

## Association Of Musculoskeletal Disorders Among Housewives Due To Daily Household Activities

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**DOI:** <https://doi.org/10.63163/jpehss.v3i4.729>

### Abstract

**Background:** Household activities which are performed in awkward posture and continuously without any break can result in musculoskeletal symptoms that result in limitation of the efficiency of the work which is performed. As full time homemakers performed their household activities without any rest break and sometimes in awkward posture that puts stress on their joints and muscles that result in might be chances of musculoskeletal disorders. So, we aimed to evaluate the relationship of musculoskeletal disorders and household activities. **Objective:** The study aims to evaluate the association of musculoskeletal disorders among housewives because of daily household activities (cooking, washing, dusting, cleaning, and childcare). **Methodology:** Three hundred sixty-seven participants (housewives) having age of 20-60 across Lahore city were participated in this research study. The study was carried through the Nordic questionnaire and questions about posture. **Results:** Among 368 participants, majority of the housewives were working for 4-6 hours per day (61.7%), 23.6% were working for 7-9 hours per day and 14.1% were working for 1-3 hours and most of the females adapted both standing and sitting posture during daily household activities and during household activities the major areas that is involved in musculoskeletal symptoms are back (38.3%), knees (26.4%), shoulders (22.3%), neck (16.8%), wrist/hands (9.2%) and ankles/foot (7.6%). **Conclusion:** The study concluded that there is no association between Pain score and hours of working per day and there is significant association between Pain score and posture during working.

**Keywords:** Household activities, musculoskeletal disorders, awkward posture, musculoskeletal symptoms.

### Introduction

A Housewife is a woman who take care of all the household activities and manages their household work as an occupation. Household activities that are performed by housewives are cooking, take good care of her home by washing the house area and then cleaning and dusting, educate the children, washing utensils, clothes and ironing the clothes for her family member.(1) Housewives who perform any type of job may not involve in household activities than the women who are full-time housewives. (2) A study shows that women (housewives) carry out 54% of their household activities more than men.(3, 4)

In accordance with the WHO, the expression work-related MSD shows that the MSD resulted from any of the occupations. (5) Most persons have musculoskeletal pain due to any reason at some

point in life. (6) As housewives perform their different tasks as an occupation, these work-related MSD can result in a decrease in their daily tasks productivity, health loss and quality of life also reduced. In developing countries, musculoskeletal disorders pain is now very familiar and shows a prevalence of 11-60%. Musculoskeletal pain is now common health problem in females, especially in housewives (7, 8). Household activities are not only challenging but also repetitive because there is continuous pressure on muscles that cause weakness of the muscles, also sometimes there is pressure on tendons and bones that results in musculoskeletal symptoms. (9) Household tasks can be more energy-consuming than any other type of occupational work. As almost all household works are done by women, so musculoskeletal problems frequency is high in housewives. Research shows that household work and UE and low back disorders can be interrelated. Low back disorders are mostly associated with lifting heavy objects. (10) Household activities that include poor posture, twisting, bending, prolonged sitting or standing, and repetition of movements may result in MSK disorders in different body regions. (11) (12)

Women indulge in daily house activities such as dusting, washing, and cooking, etc. these repetitive activities affect their health condition because these activities put the greatest stress on their joints, muscles, and ligaments, which ultimately result in musculoskeletal pain. (13) Housewives are affected through daily household tasks because of poor body posture, movement repetition, and no relaxation period between activities. (14) Awkward posture was also associated with the musculoskeletal disorders. (15) Study results of Suthar & Kaushik (2011) estimated that 76.66% of women complain of neck pain and back pain and 46.66% of women complain of shoulder pain because of the uncomfortable posture they used and persistent duration of work without any break. The body region mostly involved in musculoskeletal pain is low back, shoulder, neck, wrist, and knees. As in kitchen work, mostly repetitive movements include stirring, chopping, utensils washing, and lifting heavy objects that result in pain in the shoulder and wrist joint that makes tasks difficult to perform. A study shows that housewives are more susceptible to shoulder pain than women who are doing a job. (10) According to institute of health metrics and Malaysia evaluation, back pain and neck pain are most common work related disorders that become the reason of disability. (16)

### **Objective**

The study aims to evaluate the association of musculoskeletal disorders among housewives because of daily household activities (cooking, washing, dusting, cleaning, and childcare).

