

Research Article

Work related Musculoskeletal Disorders among Housewives: Ergonomic issues

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Received 01 March 2021, Accepted 17 April 2021, Available online 19 April 2021, Vol.11, No.2 (March/April 2021)

Abstract

In this paper, an extensive survey for research to analyse reasons of musculoskeletal complaints among housewives was conducted. The objectives of the research were to explore the musculoskeletal disorders which housewives face as an effect of their daily household activities, to identify the age and percentage of housewives affected and to identify the commonly involved reasons. These were achieved by collecting the data of 150 housewives (sample size) through a questionnaire designed by authors based Nordic Musculoskeletal Questionnaire which was circulated among the housewives. Descriptive statistics were used for data analysis which focused on bar charts, pie charts and tables. From the collected sample size about 88% of housewives suffered from musculoskeletal complaints. And the most commonly affected age groups were 31-40 and 41-50 years. The most affected body part was the Lower back (57%).

Keywords: Work-related Musculoskeletal Disorders, domestic workers, Questionnaire design, survey-based research

1. Introduction

Today is the era of women who have diverse roles in society. Women in contemporary society are often saddled with multitasking-the responsibility of a full-time professional job besides domestic chores. Most of them are involved in arduous household work (Payel Maity *et al*, 2014). Homemaking and kitchen tasks are a labor conventionally performed by women, spending approximately 3.2 hours in India. Chopping, stirring, and lifting utensils were found to be complex activities, requiring multiple changes in posture, whereas mopping kitchen platforms and utensil washing was found to be time-consuming tasks. It requires substantial and sustained physical repetitive movements along with sustained work postures which can lead to various musculoskeletal disorders (Sonal Mahendra Kumar Sharma *et al*, 2019).

Women work for longer hours and contribute substantially to family income. Women do more work than men is a known fact. The daily work schedule of rural women is very challenging and laborious. In addition to household work, the other time and energy-demanding activity for women is care of livestock. The resultant is that women are overburdened as well as at continuous health risk. Women suffer from multiple musculoskeletal problems that significantly damage their activities of daily living.

In the home and workplaces where women perform tasks even though sitting, standing, bending, twisting, awkward posture, duration of work and inadequate rest-pause are associated with the occurrence of serious musculoskeletal problems and musculoskeletal disorders (Payel Maity *et al*, 2016).

One of the prominent causes of physical impairment is Musculoskeletal disorders (MSDs). Traditional homemaking is a task that requires substantial and sustained physical repetitive movements. The presence of awkward work postures and patterns causes musculoskeletal pain. In this paper, the authors studied the risk factors among the housewives that contributed to their work-related musculoskeletal problems.

1.1 Musculoskeletal Disorders

According to the National Institute for Occupational Safety and Health, musculoskeletal disorder (MSD) is a damage that affects the musculoskeletal system of the human body, especially at bones, spinal discs, tendons, joints, ligaments, cartilage, nerves, and blood vessels. Such injuries may result due to repetitive motions, forces, and vibrations on human bodies during executing certain job activities. Previous injuries, physical condition, heredity, pregnancy, lifestyle, and poor diet are the factors that contribute to the musculoskeletal symptoms (Memon *et al*, 2019).

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DOI: <https://doi.org/10.14741/ijcet/v.11.2.14>

Musculoskeletal disorders (MSDs) are conditions that can affect your muscles, bones, and joints. MSDs are common and your risk of developing them increases with age. The severity of MSDs can vary. In some cases, they cause pain and discomfort that interferes with everyday activities. Early diagnosis and treatment may help ease symptoms and improve long-term outlook (Cherney *et al*, 2018).

1.2 Work-related Musculoskeletal Disorders (WMSD)

Work-related musculoskeletal disorders (WMSD) are conditions in which:

1. The work environment and performance of work contribute significantly to the condition
2. The condition is made worse or persists longer due to work conditions (Government of Canada, 2014).

Work-related musculoskeletal symptoms can be observed at workplaces when there is a discrepancy between the physical capacity of the human body and the physical requirements of the task. Musculoskeletal disorders can be related to work activities and conditions, and they could significantly contribute to the development of MSDs. However, these are not necessarily the only causes or significant risk factors (Memon *et al*, 2019).

1.3 Risk Factors of WMSDs

WMSDs arise from arm and hand movements such as bending, straightening, gripping, holding, twisting, clenching and reaching. These common movements are not particularly harmful in the ordinary activities of daily life. What makes them hazardous in work situations is the continual repetition, often in a forceful manner, and most of all, the speed of the movements and the lack of time for recovery between them. WMSDs are associated with work patterns that include:

- Fixed or constrained body positions.
- Continual repetition of movements.
- Force concentrated on small parts of the body, such as the hand or wrist.
- A pace of work that does not allow sufficient recovery between movements (Government of Canada, 2014).

1.4 Symptoms of WMSDs

Pain is the most common symptom associated with WMSDs. In some cases, there may be joint stiffness, muscle tightness, redness and swelling of the affected area. Some workers may also experience sensations of "pins and needles," numbness, skin color changes, and decreased sweating of the hands.

WMSDs may progress in stages from mild to severe.

Early-stage: Aching and tiredness of the affected limb occur during the work shift but disappear at night and during days off work. No reduction of work performance.

Intermediate stage: Aching and tiredness occur early in the work shift and persist at night. Reduced capacity for repetitive work.

Late-stage: Aching, fatigue, and weakness persist at rest. Inability to sleep and to perform light duties.

Not everyone goes through these stages in the same way. It may be difficult to say exactly when one stage ends and the next begins. The first pain is a signal that the muscles and tendons should rest and recover. Otherwise, an injury can become longstanding, and sometimes, irreversible. The earlier people recognize symptoms, the quicker they should respond to them (Government of Canada, 2014).

1.5 Most Affected areas

The most affected area of the musculoskeletal system, including the following:

- neck
- shoulders
- wrists
- back
- hips
- legs
- knees
- feet
- fingers

1.6 Treatment of WMSDs

The treatment of WMSDs involves several approaches including the following:

- Restriction of movement.
- Application of heat or cold.
- Exercise.
- Medication and surgery.

2. Objective

The main objective of the study was to explore the musculoskeletal disorders which housewives face as an effect of their daily household activities.

2.1 Specific Objectives

1. Find the number of housewives affected by musculoskeletal disorders.
2. Identify the common areas affected.
3. Identify the level of discomfort.
4. Find the period of the discomfort.

