



A comparison of lacking safety features in rural and urban households of Ludhiana district

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ABSTRACT

People consider home as the safest place. However, as a matter of fact, this place hides many hazards and people feel secure when they are at home. For them, home environment should adhere to utmost safety specification. Due to lacunas of safety specification home become hazardous place for their occupant. The present study, therefore, aims to study comparison of safety features in rural and urban households of Ludhiana district. The present study was exploratory in nature. Herein, an attempt was made to describe the situation, 120 households were randomly selected from both areas. Findings revealed that majority of rural households were lacking safety features like lack of safety caps on electric sockets (50.30%), uneven floor (75.71%), no slip mats in bathroom (90.00%), absence of handrails in bathroom (55.00%). The study also found that these safety features were only lacking by rural households as compared to urban households.

INTRODUCTION

People tend to spend more time at home than they do anywhere else particularly the non working population which comprises of children, elderly people and housewives. These are the people spending their maximum time at home in work, play and rest. A 'home' also includes any permanent or voluntary institution, such as home for older people or orphanage. Their perception of the environment around them is often limited and their lack of experience and development, such as their poor co-ordination and balance, can lead them to having an accident. A large number of accidents also come about

at home as we neglect small and simple detail while building up and decorating houses. There are many conditions which lead to accidents at home. These are task factors and personal environmental which may become cause of slips, trips, falls, burns and injuries at home. These type of injuries occurred mostly in rural households as compared to urban households as lacunas of safety features in arrangement of furniture and work centres. Thus, there arises an emerging need to pay attention on safety features of rural and urban households. Therefore, the present study was undertaken with view to compare the rural and urban households of Ludhiana district with following specific objective:

- To examine the lack of safety features leading to home accidents.
- To develop the home safety guidelines

MATERIAL AND METHODS

The study was conducted in rural and urban households of Ludhiana district. The sample was randomly selected from the rural and urban area of Ludhiana district. The total sample was consisting of 120 households, 60 from urban and 60 from rural area of Ludhiana district. The total sample from urban area was 60 *i.e.* 30 households from Model Town and 30 households from Kitchlu Nagar. Similarly, the total sample from rural area was 60 *i.e.* 30 households from Hussainpura Chotha and 30 households from Ladian Khurd. Data were collected by using self structured interview schedule and collected from both rural and urban households of Ludhiana.

OBSERVATIONS AND ANALYSIS

This section covers data pertaining to observed lack of safety aspects in public, activity and outer zones of selected houses, safety norm non adherence for specific housing features like flooring, electrical points, wires, storage areas and furniture.

Safety aspects lacking in public zones of selected houses :

Table 1 shows data regarding lacking safety aspects in public zones of the selected households. Public zones are the areas which are frequented by outsiders and the areas where most of the movements take place. For this study the public zones included stairs and entrance of the house (Kent and Pearce, 2006 and Lee *et al.*, 1999).

Stairs :

It may be observed that in more than half 56.67 per cent of the houses, the rail was provided only on one side of the stairs. This was followed by 11.67 per cent of houses where the stairs were not constructed according to the standard stair formula (conspicuous feature of rural houses). It can be further observed that slightly less than one third of houses had insufficient lighting and very few houses 13.33 per cent rail height is small. It is very significant to note that lack of all these safety features was observed in rural houses only. Other safety hazards which were not very common in houses included; 'spiral stairs', 'rail missing at small steps', 'uneven tread'. These were observed in rural houses only. There was highly significant difference between insufficient lighting, rail height is small and stair width too less. Wyatt *et al.* (1999) also inferred that consideration needs to be given to both

Lacking safety features	Rural (n=60)		Urban (n=60)		Total		Z value
	f	(%)	f	(%)	f	(%)	
Stairs							
Rail only on one side	34	(56.67)	34	(56.67)	68	(56.67)	0.00
Stair not according to formula	10	(16.67)	4	(6.67)	14	(11.67)	1.71
Insufficient light	18	(30.00)	0	(.00)	18	(15.00)	4.60**
Rail height is small	8	(13.33)	0	(.00)	8	(6.67)	2.93**
Stair width too less	5	(8.33)	0	(.00)	5	(4.17)	2.28*
Small landing space	2	(3.33)	1	(1.67)	3	(2.50)	0.58
Banister width more	0	(.00)	2	(3.33)	2	(1.67)	1.43
Landing space falling in traffic lanes	2	(3.33)	0	(.00)	2	(1.67)	1.43
Uneven tread and riser	1	(1.67)	0	(.00)	1	(.83)	1.00
Rail missing at small steps	1	(1.67)	0	(.00)	1	(.83)	1.00
Spiral stairs	1	(1.67)	0	(.00)	1	(.83)	1.00
Entrance							
Step at entrance	22	(36.67)	13	(21.67)	35	(29.17)	1.81
Entrance							
Narrow entrance	10	(16.67)	0	(.00)	10	(8.33)	3.30**
Barrier at entrance	0	(.00)	5	(8.33)	5	(4.17)	2.28

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

how the safety of stairs can be improved and weather a particular elderly person can safely cope with stairs (Gupta and Gill, 2017).