### **Materials and methods**

The design of the study was Analytical cross-sectional study. 368 participants (housewives) across Lahore city having age group of 20-60 and involved in daily household activities were included in the study. Working women who are doing a job and pregnant women were excluded from study. Convenience sampling techniques were used for data collection. Standard Nordic questionnaire and work-related questionnaire about posture were used to access association between musculoskeletal disorders and household activities. The informed consent was signed by each participant before data collection. SPSS software 20 was used for analysis of data.

### **Results**

A total of 368 housewives were recruited for this study having mean age of 42 years with S.D 10.29. Housewives show major pain percentage in back (38.3%), knees (26.4%) and shoulders (22.3%). Majority of the housewives were working 4-6 hours per day (61.7%) while most of the females adopt both sitting and standing posture (73.4%) for their activities. Mean pain score was found 3.1 out of 24 with SD 2.35. P value 0.336 indicates that there is no association between Pain

score and hours of working per day while p value 0.011 indicates that there is significant association between Pain score and posture during working.

**Table 1 One Way ANOVA Association Between Pain Score And Hours Of Working Per Day**

PAIN-LEVELS	Mean	Std. Deviation	P VALUE
1- 3	4.0600	2.92358	>0.05
4-6	3.3921	2.22228	
7- 9	3.5517	2.36623	
9 & above	3.0000	1.41421	
Total	3.5191	2.36259	

**Table 2 One Way ANOVA Association Between Pain Score And Posture During Working**

	Mean	Std. Deviation	PVALUE
Standing	3.9375	3.01254	>0.05
Sitting	4.4375	2.42218	
Both A &B	3.3111	2.14170	
Total	3.5191	2.36259	

P value indicates that there is significant association between Pain score and posture during working.

<b>Association of musculoskeletal disorders among housewives because of daily household activities</b>			
<b>Neck: Have you ever had pain on any body part by doing daily household activities in the past 12 months?</b>		<b>Back: Have you ever had pain on any body part by doing daily household activities in the past 12 months?</b>	
	Observed N	Expected N	Residual
Yes	62	184.0	-122.0
No	306	184.0	122.0
Total	368		
<b>Neck: Have you ever had pain during the past 12 months that prevented you to doing your normal daily household activities?</b>		<b>Back: Have you ever had pain during the past 12 months that prevented you to doing your normal daily household activities?</b>	
	Observed N	Expected N	Residual
Yes	56	184.0	-128.0
No	312	184.0	128.0
Total	368		
<b>Neck: Have you ever had pain on any body part by doing daily household activities in the past 7 days?</b>		<b>Back: Have you ever had pain on any body part by doing daily household activities in the past 7 days?</b>	
	Observed N	Expected N	Residual
Yes	43	184.0	-141.0
No	325	184.0	141.0
Total	368		
	Observed N	Expected N	Residual
Yes	137	184.0	-47.0
No	231	184.0	47.0
Total	368		

**Shoulders: Have you ever had pain on any body part by doing daily household activities in the past 12 months?**

	Observed N	Expected N	Residual
Yes	82	184.0	-102.0
No	286	184.0	102.0
Total	368		

**Shoulders: Have you ever had pain during the past 12 months that prevented you to doing your normal daily household activities?**

	Observed N	Expected N	Residual
Yes	78	184.0	-106.0
No	290	184.0	106.0
Total	368		

**Shoulders: Have you ever had pain on any body part by doing daily household activities in the past 7 days?**

	Observed N	Expected N	Residual
Yes	52	184.0	-132.0
No	316	184.0	132.0
Total	368		

**Elbows: Have you ever had pain on any body part by doing daily household activities in the past 12 months?**

	Observed N	Expected N	Residual
Yes	11	184.0	-173.0
No	357	184.0	173.0
Total	368		

**Elbows: Have you ever had pain during the past 12 months that prevented you to doing your normal daily household activities?**

	Observed N	Expected N	Residual
Yes	10	184.0	-174.0
No	358	184.0	174.0
Total	368		

**Elbows: Have you ever had pain on any body part by doing daily household activities in the past 7 days?**

	Observed N	Expected N	Residual
Yes	12	184.0	-172.0
No	356	184.0	172.0
Total	368		

**One or both hips/thighs : Have you ever had pain on any body part by doing daily household activities in the past 12 months?**