3. Literature Review

Md. Golam Kibria in his paper defined musculoskeletal disorders (MSD) as a significant public health problem due to their high impact on disability, personal suffering, and absence from work, disability, and their direct and indirect costs to the health care system. Musculoskeletal disorders (MSDs) comprise a major health problem for the general population, affecting their quality of life, demanding increased health care and organization.

Laura Punnett *et al.* in their paper, which was published in 2004, discussed that Musculoskeletal disorders (MSDs) are widespread in many countries, with substantial costs and impact on quality of life. Although not uniquely caused by work, they constitute a major proportion of all registered and/or compensable work-related diseases in many countries.

The authors also mentioned that accurate data on the incidence and prevalence of musculoskeletal disorders are difficult to obtain, and official statistics are difficult to compare across countries.

Nabeela Nazish *et al.* in their paper proposed that Musculoskeletal conditions have the 4th greatest impact on the overall health of the world population, affecting more than 1.7 billion people worldwide which results in an increased overall rate of disability. According to the author, many studies found women have a higher musculoskeletal morbidity than men in the general population as well as in different occupational groups. The exact reason for these gender differences is unknown. According to the traditional model, biological differences in body shape, size, muscle mass, muscle strength and aerobic capacity, in combination with different physical demands, are sufficient causes for the observed differences. The persistence of Musculoskeletal pain results in decreased productivity which in the end leads to poor quality of life.

Peter Buckle discussed that there has been an increasing effort in recent years to investigate the causes of Musculoskeletal disorders (MSDs) and to take action to prevent them in his paper. This has led to increasing recognition from workers, employers and government agencies that a strong relationship exists between factors within the working environment and the development of MSDs and that these conditions result in significant sickness absence and reduced productivity.

Babak Fazli *et al.* discussed in their paper, which was published in 2016, that mismatch between the human capacity and physical requirements of the job, can lead to MSDs in different job groups such as housewifery. Also, some studies have shown that the prevalence of pain, location of pain and other symptoms may be affected by posture and work habits and other demographic factors. 6-9 The previous studies suggest that the prevalence of musculoskeletal pain among women is more common than men and also older women suffer from musculoskeletal pain more than older men.

Md. Golam Kibria in his paper discussed that some occupations that require lifting and bending posture can lead to carpal tunnel syndrome and this disorder is more common in women than men. Also, studies have shown that when women have exposure to repetitive jobs and carry work by awkward posture have complained of neck and shoulder pain more than men. Payel Maity *et al.* in their paper mentioned that home-based industrial work is one of the most tedious professions, requiring long hours of static work. As a result, it is a high-risk occupation for developing MSDs as awkward posture, repetitive movements, long working hours and inadequate rest pauses are associated with those jobs. The prevalence of WMSDs has been well recognized in occupational tasks with awkward postures.

Md. Golam Kibria in his paper discussed the situation of women in rural Indian who are particularly vulnerable because she plays the central role in house making. She builds the entire household but ends up neglecting her health by not paying enough attention to herself and her fitness. In the Indian setup, the Indian housewives suffer from a variety of musculoskeletal problems but fail to take any substantial treatment.

4. Methodology

This section outlines the method of the study design to meet the study aim and objectives.

3.1 Study Design and Area

This study aimed to find out the possible work-related musculoskeletal disorders among the housewives in India. As this is a survey on work-related musculoskeletal disorders among housewives in India, so the area of study was the musculoskeletal area.

3.2 Sample size and selection criteria

1. Sample size

The sample size for the survey was 150.

2. Inclusion criteria

- Age level should be under 20-70 years. As this is the working age.
- Participants having any kind of musculoskeletal complaints or not.
- Housewives having maidservant or not, both are selected.
- Willingly to participate in the research.

3. Exclusion criteria

- Age levels below 20 years and above 70 years will be excluded.
- Pregnant housewives.

- Those who will not fulfill the criteria will be excluded.

3.3 Method of data collection

In this study, data was collected through a questionnaire which was circulated among the housewives in form of a google form.

The google form included 70 questions that were related to the musculoskeletal pains among the housewives. Questions were set in a logical order. The areas which were considered in the form were neck, upper back, lower back, shoulder, elbow, wrist, fingers, knee, ankle, foot and heel. Photos of these musculoskeletal disorders which show the areas where the pain can be felt were also included in the google form which eased the understanding of housewives. English, Hindi and Marathi versions of questions were used for the participants easy understanding.

The link of the google form was circulated through WhatsApp and E-mail to participants. Once the form was circulated phone calls were made to the participants to make them understand the aim and objective of our survey and the importance to know about the musculoskeletal disorders which they suffer and they are unaware of. The sample of the questionnaire is given in figure 1.

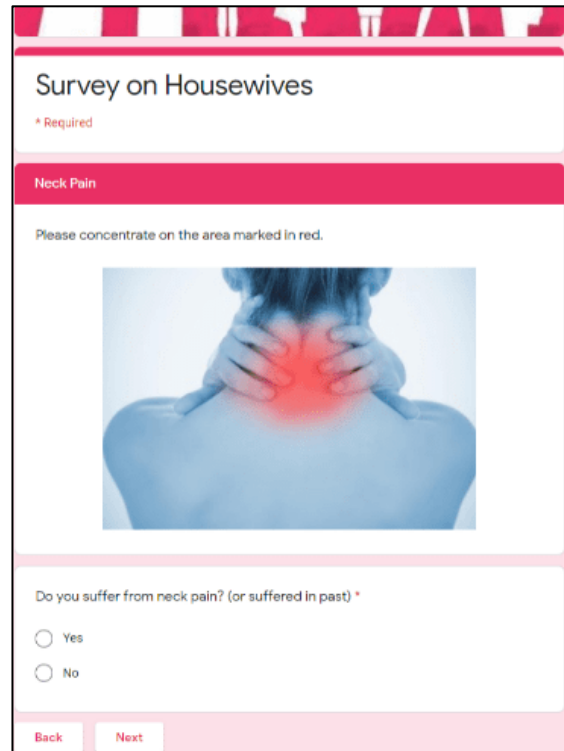
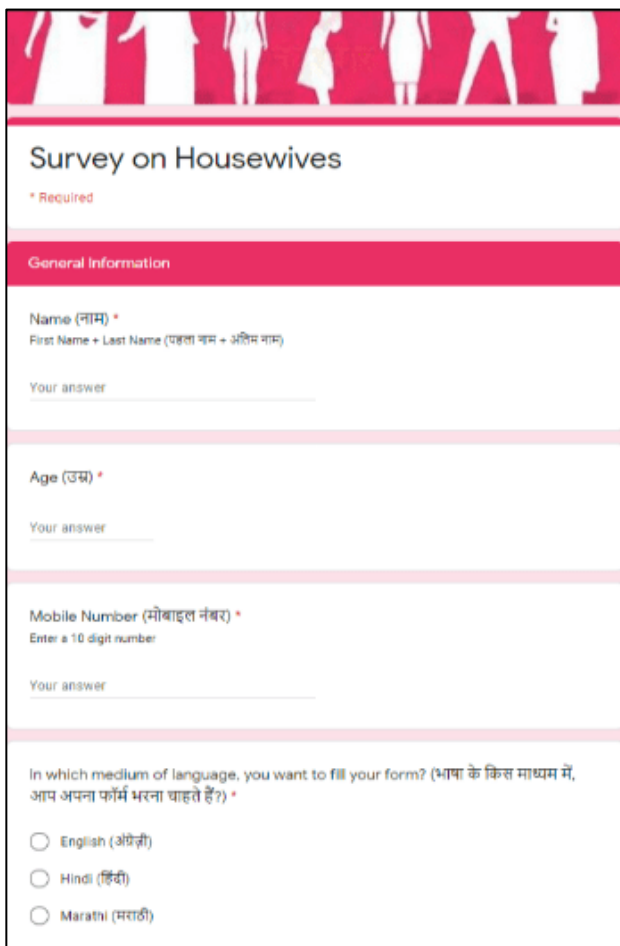


