AN ASSESSMENT OF DINING ROOM DESIGN ASPECTS IN HOUSING FOR ELDERLY PEOPLE

Abstract

Dining room in houses should be designed ergonomically in a way that are easy to handle and operateand should be provided with age-friendly furniture to avoid any injuries..The study aimed to understandthe dining room design features in elderly people housing. Kurnool district of Andhra Pradesh is selected as study location. A sample of 60 elderly women was selected purposively. The existing dining room of elderly houses were physically observed and evaluated as per the standard recommended design guidelines. The study revealedthat majority (93%) of the dining rooms had both direct and indirect accessibility to various rooms as per the guidelines. It was observed that maximum houses where elderly are residing had ceiling of dining area at a height above the recommended guidelines.Provision of circulation Space in dining area was felt neutral by more than half respondents. Most of the elderly preferred dining area in every house with recommended features.There is an association between the existing dining room design and the needs of the respondents to age in place with reference to dining room design.

Keywords: Dining room, Elderly people,Ergonomics and Design

Introduction

Elderly people housing should have age-appropriate furniture and furnishings in their homes as they spend a lot of time there which will help to prevent accidents and injuries. The layout of the kitchen and dining area should be designed ergonomically, with easily handled and operated equipment suitable for the elderly. A wide range of products, including tables and chairs, kitchen worktops and storage space, bedroom and dining room furnishings, electric switch locations, door handles, window placements, etc., are designed with the elderly's comfort in mind.

In order to ensure that the elderly may utilise their residences to the fullest without facing harm or discomfort, the planning and designing requirements for housing for elderly individuals should be based on both the occupants' current and future housing needs. In the future, there may not be enough homes to meet the demand for senior living due to supply constraints. A home for

the elderly should be designed with ease of living in mind (Halime, 2007). For the elderly, standard design elements become barriers. When a space is well-designed with physical elements and well-arranged furnishings, older people feel secure (Ishihara et al., 1997; Alcantara et al., 2005).

In an ergonomic dining room design study, Octavia et al. (2013) determined the needs and specifications of a sample of Indonesian senior citizens. To determine the extent of elderly housing elements present in the residence, the researcher observed the housing conditions. The Usability, Safety, Attractiveness Participator (USAP) design model was employed in the study, which includes the active involvement of senior citizens as consumers during the needs identification, design idea generation, and design model evaluation phases of product design (Hunt, 1992; Leung et al., 2017; Boschetti, 1990; Lee et al., 2007). The study's conclusions highlighted the necessity of a shelf to hold cutlery utensils, a foot support, a hand support to make standing up easier, and a portable table to hold small snacks. According to a research by Nachreinera et al. (2007), trips and slips account for the majority (62%) of falls that happen in and around the house, especially during the day in living rooms, kitchens, and dining rooms. The investigator observed that falls had happened at home on a regular basis when people were walking, carrying things, or reaching or leaning. The study found that while 53% of falls resulted in no injuries at all, 31% caused minor injuries, 10% caused moderate injuries, and 6% caused serious injuries. In order to lower the danger of falls, the author stressed the importance of raising awareness of the home environment.

Methodology

Exploratory research design was used in the study .The study was conducted in the Kurnool district of Andhra Pradesh,India. A total of 60 elderly women of age group 60 yrs and above and living independently with or without spouse were selected purposively as the sample of the study. The data was collected using self-structured interview cum observation schedule.The data was collected using inteview an observation method.The design guidelines for dining room in elderly housing proposed by Parker (1987) served as a base for identifying the features to measure the existing conditions of a dining room. Eight features that enable the elderly to eat with comfort in dining room were identified from the guidelines. The dining room of the respondent was evaluated in terms of these standard design guidelines. Depending on the

presence and absence of the design feature,scoring was given.Score 3 was given incase the existing feature was ‘above the recommended guidelines’,score 2 was given incase the existing feature was designed ‘exactly as per the recommended guidelines’ and score 1 was given incase the existing features was ‘below the recommended guidelines’.The probable score each respondent can earn was between 8 and 24.The results were interpreted such that the higher the score, higher in the probability of the dining room as per the recommended guidelines. Design needs were scored 3,2 and 1 for essential, preferred and neutral. Chi-square analysis was used to know the association between existing design features and needs of the elderly.

Results and discussion

Existing dining room design features

Eight standard design guidelines related to furniture arrangement,accessibilty,space designwere identified to assess the design of dining room in elderly housing. The results are presented in the table 1 below.

More than half of the dining rooms had table space as per the recommended guidelines. Two thirds of the dining rooms had space between wall and furniture, space for serving the food, space for the person to rise from chair. The area of storage unit was found as per design guidelines in case of 56.66 % of the houses. In case of 43.33 % of houses storage in dining room was found inadequate.

Majority (93%) of the dining rooms had both direct and indirect accessibility to various rooms as per the guidelines. It was found that maximum houses where elderly residing had ceiling of dining area at a height above the recommended guidelines.