	Observed N	Expected N	Residual
Yes	22	184.0	-162.0
No	346	184.0	162.0
Total	368		

**One or both hips/thighs : Have you ever had pain during the past 12 months that prevented you to doing your normal daily household activities?**

	Observed N	Expected N	Residual
Yes	22	184.0	-162.0
No	346	184.0	162.0
Total	368		

**One or both hips/thighs : Have you ever had pain on any body part by doing daily household activities in the past 7 days?**

	Observed N	Expected N	Residual
Yes	17	184.0	-167.0
No	351	184.0	167.0
Total	368		

**One or both knees: Have you ever had pain on any body part by doing daily household activities in the past 12 months?**

	Observed N	Expected N	Residual
Yes	97	184.0	-87.0
No	271	184.0	87.0
Total	368		

**One or both knees: Have you ever had pain during the past 12 months that prevented you to doing your normal daily household activities?**

	Observed N	Expected N	Residual
Yes	84	184.0	-100.0
No	284	184.0	100.0
Total	368		

**One or both knees: Have you ever had pain on any body part by doing daily household activities in the past 7 days?**

	Observed N	Expected N	Residual
Yes	98	184.0	-86.0
No	270	184.0	86.0
Total	368		

**Wrists/hands: Have you ever had pain on any body part by doing daily household activities in the past 12 months?**

	Observed N	Expected N	Residual
Yes	34	184.0	-150.0
No	334	184.0	150.0
Total	368		

**Wrists/hands: Have you ever had pain during the past 12 months that prevented you to doing your normal daily household activities?**

	Observed N	Expected N	Residual
Yes	32	184.0	-152.0
No	336	184.0	152.0
Total	368		

**Wrists/hands: Have you ever had pain on any body part by doing daily household activities in the past 7 days?**

	Observed N	Expected N	Residual
Yes	25	184.0	-159.0
No	343	184.0	159.0
Total	368		

**One or both ankles/feet: Have you ever had pain on any body part by doing daily household activities in the past 12 months?**

	Observed N	Expected N	Residual
Yes	28	184.0	-156.0
No	340	184.0	156.0
Total	368		

**One or both ankles/feet: Have you ever had pain during the past 12 months that prevented you to doing your normal daily household activities?**

	Observed N	Expected N	Residual
Yes	20	183.5	-163.5
No	347	183.5	163.5
Total	367		

**One or both ankles/feet: Have you ever had pain on any body part by doing daily household activities in the past 7 days?**

	Observed N	Expected N	Residual
Yes	19	184.0	-165.0
No	349	184.0	165.0
Total	368		

## Discussion

Housewives or homemakers play a significant role in the society. They perform multilevel tasks in large number of hours with the repetitive posture such as repetition in hand movements, kneeling, bending, and squatting. These posture can associated with the musculoskeletal pain. (17) The study data collected through the female population (housewives) across the Lahore city. The data collected through the manual questionnaire. 368 participants (housewives) were selected for study and the mean age of the participants are 42 years. Past studies shows that 38.8% of peoples among age 40-54 were afflicted with musculoskeletal disorders. (13)

The study result shows that due to daily household activities, housewives shows major percentage of pain in back (38.3%), knees (26.4%), shoulders (22.3%), neck (16.8%), wrist/hands (9.2%) and ankles/foot (7.6%). In this study, 61.7% of women are working 4-6 hours per day and 23.6% of females are working 7-9 hours and 14 % percent women's works 1-3 hours. 73% of the housewives adopt both sitting and standing posture for their household activities and 17.9% housewives adapted standing and 8.7 % housewives adapted sitting posture. The ANOVA association between pain score and hours of working per day indicates no association between pain score and hours working per day (p value = 0.336) while ANOVA association between pain score and posture during working shows significant association (p value= 0.011). As posture play an important role in every type of activities even in job, so awkward posture puts greatest stress on muscles and joints. Repetitive movements along with incorrect posture and sometimes no rest in between the activities can result in musculoskeletal pain so the data analysis shows that the great role of posture during working.

## Conclusion and Recommendations

This study concluded that there is no association between Pain score and hours of working per day and there is significant association between Pain score and posture during working.

The research can be further conducted in different areas within the country. As that of this research same research can be conduct on other occupations such as garments worker

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