Fig.1 Musculoskeletal Questionnaire



3.4 Informed consent and Ethical consideration

For this study, permission was taken from each participant through phone calls to whom the google form link was sent. The participants were informed about their role in the study process. They were also informed that if they wish, they were free to withdraw their name from the study at any time and the information provided by the particular might be published but their name and address would not be used in the study project. The questions in the google form were asked with due respect so that we didn't hurt any of their feelings.

3.5 Data analysis

Data analysis is a crucial part of any study or research. The responses collected from the google form were put in a table in a google sheet and then all the responses were analysed. The analysis was done in a statistical way in which bar graphs, tables and pie charts were included.

3.6 Limitations of the study

The study was conducted during the novel Covid-19 pandemic situation, due to which there were many limitations to this study. The limitations are:

1. The sample size was small for the study.
2. The study was done in a short period, so all factors covering musculoskeletal problems related to housewives may not be covered.

3. As the study was conducted on an online platform, the importance of the study could not be properly addressed to the participants.

4. Results

The main objective of the study was to explore the musculoskeletal disorders which housewives face during their daily household activities. A total 150 number of responses was collected through google form and stored in Microsoft excel. The descriptive data was collected and calculated as percentages and presented by using bar graphs and pie charts.

4.1 Distribution of Musculoskeletal Disorders

Among the collected data of 150 participants 88% of housewives are suffering from musculoskeletal disorder problems and 12% of housewives are not having any of the musculoskeletal disorder problems. The distribution of musculoskeletal disorders among housewives is shown in Figure 2.

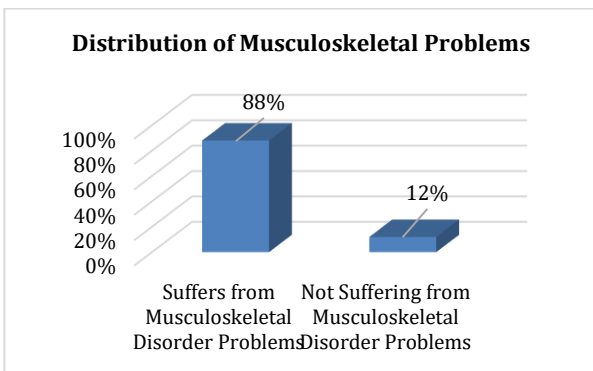


Fig.2 Distribution of Musculoskeletal Problems

4.3 Age Distribution of respondents

The age band distribution among the collected data of 150 housewives is as follows: 20-30 years :12.67%; 31-40 years: 27.33%; 41-50 years: 44.67%; 51-60 years: 13.33%; 61-70 years: 2%. The mean age of all the respondents was 42 years. The age distribution of housewives is shown in Figure 3.

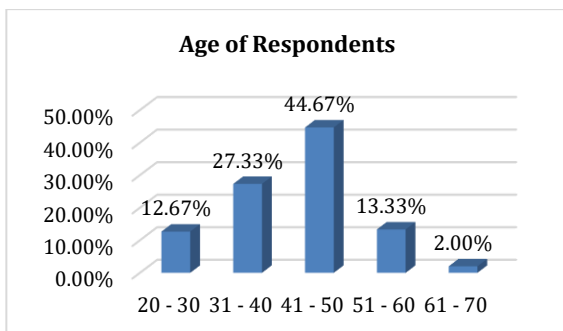


Fig.3 Age of Respondents

The below table shows the number of musculoskeletal problems housewives suffer according to their age. The housewives between the age of 31-40 and 41-50 are the most affected ones i.e. almost 80-90% of housewives.

Table 1 Housewives affected from musculoskeletal problems according to their Age group

Age of Respondent	Musculoskeletal Complaints		Total
	Yes	No	
20 - 30	18	1	19
31 - 40	32	9	41
41 - 50	60	7	67
51 - 60	19	1	20
61 - 70	3	0	3
Total	132	18	150

4.2 Daily Working Hours

Among the housewives 4.67% were working for 1-3 hours, 25.33% for 4-6 hours, 35.33% for 6-8 hours and 34.67% for more than 8 hours in a day. The daily working hours of the housewives are shown in Figure 4.

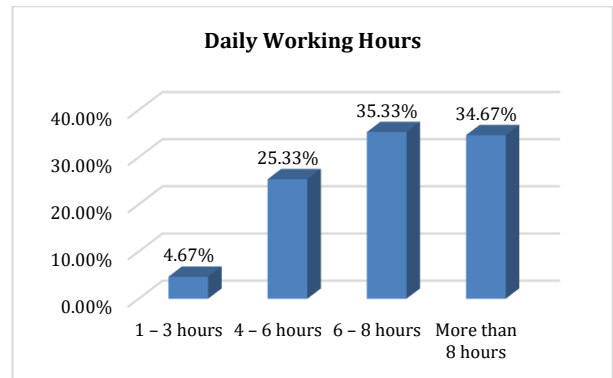


Fig.4 Daily Working Hours

The below table shows the number of musculoskeletal problems, housewives suffer according to their daily working hours. The housewives who work for 6-8 hours and more than 8 hours in a day are the most affected ones i.e. almost 85-90%.