Entrance :

It was observed (Table 1) that 29.17 per cent houses had a step followed by entrance which increases the probability of an accident occurring and being injured. It was also observed that very few houses 8.33 per cent had narrow entrance and 4.17 per cent had barrier at entrance.

It may be concluded that number of safety hazards were found in the selected households and were more prevalent in rural houses. It is essential to have proper planning of stairs and entrances to avoid injuries and falls. Guiseppi *et al.* (2012) also mentioned about ill designed housing being one of the factor responsible for home accidents.

Safety aspects lacking in activity zones of selected houses :

Activity zones are quite hushed up areas were people are busy working and may become inattentive of their

surroundings. The activity zones in this study included kitchen and bathroom. Table 2 discloses data regarding lacking safety aspects in activity zones of selected households.

Kitchen :

It can be observed from Table 2 that maximum (48.33%) of the households had stored extra gas cylinder in kitchen itself specially in rural area all of them did so, followed by less than half 45.00 per cent respondents who had cook unit which being ‘unguarded’ had become unsafe. It was also observed in the table that 29.17 per cent of the households, gas burner was found near gas cylinder. It was conspicuously noted that kitchens in all the rural houses were potential hazards as 25.00 per cent of respondents kept their gas pipes were found dirty and greasy and they kept work counters overcrowded as followed by “poor light” as seen in 5.00 per cent houses.

Bathroom :

As far as bathroom is concerned it was seen in the table that majority (90.00%) households did not have non slip mats in their bathrooms and due to lack of the

Lacking safety features	Rural (n=60)		Urban (n=60)		Total		Z value
	f	(%)	f	(%)	f	(%)	
	Kitchen						
Extra gas cylinders stored within kitchen	42	(70.00)	16	(26.67)	58	(48.33)	4.75**
Unguarded cook unit	23	(38.33)	31	(51.67)	54	(45.00)	1.47
Gas burner near gas cylinder	19	(31.67)	16	(26.67)	35	(29.17)	0.60
Greasy floors	14	(23.33)	0	(.00)	14	(11.67)	3.98**
Gas pipe dirty/greasy	7	(11.67)	0	(.00)	7	(5.83)	2.73**
Overcrowding at work counters	7	(11.67)	0	(.00)	7	(5.83)	2.73**
Poor light	3	(5.00)	0	(.00)	3	(2.50)	1.75
Bathroom							
No non slip mats	60	(100.00)	48	(80.00)	108	(90.00)	8.52**
No hand rail/grab bars	60	(100.00)	7	(11.67)	67	(55.83)	10.28**
Wet and greasy floor	14	(23.33)	0	(.00)	14	(11.67)	3.98**
Taps too protruding	10	(16.67)	4	(6.67)	14	(11.67)	1.71
Hot water tap unmarked	10	(16.67)	0	(.00)	10	(8.33)	3.30**
Layer of soap on floor	7	(11.67)	0	(.00)	7	(5.83)	2.73**
Sharp edged buckets	5	(8.33)	2	(3.33)	7	(5.83)	1.17
Taps grooves ineffective	6	(10.00)	0	(.00)	6	(5.00)	2.51*
Unstable bathing stool	2	(3.33)	1	(1.67)	3	(2.50)	0.58
Gas geyser installed inside bathroom	2	(3.33)	0	(.00)	2	(1.67)	1.43

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

safety aspect maximum possibility of accidents occurrence was there especially older people. It was followed by more than half (55.00%) of householders who did not have hand rail or grab bars which shows lack of safety aspect for older people. Indo Asian News Service (2011) has also mentioned about such incidents. Lee *et al.* (1999) too mentioned about toilet being most common accident area in the home.

Balcony/ roof :

Open zones in a residential building include balcony, roof, courtyard etc. The National Building Code (2002) specifies the height of a railing in a balcony, lobby or roof-top to be 1.05 metres (3.44 feet) from the floor level. But in most of cases the builders ignore it and place a few metal rods instead of concrete wall to make it look attractive and to cut the costs. Data enfolded for safety aspects for open zones in Table 3 reveals that 7 houses were having balcony rail or parapet too low, it can cause serious injury or death and all these respondents were from rural area only. One house of urban area was seen having balcony banister too wide also. Neither too narrow balcony nor too low roof rail was seen. Although no written data is there to support these findings, but unreported such events can be encountered in plenty. Every now and then we keep hearing of incidents of fall from roof or balcony.

Open yard :

Data enfolded for lacking safety aspects in open yard (Table 3) revealed that outer flooring was uneven in maximum (31.67%) rural houses which is major risk for suffering serious injury, even clutter were scattered around the open yard which can result in fatal accidents

as seen in 10.00 per cent rural houses and wires hangings around in 6.67 per cent rural houses which were major risk to children and older people. None of the selected households were seen with too low cloth line, items lying with sharp edges.