Table1.Distribution of respondents by existing dining room designfeaturesn=60

S.No	**Recommended Design guidelines**	**Status of existing design features against the guidelines**		
		Above the recommended	**Exactly as per the**	**Below the recommended**

		guidelines		recommended guidelines		guidelines	
		N	**%**	**N**	**%**	**N**	**%**
1	Table space for each person 1 foot 9 inches to 2 feet	6	10	32	53.33	22	36.67
2	3 feet between wall or a piece of furniture and the table in order to get a seated person.	4	6.67	17	28.33	39	65
3	3 feet 8 inches from table to wall for serving	4	6.67	16	26.67	40	66.67
4	Minimum of 2 feet 8 inches for rising from chair at the table	4	6.67	24	40	32	53.33
5	1 feet 6inches x 3feet 6 inches area for storage unit in dining area	14	23.33	20	33.33	26	43.33
6	The ceiling height of the dining space no lower than 7 feet 6 inches	57	95	1	1.67	2	3.33
7	Direct accessibility between food preparation and living area	56	93.33	4	6.67	0	0
8	Indirect accessibility between entry/exit and private outdoor	56	93.33	4	6.67	0	0

Design needs in dining room

The elderly were asked to state their proposal and needs to design a dining room to enable them to live comfortably in old age(Table 2.)

More than half (56 %) of the respondents preferred to have proper table space for each person in dining area. Slightly less than half of the elderly preferred 3 feet space between wall and furniture. Respondents felt neutral in case of provision of space to serve the food (61%), the person to rise from chair (51 %), storage in dining room (38%).Majority (93%) of the respondents felt essential for both direct and indirect accessibility to various rooms.

Table 2. Distribution of respondents by their needs in designing a dining room

n=60

S.No	Dining room needs of the elderly	Adequacy of dining room needs					
		Essential		Preferred		Neutral	
		N	%	N	%	N	%
1	Table space for each person should be of 1 foot 9 inches to 2 feet	7	11.67	34	56.67	19	31.67
2	Allow 3 feet between wall or a piece of furniture and the table in order to get a seated person	4	6.67	28	46.67	28	46.67
3	Serving requires 3 feet 8 inches from table to wall	4	6.67	17	28.33	39	65
4	Minimum of 2 feet 8 inches is required for rising from chair at the table	4	6.67	25	41.67	31	51.67
5	Area of storage unit in dining area should be 1 feet 6inches by 3feet 6 inches	18	30	19	31.67	23	38.33
6	Direct accessibility has to be provided between food preparation and living area	56	93.33	2	3.33	2	3.33
7	Indirect accessibility has to be provided between entry/exit and private outdoor	56	93.33	4	6.67	0	0

Convenient accessibility was felt most essential design feature by elderly. The elderly expressed that it wasessential to have both direct and indirect access between dining space and living space, entry/exit and private outdoor. The sample felt sufficient table space was essential.

Provision of circulation Space in dining area was reportedas neutral by the more than half respondents. Most of the elderly preferred dining area in every house with recommended features related to furniture placement,space arrangement etc.

Hypthesis testing

In order to know the association between existing dining room design and needs of elderly,statistical analysis was done.The hypothesis was given below

H_0 1. There exists no significant association between existing dining room design and needs of elderly with reference to dining room design

The design guidelines specified for dining room include table space for each person in dining area, space between wall and furniture, space for the person to rise from chair, direct and indirect accessibility to various rooms and so on. The respondents (83%)preferred dining room as per the design guidelines.

Table 3. Association between existing design features of Dining room and needs of the elderly

n=60

Existing dining room features	Design needs with reference to dining room							
	Neutral		Preferred		Essential		Total	
	N	%	N	%	N	%	N	%
Below the recommended guidelines	1	1.67	0	0.00	0	0.00	1	1.67
As per the recommended guidelines	1	1.67	50	83.33	0	0.00	51	85.00
Above the recommended guidelines	0	0.00	2	3.33	6	10.00	8	13.33
Total	2	3.33	52	86.67	6	10.00	60	100.00
χ^2 value	72.7262							
Probability value	< 0.0001*							

Note- *- significant at 1 per cent level

The Chi-square value was found to be highly significant(Table 3.). There is a strong evidence against the null hypothesis. Thus, there is an association between the existing dining room design and the needs of the respondents to age in place with reference to dining room design. Hence, the null hypothesis was rejected.

Conclusion

The study concluded that elderly houses had space allowances for easy circulation was found as per the recommended design guidelines in 50 % of the dining rooms. Space allowance per person on dining table was found adequate in case of majority of the houses. Storage in dining room was found below recommended standards in most of the dining rooms. Dining rooms were found with both direct and indirect accessibility.Convenient accessibility was reported as most essential design feature by elderly people. The elderly felt essential to have both direct and indirect access between dining space and living space, entry/exit and private outdoor. The sample felt sufficient table space was essential.

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