Table 2 Housewives affected from musculoskeletal problems according to their working hours

Working hours in a day	Musculoskeletal Complaints		Total
	Yes	No	
1 - 3	5	2	7
4 - 6	34	4	38
6 - 8	46	7	53
More than 8	47	5	52
Total	132	18	150

4.4 Distribution of Health Problems

Among the housewives about 3.18 % have asthma, 14.01% have blood pressure, 4.46% have diabetes,

3.18% have hypertension, 9.55% have some other health problems and 65.61% have no health-related problems. The distribution of health problems among housewives is shown in Figure 5.

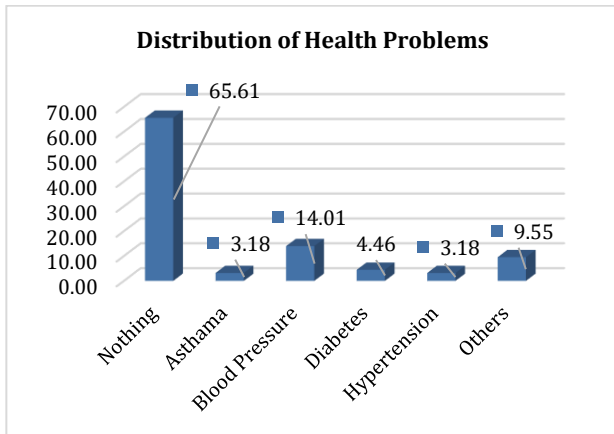


Fig.5 Distribution of Health Problems among Housewives

4.5 Daily Sleeping Hours

Among the housewives, 57.33% sleep for 6-7 hours, 30.67% for 7-8 hours, 9.33% less than 6 hours and 2.67% for more than 8 hours. The distribution of daily sleeping hours of housewives is shown in Figure 6.

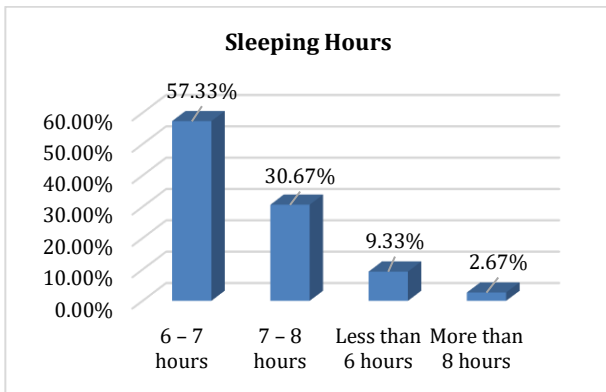


Fig.6 Sleeping Hours

The below table shows the number of musculoskeletal problems housewives suffer according to their daily sleeping hours. The housewives who sleep for less than 6 hours in a day are 100% affected by musculoskeletal disorder problems.

Table 3 Housewives affected from musculoskeletal problems according to their Sleeping Hours

Sleeping hours in a day	Musculoskeletal Complaints		Total
	Yes	No	
Less than 6	14	0	14
6 - 7	76	10	86
7 - 8	39	7	46
More than 8	3	1	4

4.6 Distribution of having domestic help

Among the 150 participants, 51.33% of housewives get domestic help in their daily household activities and 48.67% of housewives do not get help in their household activities. The distribution of housewives having domestic help for their daily household activities is shown in Figure 7.

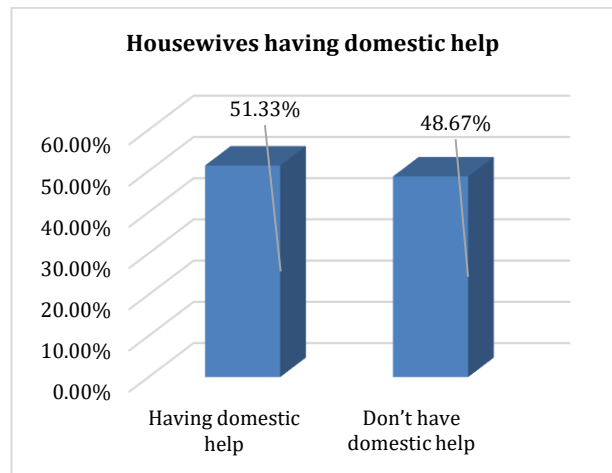


Fig.7 Housewives having Domestic help

4.7 Neck Pain

Among the collected data of 150 participants, 49.33% of housewives suffered from musculoskeletal problems of the neck and 50.67% did not suffer.

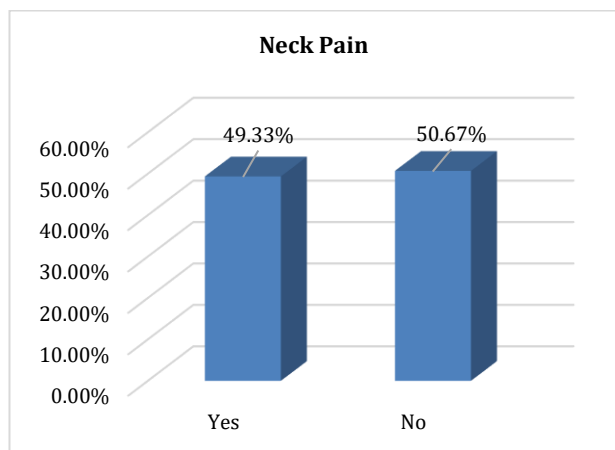


Fig.8 Housewives experiencing Neck pain

Below pie charts shows the type of pain and the duration of neck pain housewives suffer. The majority of housewives suffer from occasional and irregular types of neck pain. The majority of the housewives have started feeling the musculoskeletal problem of neck pain in the duration of 0-6 months and more than 3 years.

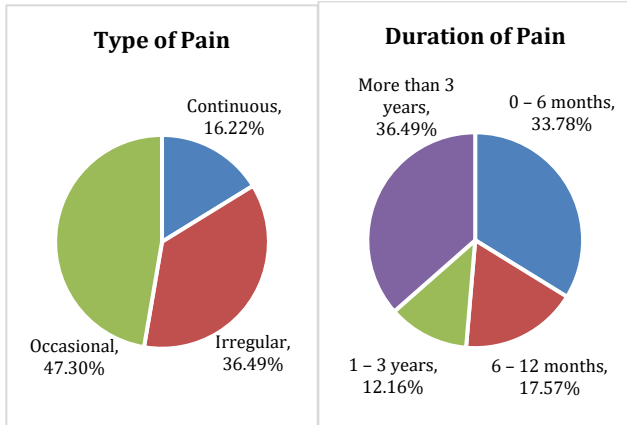


Fig.9 Type and Duration of Neck pain

4.8 Upper Back Pain

In this study, 41.33% of housewives suffered from musculoskeletal problems of the upper back and 58.67% did not suffer.

