

Posture related problems faced by homemakers in organised and unorganised kitchens of Ludhiana district of Punjab

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ABSTRACT

The present study was undertaken to evaluate the problems of homemakers in organised and unorganised kitchens. For this purpose, five organised and five unorganised kitchens of Ludhiana city were selected to collect the data. The respondents were asked about the problems faced by them while working in their kitchens through an interview schedule. It was found that due to inadequate or unorganised storage units in the kitchens, subjects had to adopt awkward postures, which, in turn, leads to muscular injuries like pain in the back, neck and shoulder. Sometimes, the subjects also faced kitchen accidents while grasping to the things which were stored beyond their reach. Some modifications were suggested in the kitchens to reduce their injuries and to make the work easy.

Now-a days, the kitchen is becoming the most used room in majority of the homes. It is not only used for cooking and eating but also for social gathering. As a result, kitchen planning regarding such aspects as ergonomics and optimised work flow (distance, time) need to be taken into consideration while coming up with any kitchen design. The height, width and depth of working counters and storage units in the kitchen need to be considered. The organised kitchen creates a working environment that takes into account the accurate movements of the person using the kitchen. The ergonomic kitchen design should ensure that the kitchen is easier to work in and creates less stress on the body, otherwise it can affect the health of the homemakers. Further by organization of the unorganised kitchen based on functional storage principles, the frequency of postural change further reduced to 10 – 15 per cent thus insuring minimum discomfort and maximum efficiency and productivity (Verma, 2001). The ergonomic cost of work in the ergonomically sound kitchen can be reduced up to 47-50 per cent with organised layout of the kitchen (Oberoi, 2004). Comfortable designs of kitchen in

the home are very important in order to reduce the ergonomic cost of work and fatigue to the minimum as well as for the maintenance of good working posture (Varghese *et al.*, 1989).

Therefore, the present study was undertaken with the objectives to study the physical features of the organised and unorganised kitchen and to know the various postures related problems faced by the subjects in organised and unorganised kitchens.

A total of 120 homemakers of Ludhiana district of Punjab were selected to collect the data through an interview schedule. The subjects were asked about various posture related problems while working in their kitchens. The data on different physical features were also collected.

The results obtained from the present study are summarized below according to objectives of the study:

Physical features of the organized and unorganized kitchens :

The physical features of both organized and unorganized kitchen have been presented in Table 1.

It was observed that half of the unorganised kitchens had an area between 8' x 10' to 11' x 13', and organized kitchens (40.00 %) had an area less than 8' x 10'. It is evident from Table 1, majority of the unorganized kitchen (50.00 %) and organised (77.50 %) kitchens more located near to dining area. Majority of the unorganised and organised *i.e.* 95.00 per cent and 67.50 per cent, respectively had semi-modern standing kitchens. All unorganized kitchen respondents had closed type kitchen but 80.00 per cent of organized kitchen respondents had close type kitchens. Majority of the unorganised kitchens (32.50 %) faced North - West direction and maximum number of organised kitchens (40.00 %) faced North - West direction. Majority of the unorganised kitchens (67.50 %) had 'L-shaped' kitchen, and 62.50 per cent organised kitchen had 'U-shaped' kitchens (Table 1).

Posture related problems faced by the subjects in unorganized and organized kitchens:

The physical problems faced by subjects both in organized and unorganized kitchens while performing kitchen activities which were ranked on the basis of mean scores are presented in Table 2.

Data of Table 2 show that the major posture related problems faced by subjects while storing or restoring kitchen items in both and unorganised were re-standing from squatting position, performing activity in squatting posture, bending of back and knees, stretching of arm to reach the things and movement of neck/head as these problems got the ranks from I to IV, respectively. Verma (2001) also revealed that due to the frequency of changing postures, the homemakers were feeling uncomfortable and were trying to fit themselves to the task rather than fitting task to them. Whereas subjects felt less problems regarding twisting of waist and movement of leg as these problems got V – VII ranks. The least problems faced by subjects in both organised and unorganised included lifting arm to shoulder for placing things and raising on toes

to lift things (Fig. 1).

