

Elderly friendly initiative in making home-A safer place

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ABSTRACT

Demographic ageing is a global phenomenon. Due to increasing medical facilities, environment and personal consciousness about health, the percentage of elderly have been increased. Falls present a major problem in older adults. Present study aimed to throw light on making home a safer place to live in by thoughtful design to increase safety at home - an initiative towards safe living for elderly. The major objectives were to study the reasons for accidents among the elderly in the home and to assess the nature and frequency of occurrences of accidents. Pre-tested, structured interviewed schedule with observation sheet was developed to collect the relevant information from 100 elderly men and women who were above 60 years of age. Snowball sampling method was used to collect the data. Data revealed that vision problems, joint problems, diabetes and blood pressure were the common prevalent health related problems among selected respondents. An occurrence of the accidents in last two years was found among 60 per cent of the respondents which was due to the housing situation. Among women, 18 per cent had accidents in kitchen and bathroom whereas majority of the men had accidents with electric shock, slipping due to wet floor or falling from the stairs. To reduce the occurrence of the accidents, sense of safety among elderly people can be improved and appropriate design aspects in the home will prove to be beneficial to avoid accidents.

KEY WORDS : Indoor residential hazards, Hazards assessment, Occurrence of accidents, Sense of safety

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INTRODUCTION

Ageing is an irreversible process. In the words of Seneca, "old age is an incurable disease". More recently Ross commented, "You do not heal old age, you protect it, you promote it and you extend it". Expectation of life at birth has increased in recent years. According to the official projections of the Registrar General, India, in 2001 the elderly population is estimated as 71 million and 114 million by the year 2016 (the year for which the ultimate projections were made). The United Nations projections put the estimated number of elderly in India for the year 2025 is 168 million and for 2050 it is 326 million. These are frightening numbers: an elderly population of 20 million in 1951 increasing to 326 million in 2050.

According to United Nations estimates, during the period 1995-2000 in India, the life expectancy of male stood at 62.3 years while that of females was 62.9 years. For the period 2020-2025, the figures will be 68.8 years

for males and 72.1 years for females. Although the number of deaths caused by accidents has fallen by 37 per cent across all age groups in relent over the past twenty years and falls continue to be relatively common causes of death and injury among older people often resulting in serious long term difficulties and even premature death. Consequently the reduction of accidents in the older population is considered to be an important factor in promoting the general well being of older people. The 1998 Health Promotion Strategy for older people was — 'adding years to life not life to years' which was formulated by National Council on aging and Older People in Co-operation with Department of Health and Children set a target to reduce the death rate from all accidents and their adverse effects in people aged 65 and over by at least 17 per cent in the year 2005 (Park, 2000).

While there are marked differences between individuals, age related disabilities like impaired vision,

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hearing, mobility, osteoporosis, arthritis, rheumatism and reduced resistance to poisons. Food-borne infections make older people more prone to accidents and make their recovery slower or more limited than younger people. Surveys indicate that people aged over 80 are more likely to have problems with mobility and everyday activities such as bathing, dressing, moving about and eating (Anonymous, 2004).

The home can be made a safer place to live in by thoughtful design both the house or flat and the items we use in it. Safety is not simply for the individual himself or herself but for others such as the old, who may be more susceptible to risk. The elderly are at risk because of their failing powers, are less quick to respond to a dangerous situation and are not able to react less appropriately than younger people can. The major cause of concern is the accidents, which occur in the house. Only in the last decade have accidents inside the home begun to be treated as seriously as accidents outside the home. This is partly because the home is a private place and inspection, which is an accepted practice in the work place, would not be suitable. Research into home accidents has, until recently, been fragmented.

The present study was undertaken with view to throw some light on the exiting indoor environmental hazards in the house of elderly people. According to Yale School of Medicine a home can be a hazardous place. The most dangerous part of the house is the floor in living room, bedrooms and hallways. In nearly 80 per cent of homes the floor filled with little dangers the represent a major hazard through rugs, carpet edges, small objects, electrical chords and slippery floors. Stairways are the second most dangerous zone. They are prone to accidents if night-lights switch at the top and bottom of stairways are missing; as well as hand rails. Uneven steps could spell further trouble. The bathroom can be identified as another dangerous room, if filled with slippery stripes and grab bars or poor lighting. Kitchens with poor lighting, unstable step stools and inappropriate storage areas that require an older person to reach higher or bend low might prove unsafe. It has also been reported that identification of these environmental hazards in home and modification of the same could enable to reduce or eliminate accidents in the home can bring comfort and happiness as well as lessening of anxiety, and more confidence and freedom amongst them.

The objectives are as : to study demographic characteristics of the respondents, to study reasons for accidents amongst the elderly people in their houses and to assess the nature and the frequency of occurrence of accidents amongst the elderly people in their house.