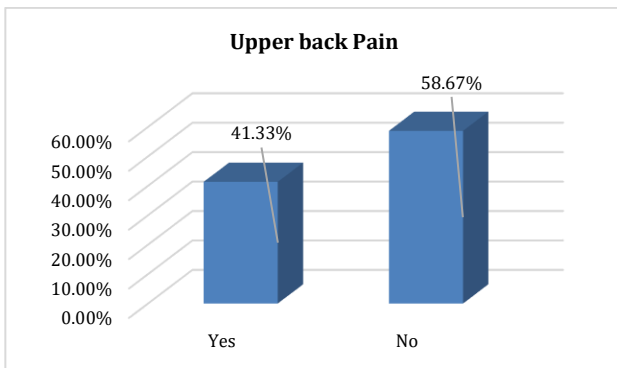


Fig.10 Housewives experiencing Upper back pain

Below pie charts shows the type of pain and the duration of upper back pain housewives suffer. The majority of housewives suffer from occasional and irregular type of upper back pain. The majority of the housewives have started feeling the musculoskeletal problem of upper back pain in a duration of 0-6 months and more than 3 years.

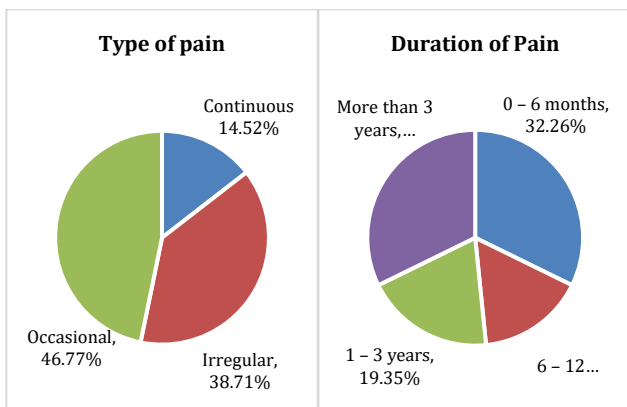


Fig.9 Type and Duration of Upper back pain

4.9 Lower Back Pain

In this study, 57.33% of housewives suffered from musculoskeletal problems of the lower back and 42.67% did not suffer.

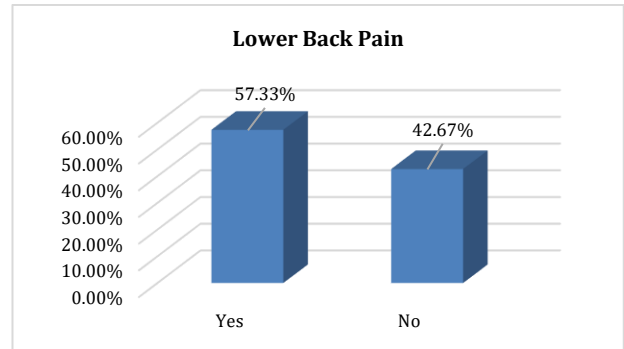


Fig.11 Housewives experiencing Lower back pain

Below pie charts shows the type of pain and the duration of lower back pain housewives suffer. The majority of housewives suffer from occasional and irregular types of lower back pain. The majority of the housewives have started feeling the musculoskeletal problem of lower back pain in a duration of 0-6 months and more than 3 years.

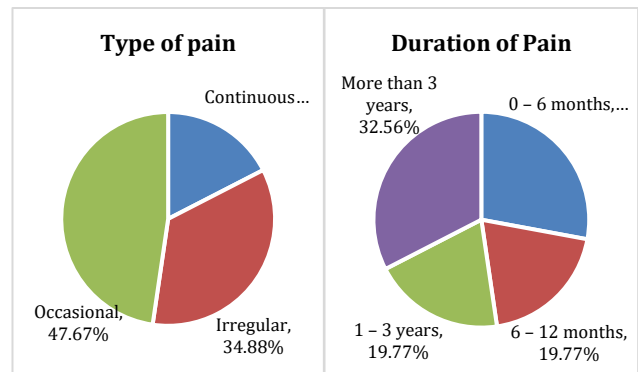


Fig.12 Type and Duration of Lower back pain

5.10 Shoulder Pain

In this study, 21.33% of housewives suffered from musculoskeletal problems of the shoulder and 78.67% did not suffer.

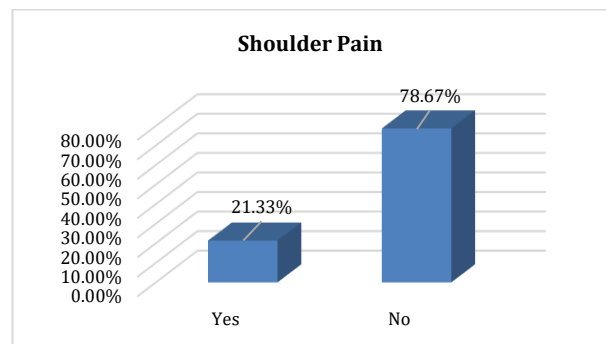


Fig.13 Housewives experiencing Shoulder pain

Below pie charts shows the type of pain and the duration of shoulder pain housewives suffer. The majority of housewives suffer from occasional and continuous type of shoulder pain. The majority of the housewives have started feeling the musculoskeletal problem of shoulder pain in duration 0-6 months and more than 3 years.

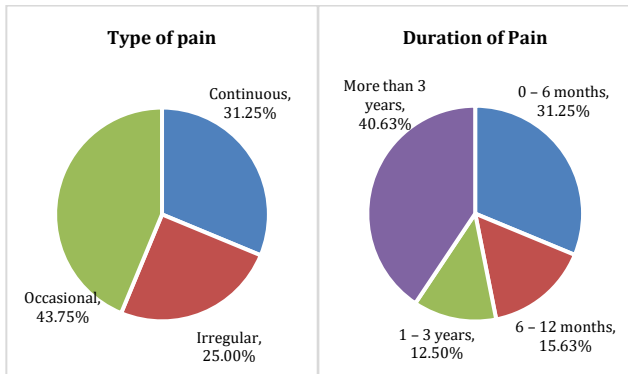


Fig.14 Type and Duration of Shoulder pain

4.10 Elbow Pain

In this study, 10 % of housewives suffered from musculoskeletal problems of the elbow and 90 % did not suffer.