The subjects were made aware of the organization of the unorganized kitchen spaces based on the following functional storage principles given by Steidl and Bratton (1968) to reduce musculo- skeletal injuries and to maximize efficiency and productivity. The principles of functional

Table 1 : Physical features of the existing kitchens

Kitchen features	Unorganised percentage	Organised percentage
Total area of the kitchen		
Less than 8' x 10'	37.50	40.00
8' x 10' – 11' x 13'	50.00	25.00
11' x 13' – 16' x 18'	12.50	35.00
Location of the kitchen		
Near to dining area	50.00	77.50
Away from dining area	17.50	22.50
Outside area	32.50	-
Style of the kitchen		
Modular kitchen	-	32.50
Semi – modern standing kitchen	95.00	67.50
Sitting	5.00	-
Type of the kitchen		
Modern open	-	20.00
Closed	100.00	80.00
Direction of the kitchen		
North-East	17.50	30.00
North-West	32.50	40.00
South-East	27.50	10.00
South-West	22.50	20.00
Shape of kitchen		
L-shape	67.50	32.50
U-shape	12.50	62.50
Single wall	20.00	5.00

Table 2: Posture related problems faced by respondents while performing kitchen storage activities

	Unorganised		Organised	
	Mean score	Rank*	Mean score	Rank*
Movement of neck / head	1.38	IV	1.48	IV
Stretching of arm to reach the things	1.20	VI	1.50	III
Lifting of arm to shoulder height for picking / placing the things	1.08	VII	1.00	VII
Movement of leg	1.23	V	1.23	VI
Raising on toes to lifting things	1.03	VIII	1.00	VII
Bending down of back	1.40	III	1.75	II
Twisting of waist	1.38	IV	1.38	V
Bending on your knees	1.75	II	1.75	II
Performing activity in squatting posture	1.83	I	2.00	I
Re-standing from squatting position	1.83	I	2.00	I

*Ranks I to VIII indicate most problem to least problem

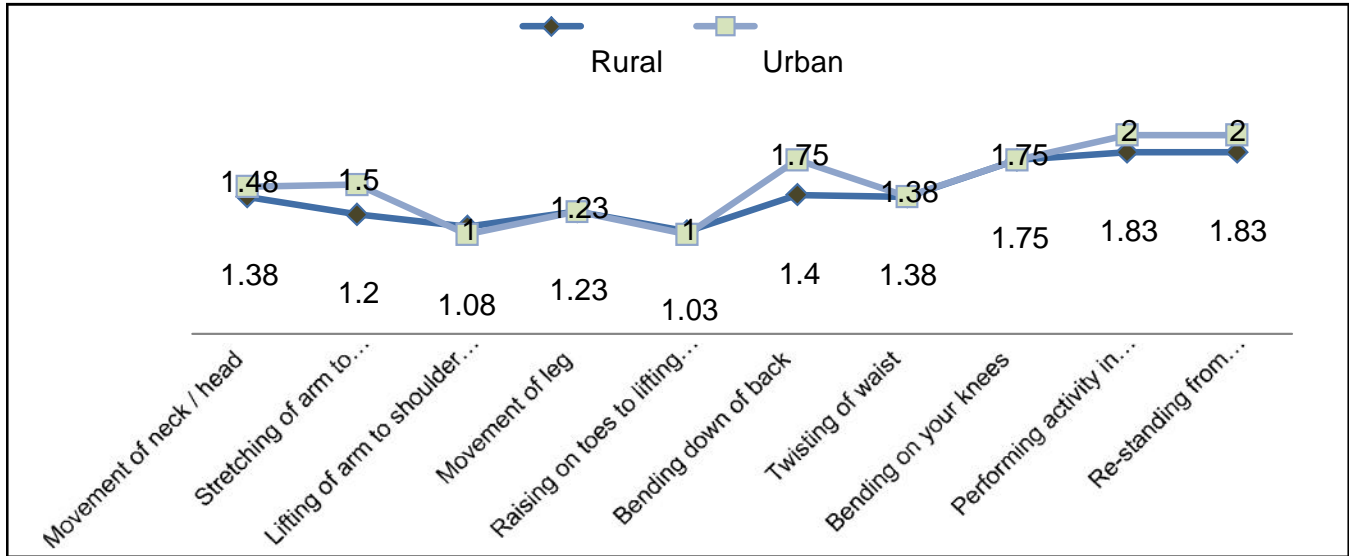


Fig. 1: Posture related problems faced by the respondents in organized and unorganized kitchens

kitchen storage are as :

- Store frequently used items at the place of first use
- Store the items within workers comfortable reach
- Place the items so that they are easy to see, reach, grasp and replace
- Provide sufficient clearance for grasping and replacing items
- Place frequently used heavy items on the lower shelves
- Store unlike items one row deep and one layer deep
- Stack only those items which have same dimensions

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