Keeping these above objectives in mind, total 100

elderly men and women were interviewed in Vallabh Vidyanagar town of Gujarat

METHODOLOGY

A descriptive survey design was used to answer questions concerning the perceived sense of safety of elderly men and women and frequency of occurrence of accidents in the existing indoor environment in the selected areas of their residential units namely; entrance, living room, bathroom, kitchen and staircase. The target population consisted of all elderly men and elderly women who were 60 years or above as well as who had educational qualification up to graduation or above. The snowball sampling technique was opted as the mode for selecting the sample.

OBSERVATIONS AND DISCUSSION

The findings of the present study have been presented in the following sub-heads:

Characteristics of study subjects:

Regardless of sex of the respondents, 44 per cents were between 60 to 64 years, 39 per cent of them belonged from 65 to 69 years of the age group whereas others were 70 years or more than that. Over 28 per cent elderly men and 42 per cent elderly women were teachers while one third of the elderly were supervisor, professionals and businessmen by profession.

Regularity in health check up:

About more than half of the elderly men and nearly two third of the elderly women in the present study reported of being regular with their medical checkup.

Number of health related problems amongst the elderly people:

Findings showed that 28 per cent men and 20 per cent of the women from the elderly had 1 to 3 different health related problems; while about 50 per cent men and 62 per cent women of them faced 4 to 6 health related problems. Further, more than 6 health- related problems were observed in case of 22 per cent men and 18 per cent women.

Type of health related problems amongst the elderly people:

The result of Table 1 revealed that most commonly prevalent vision related problems like glaucoma, cataract which were reported by 31.6 per cent of men and 28.4 per cent of women. Problems pertaining to bones and joints

Table 1 : The percentage of elderly reporting various ailments

Type of health related problems	Men		Women	
	F	P	F	P
Vision related	15.8	31.6	14.2	28.4
Bones and joints related	11	22	27	54
Brain related	12.3	24.6	11.6	23.3
Weight related	7	14	9	18
Muscular weakness	33	66	44	88
Blood pressure	16	32	13	26
Diabetes	4	8	10	20
Cardiac problem	3	6	5	10

included osteoarthritis and osteoporoses which were found less than one fourth (22 %) in men and more than half (54 %) in women. Further, approximately half of the respondents suffered from brain related problems like vertigo, forgetfulness, depression and temporary memory loss in men and women while 14 to 18 per cent of men and women were suffered overweight and underweight related problems. Other health related problems reported by the respondents included muscular weakness, blood pressure, diabetes and cardiac problems.

Type of accidents occurred:

Over 10 per cent women and 8 per cent men amongst elderly had accidents due to colliding with furniture in the living room; the reason of the same being improper furniture placement and low light levels in the living room. Slipping, falling from bed/diwan/sofa, were the other kind of accidents that were reported to have occurred in the living room. Among 18 per cent women and 16 per cent men accidents took place in the bathroom, which could be assessed as another dangerous area in the house. Slipping due to wet or slippery floor of the bathroom was observed (4 per cent women and 6 per cent men) followed by falling from commode, colliding with tap and electric shock.

Reasons of accidents:

The outcome of Table 2 showed that more than half of the women (60%) and men (54%) faced accidents in their house due to various reasons. Over 50 per cent accidents occurred due to low light levels or wet floor, improper furniture arrangement, slippery/glossy floors; improper height of the stairs/steps was also reported.

According to the U. S. Public Health Service Report (2009), a home provides shelter, privacy, and safety and protects our physical and mental health. A residence that fails to offer these essentials through adequately designed and properly maintained interiors and exteriors is not healthy housing. How homes are designed, constructed,

Table 2 : Reasons of accidents with frequency and percentage

Reasons of accidents	Men		Women	
	F	P	F	P
Wet floor	10	20.00	07	14.00
Low light level	06	12.00	05	10.00
Improper furniture arrangement	01	2.00	02	4.00
Slippery floor/glossy surface	04	8.00	03	6.00
High light of steps	03	6.00	03	6.00
Imbalance/weakness of subconscious/absence of mind high height of furniture	-	-	02	4.00
Improper placement of tap	-	-	01	2.00
Uneven floor level	-	-	-	-
Improper railing	01	2.00	01	2.00
Leg entangled in carpet	-	-	01	2.00
Tension/stress	-	-	-	-
Obstruction in view	-	-	-	-
Due to curtain	-	-	-	-
Reason not specified	01	2.00	02	4.00
Total	26	52.00	27	54.00

and maintained; their physical characteristics; and the presence or absence of safety devices have many effects on injury, illness, and mental health. Home conditions also influence the ability of people to participate fully in their community. Falls alone account for 53.7% of all unintentional home injury deaths. As a result of falls, many elders experience devastating consequences such as broken bones and head injuries. Among the elderly perceived sense of safety helps to a great extent prevention of accidents. An effort was made to study perceived sense of safety in different areas of home among the respondents.

Perceived sense of safety in the different areas of the home amongst the respondents:

Majority of the elderly women (94 %) and men (88%) had good sense of safety in the living room, bath room and kitchen of their homes. More than one fourth of the elderly men and women had fair sense of safety in the entrance area of their homes. More than half of the men and women had fair and good sense of safety in the staircase area of their home, respectively. Over 94 per cent of men and 88 per cent of women had good sense of safety in the overall home.