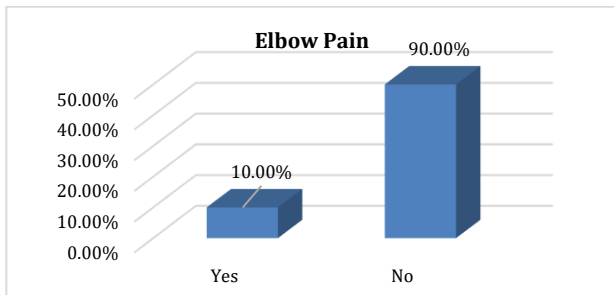


Fig.15 Housewives experiencing Elbow pain

Below pie charts shows the type of pain and the duration of elbow pain housewives suffer. The majority of housewives suffer from occasional type of elbow pain. The majority of the housewives have started feeling the musculoskeletal problem of elbow pain in duration 0-6 months and more than 3 years.

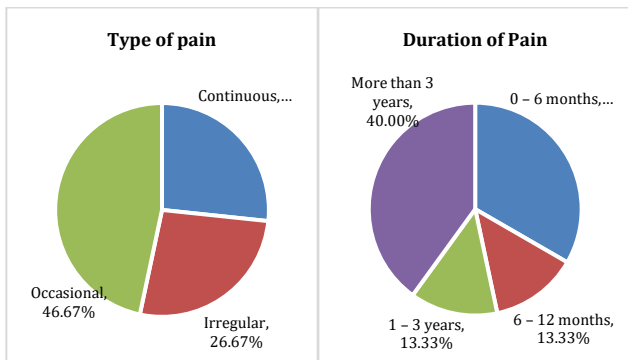


Fig.16 Type and Duration of Elbow pain

4.11 Wrist Pain

In this study, 11.33% of housewives suffered from musculoskeletal problems of the wrist and 88.67% did not suffer.

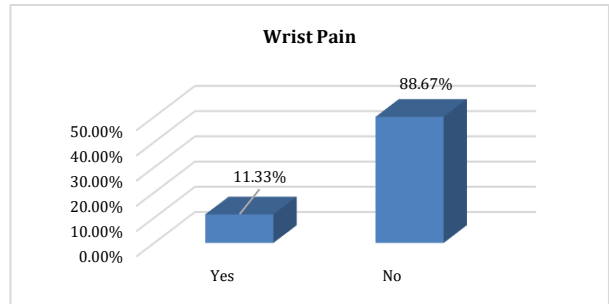


Fig.17 Housewives experiencing Wrist pain

Below pie charts shows the type of pain and the duration of elbow pain housewives suffer. The majority of housewives suffer from occasional and irregular types of elbow pain. The majority of the housewives have started feeling the musculoskeletal problem of elbow pain in duration 0 - 6 months and more than 3 years.

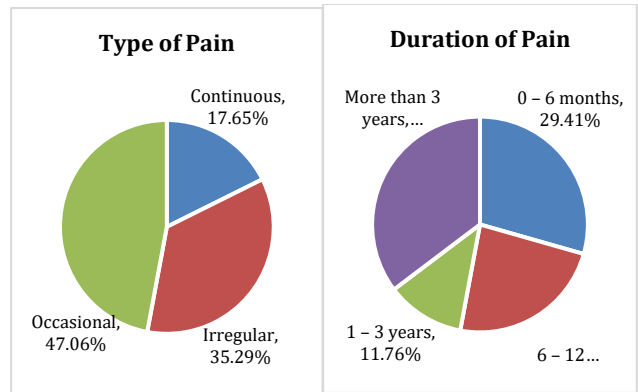


Fig.18 Type and Duration of Wrist pain

5.12 Finger Pain

In this study, 12.67 % of housewives suffered from musculoskeletal problems of pain in fingers and 87.33 % did not suffer.

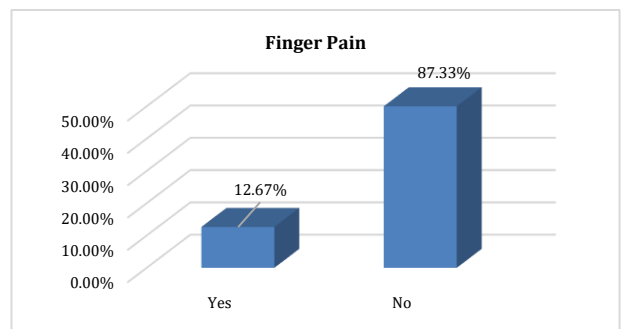


Fig.19 Housewives experiencing pain in Fingers

Below pie charts shows the type of pain and the duration of pain in fingers housewives suffer. The majority of housewives suffer from irregular and occasional type of pain in the fingers. The majority of the housewives have started feeling the musculoskeletal problem of pain in fingers in duration 0-6 months and more than 3 years.

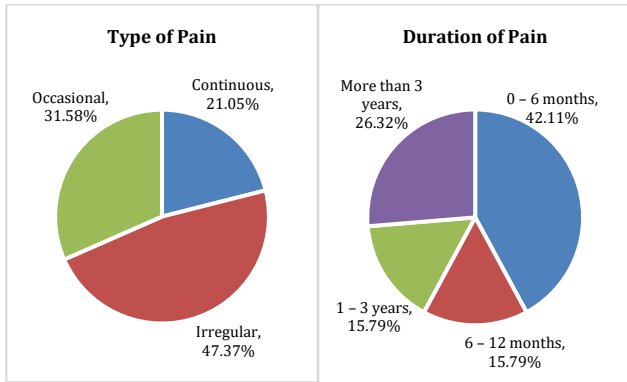


Fig.20 Type and Duration of Finger pain

5.13 Knee Pain

In this study, 33.33% of housewives suffered from musculoskeletal problems of the knee and 66.67% did not suffer.

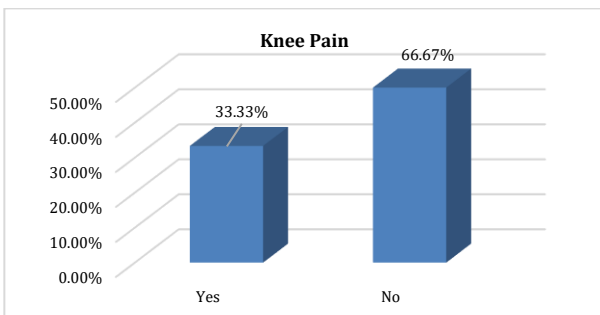


Fig.21 Housewives experiencing Knee pain

Below pie charts shows the type of pain and the duration of knee pain housewives suffer. The majority of housewives suffer from occasional and continuous types of knee pain. The majority of the housewives have started feeling the musculoskeletal problem of knee pain in duration 6-12 months and more than 3 years.