Some guidelines for home safety :

Entrance of the home :

- Prefer single step than slopes.
- Isolated steps should be marked clearly.
- There should be banister with a hand rail when there are more than five steps.
- There should be provision of plenty headroom at entrance.
- Open stair wells, cellar entrances, lighting shafts etc. should be protected with a railing.
- Doormats should be properly placed at the entrance.
- To make a house user friendly for elderly, there should be no floor level differences in the house.
- Avoid any architectural feature that such people would trip over.
- The approach and entrance of the house should be well lit.
- There should be no thresholds at doors.

Stairs :

- Keep stairs clean and dry.
- All steps in a flight should be of same height.
- Stairs should be with vertical back wall.
- Avoid the spiral type staircase.
- There should have a handrail on both sides of stairs.
- Stairs opening on both sides should have secure

Lacking safety features	Rural (n=60)		Urban (n=60)		Total		Z value
	f	(%)	f	(%)	f	(%)	
	Balcony/roof						
Balcony rail/parapet too low	7	(11.67)	0	(.00)	7	(5.83)	2.73**
Balcony banister too wide	0	(.00)	1	(1.67)	1	(.83)	1.00
Open yard							
Flooring uneven	19	(31.67)	0	(.00)	19	(15.83)	4.75**
Clutter scattered around	6	(10.00)	0	(.00)	6	(5.00)	2.51*
Wires hanging around	4	(6.67)	0	(.00)	4	(3.33)	2.03*
Watering pipe lying in lawn	0	(.00)	3	(5.00)	3	(2.50)	1.75

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

banisters on both sides.

- There should be ample headroom at all the points of stairs.

- Stairs behind a door should have a landing at least 50cm long.

- Stairs behind a door should be clearly indicated by a distinctive notice.

- Use a non slippery material for making steps. If stairs are to be carpeted then non slippery or non skid carpets should be used and should be securely fastened. Damaged carpets should be repaired at time.

- Make a proper arrangement of lights on or around stairs to avoid falls. The light should be controlled by a two way switch on at the top, the other at the bottom of the flight.

- The riser (step's height) should be 7 or 7½ inches high and the tread (step's width) should be 10 or 11 inches wide.

Bathroom and W.C. (water closet) :

- Always keep bathroom floor clean and dry.

- Flooring should be such that it does not become slippery when wet, and should be electrically non-conducting.

- Bath and shower should have grip handles at suitable places.

- The floors of bath and shower should be flat, and made non slip either by having a rough surface, non slip strips, or by the use of rubber or plastic mats.

- Use permanent fixed geysers.

- Use safety caps for the electric sockets.

- Install grab bars or rails in bathroom as they help in standing from bath tub.

- All electric outlets should not be near the bath or shower area.

Kitchen :

- Install smoke alarms, fire extinguishers and exhaust fans kitchen.

- Flooring should be non skid type.

- Provide enough day light with ample window opening.

- Provide general and spot lightings with switch boards at entrance.

- Height and depth of hanging cabinets (above the work counter) should be such that panes may not bang on your head.

- Take care while working in the kitchen that no oily or other material is dropped on stove or oven as sometimes cooking material flows out which sticks to the oven or stove and catches fire.

- Lower cupboards should start minimum 3 inches above ground level for avoiding foot hurt.

- Electric switches should be installed away from sink and cook area.

- Provide night foot light.

Lighting and electrical installations :

- Light switches should near be entrance.

- Passages should have two way switches operating from either end.

- The electric cooker, dishwasher, washing machine and refrigerator should each have separate socket.

Other important tips for home safety :

- Keep a first aid kit at home, and regularly clean out medicine cabinet to dispose of expired medicines.

- Keep electrical appliances, plugs and cords in good condition. Also cover all electrical outlets and wall switches with cover plate, and replace any that are damaged. Electrical appliances should be unplugged when not in use.

- Leave space at the back of refrigerator to avoid short circuiting due to overheat.

- Place small stoves and heaters where they cannot be knocked over, and away from furnishings and flammable materials, such as curtains or rugs.

- Avoid anything that one may trip over.

- When you are burning candles inside your home, make sure that you open a window.

Conclusion :

It is concluded that it is really difficult of home occupant to reside in an accident prone homes as there are chances of unseen accidents, especially for elder people and children. It is clearly shown in results as discussed above that majority of rural households were lacking safety features like lack of safety caps on electric sockets, uneven floor (that was prevalent in rural areas), no slip mats in bathroom, absence of handrails in bathroom. The study also found that these safety features were only lacking by rural households as compared to urban households. Other safety hazards which were not

very common in houses included; 'spiral stairs', 'rail missing at small steps', 'uneven tread'. These were observed in rural houses only. Therefore, this study is useful for caring children and older people at home.

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