Co-efficient of correlation between age groups of elderly women and sense of safety in various areas of the home:

Results of Table 3 revealed that age groups between

Table 3 : Coefficient of correlation between age of elderly women and sense of safety

Age groups (years)	Overall safety	Entrance safety	Kitchen safety	Living room safety	Bathroom safety	Staircase safety
60-64	0.10	0.19	0.07	0.20	0.01	0.39**
65-69	0.05	0.27	0.02	0.40*	0.07	0.32*
> 70	0.59**	0.13	0.71**	0.47**	0.08	0.06

* and ** indicate significance of values at P=0.05 and 0.01, respectively

65-69 years showed significant correlation between sense of safety in living room and staircase (r = 0.40 and 0.32, respectively at 0.05 significant level). The elderly group of women was more than 70 years of age showed that overall safety (r = 0.59), kitchen safety (r = 0.71), living room safety (r = 0.47) was observed significant at 0.01 level. Thus it could be concluded that as the age increases the feeling of safety decreases and there is positive relationship between age and feeling of safety in the home.

Co-efficient of correlation between age groups of elderly men and sense of safety in various areas of the home:

It was found Table 4 that the eldest group of men was more than 70 years of age which showed entrance safety (r = 0.55), kitchen safety (r = 0.82), living room safety (r = 0.59), bathroom safety (r = 0.67) and staircase safety (r = 0.42) significant at 0.01 level and 0.05 level. Thus, it could be concluded that as the age increases the feeling of safety decreases and there is positive relationship between age and feeling of safety in the home.

Effect of age on sense of safety of women and men in overall home:

Result of Table 5 clearly shows that as the age increases the feeling of safety decreases. The significant difference was observed when the t-test was carried out between second and third age group. t- values were highly significant at 0.01 levels.

Conclusion and recommendation:

It was observed that in last two years majority of the elderly women had accidents due to electric shock in kitchen and bathroom areas of the home whereas in case of elderly men, the occurrence of accidents of slipping, falling and electric shocks were found due to low light levels, inadequate height of steps, slippery surface and poor electric connections. From the present study, it is evident that as the age increases the feeling of safety declines and there is positive relationship between age and feeling of safety.

Nowadays the young generation, generally migrates to distant places for jobs and establish their household there, therefore it becomes essential that elderly people must take care of themselves on their own. Simple precautions and adjustments can help ensure a safe,

Table 4 : Co-efficient of correlation between age of elderly men and sense of safety

Age groups (years)	Overall safety	Entrance safety	Kitchen safety	Living room safety	Bathroom safety	Staircase safety
60-64	0.07	0.31	0.20	0.00	0.08	0.20
65-69	0.08	0.35*	0.05	0.80	0.40*	0.90
> 70	0.23	0.55**	0.82**	0.59**	0.67**	0.42*

* and ** indicate significance of values at P=0.05 and 0.01, respectively

Table 5 : Effect of age on sense of safety

Group	Age (years)	Sense of safety			Sense of safety		
		No. of women	Mean	S.D	No. of men	Mean	S.D
1	60-64	21	273.04	14.52	23	277.30	11.45
2	65-69	18	290.66	12.28	21	267.40	11.17
3	>70	11	271.27	9.31	06	326.33	12.09
Mean contrast		Mean Difference		t-value	Mean contrast		t-value
1	2	17.62		8.82**	1	2	10.16
2	3	19.39		32.44**	2	3	59.19
1	3	1.77		23.91**	1	3	49.03

* and ** indicate significance of values at P=0.05 and 0.01, respectively

accident-free home. Many falls can be prevented amongst the elderly ind taking the necessary steps to “fall proof” a home which can help older persons continue to be independent and live in their own home with a new measure of safety. Subsequent extrinsic factors related to “seeing”, “stairs” and “slipping” are recommended to create a fall free home environment. By improving those items not marked, you can make your home a safer and more comfortable place to live. Home safety checklist for the elderly was found as:

Entrance:

Can you enter the house or apartment safely?, Is a secure railing present?, Can you view visitors prior to entry?, Is the lock in working order?

Living areas:

Is the doorway accessible? Is there an uncluttered walking pathway? Can you get up and down safely from sofa and chair? Can you open and close windows? Can you manage the television? Can you manipulate the light switches? Are cords out from beneath carpeting and furniture?

Bathroom:

Is the door way accessible? Is the bath mat or non-skid strips in place? Can you safely transfer to the toilet? Will a safety frame, raised seat or grab bar be needed? Can you reach the outlets? Can you manipulate the light switches? Can you functionally use the sink?

Stairway:

Is a secure handrail present? Is there adequate illumination? Is the carpet secure? Are the steps free of clutter?

There are few extrinsic factors pertaining to the hazardous environmental conditions and obstacles in the homes for the elderly. These include: Bed side rails and interfering with safe bed exits. Low-seated chairs. Low-seated toilet lacking sufficient grab bar support. Poor lighting. Slippery floor surface (wet or polished floors) and bedroom and hallway clutter.

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