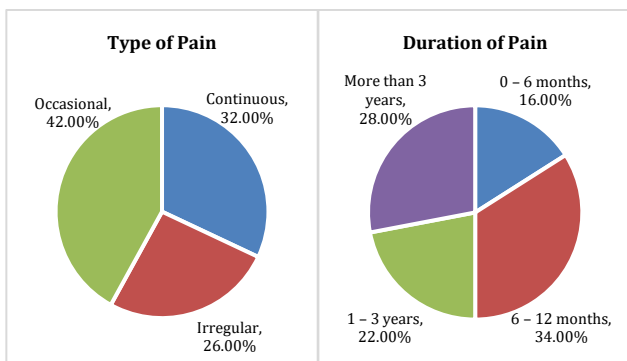


Fig.22 Type and Duration of Knee pain

5.15 Ankle Pain

In this study, 16 % of housewives suffered from musculoskeletal problems of the ankle and 84 % did not suffer.

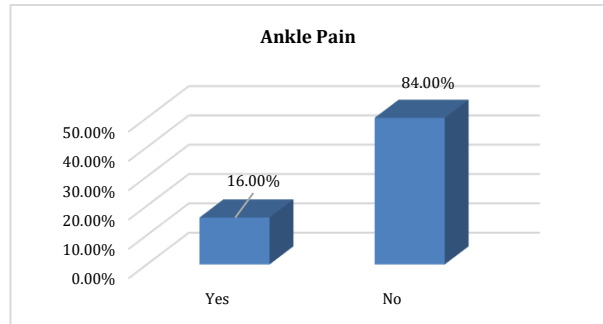


Fig.22 Housewives experiencing Ankle pain

Below pie charts shows the type of pain and the duration of ankle pain housewives suffer. The majority of housewives suffer from occasional and continuous types of ankle pain. The majority of the housewives have started feeling the musculoskeletal problem of ankle pain in duration 0-6 months.

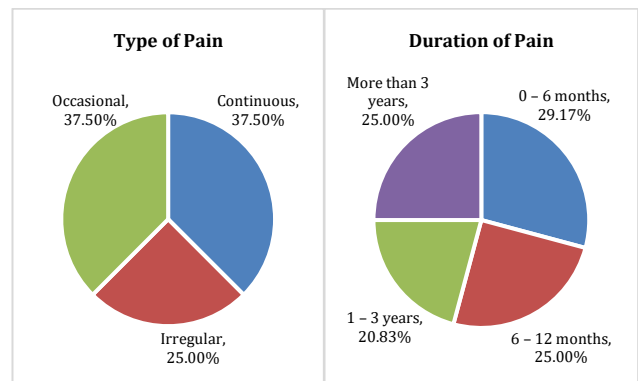


Fig.24 Type and Duration of Ankle pain

5.14 Foot Pain

In this study, 16.67 % of housewives suffered from musculoskeletal problems of foot and 83.33 % did not suffer.

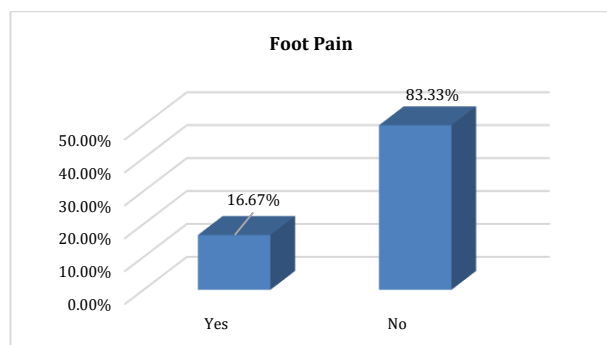


Fig.25 Housewives experiencing Foot pain

Below pie charts shows the type of pain and the duration of foot pain housewives suffer. The majority of housewives suffer from occasional and continuous type of foot pain. The majority of the housewives have started feeling the musculoskeletal problem of foot pain in the duration of 0-6 months and 6-12 months.

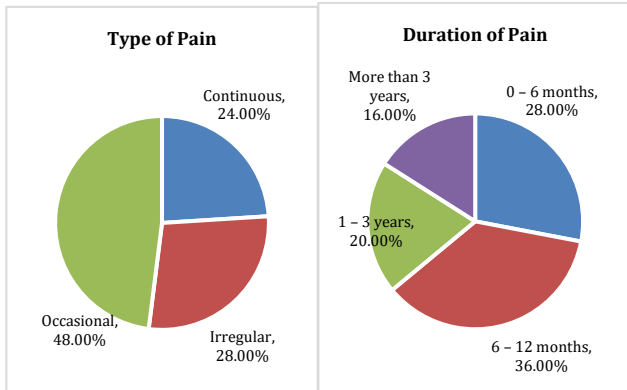


Fig.26 Type and Duration of Foot pain

5.15 Heel Pain

In this study, 32.67 % of housewives suffered from musculoskeletal problems of the heel and 67.33 % did not suffer.

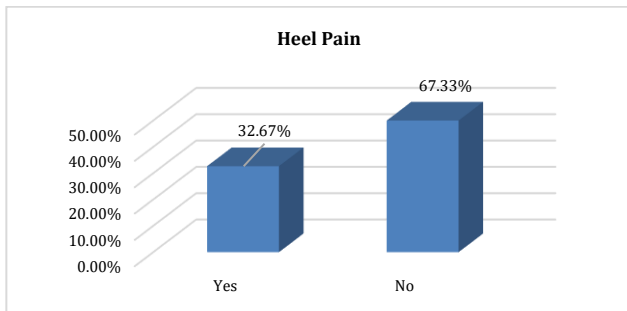


Fig.27 Housewives experiencing Heel pain

Below pie charts shows the type of pain and the duration of heel pain housewives suffer. The majority of housewives suffer from occasional type of heel pain. The majority of the housewives have started feeling the musculoskeletal problem of heel pain in the duration 0-6 months and 1-3 years.

