly women living in an institutional setting.

The information from the study supports the notions by Crewe, Zola, and Associates (1983) that: 1) a person has the right to live in the least restrictive environment; 2) a person has the right to autonomy; and 3) a person has the right to support for competency in daily tasks. By indicating their preference for flexibility (defined as different panel heights in different settings), the elderly women in the study perhaps tended to view the living environments in the scale model as being less restrictive than their current environments. By seeing an environment that they could adapt and change, these women may have felt more autonomous and more in control over their own individual spaces, in a "supportive" environment.

It might come as no surprise that the elderly women in the study would prefer panels to other means of separation in a residential setting (e.g., cubicle curtains, openness, etc.), but that they would prefer panels over a "typical" wall was surprising. This might indicate that these women were not completely satisfied with the types of assisted living environments in which they were currently housed. Perhaps they felt that, in the relatively small spaces allotted, normal walls were too confining, or made them feel lonely and separate from other people.

Living in a space where the wall (panel) does not reach the ceiling provides the perception of more openness and space. The concept of flexibility inherent in the panels, and the ability to select the height of separation between areas, seemed to appeal to many of the women in the study.

That these women might be willing to live in a paneled environment suggests that they view this as a way to maintain independence for a longer period of time. So far there have been few alternatives in terms of housing design that support functional limitations.

A future study, in a full-scale setting, should be conducted to determine whether adaptable, moveable panel enclosures could maintain independence for longer periods than would full-height (non-adaptable) setting enclosures. In some ways this study has raised more questions than answers, but perhaps it provides one step towards finding ways of increasing independence for the elderly. Alternative means of housing the elderly along these lines is a subject that deserves further research.

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