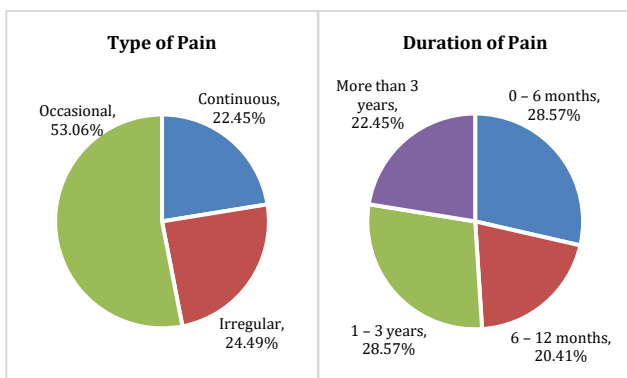


Fig.28 Type and Duration of Heel pain

5.16 Distribution of housewives regularly practicing exercise

Among the 150 participants, 46% of housewives practice regular exercise in their daily routine and 54% of housewives do not practice regular exercise. The distribution of housewives practicing regular exercise is shown in Figure 29.

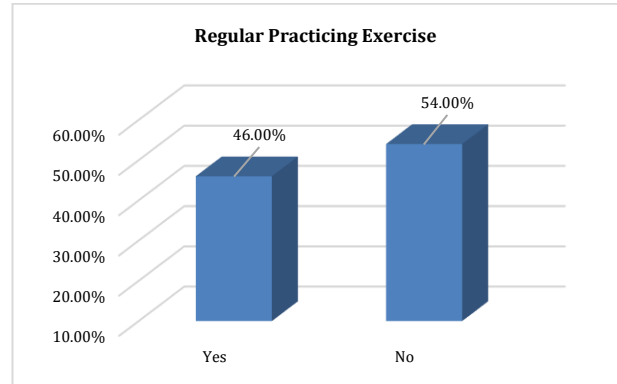


Fig.29 Regular Practicing Exercise

5.17 Distribution of duration of exercise housewives' practice

Among the 150 participants, 30% of housewives practice exercise for 1-20 minutes in their daily routine, 22.67% for 21-40 minutes, 10% for more than 40 minutes and 34.33% of housewives do not exercise.

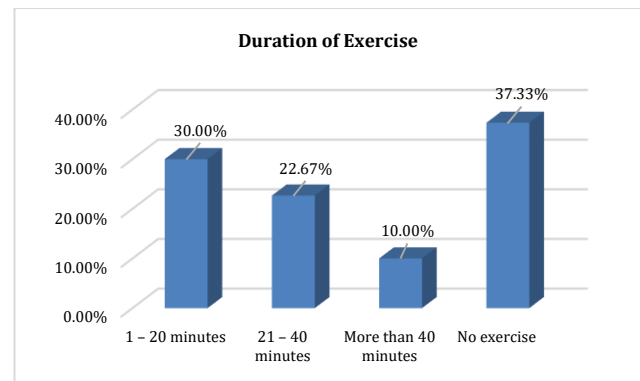


Fig.30 Duration of Exercise

Conclusion

In this study, among the collected data of 150 housewives, 88% i.e. 132 of housewives suffer from musculoskeletal problems during their daily household activities. Among these 132 housewives the most affected housewives were from the age band of 31-40 years and 41-50 years i.e. total of 92 housewives were suffering from musculoskeletal problems. Since, this age band is more actively working in their daily household activities, which leads to more strain on their body. Among the 150 housewives, the majority of

the housewives work for 6-8 hours and more than 8 hours in a day. The data collected of the daily working hours of housewives showed that among 150 housewives 93 of them suffered from musculoskeletal problems. This long working hours of housewives in a day and working in an inaccurate posture leads to augmentation in their musculoskeletal problems. The housewives who sleep for less than 6 hours in a day are all suffering from musculoskeletal problems. The main reason behind this might be their less rest period they get in their daily routine.

Among the 150 housewives, 49% of housewives suffered from musculoskeletal problem of neck pain, 41% from upper back pain, 57% from lower back pain, 21% from shoulder pain, 10% from elbow pain, 11% from wrist pain, 13% from pain in fingers, 33% from knee pain, 16% from ankle pain, 17% from foot pain and 33% from heel pain. Most of the housewives suffer from pain in the neck, upper back and lower back. The reason behind this might be practicing poor posture and improperly lifting something heavy during their daily household activities. The distribution of areas affected by musculoskeletal problems among housewives is shown in Figure 31.

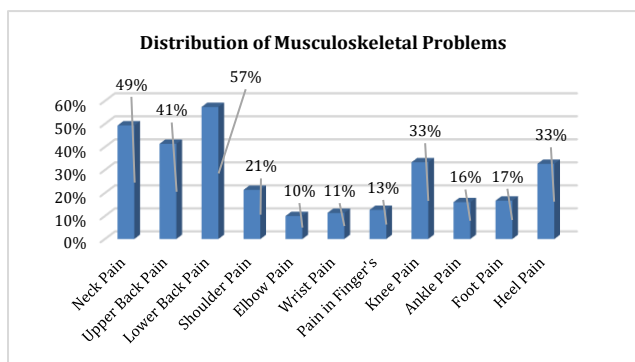


Fig.31 Distribution of Musculoskeletal Problems among Housewives

In this study, the housewives who suffered from musculoskeletal problems of the neck, upper back, lower back, wrist, fingers, foot and heel majority felt occasional and irregular type of musculoskeletal pain. The reason behind this might be, sudden rise in daily household activities and prolonged working hours. The housewives who suffer from musculoskeletal problems of shoulder, elbow, knee and ankle majority felt occasional and irregular type of musculoskeletal pain. The reason behind this might be, continuously working for long hours and that too in poor and inconvenient posture for their daily household activity.

Among the 150 housewife's majority of them started to feel the musculoskeletal related problems during 0-6 months. The main reason behind this might be the pandemic period which the entire world is going through. As the entire nation was under lockdown for many months, the daily household activities of housewives were raised to a very immense extent which augmented the stress on housewives leading to

the development of these musculoskeletal problems among them. The distribution of type of pain and its duration is shown in Table 4.

Table 4 Distribution of type and duration of Musculoskeletal Problems among Housewives

Sr. No	Area	Percentage	Type of Pain	Duration of Pain
1	Neck	49%	Occasional and Irregular	0 - 6 months and more than 3 years
2	Upper back	41%	Occasional and Irregular	0 - 6 months and more than 3 years
3	Lower back	57%	Occasional and Irregular	0 - 6 months and more than 3 years
4	Shoulder	21%	Occasional and Continuous	0 - 6 months and more than 3 years
5	Elbow	10%	Occasional and Continuous	0 - 6 months and more than 3 years
6	Wrist	11%	Occasional and Irregular	0 - 6 months and more than 3 years
7	Fingers	13%	Occasional and Irregular	0 - 6 months and more than 3 years
8	Knee	33%	Occasional and Continuous	6 - 12 months and more than 3 years
9	Ankle	16%	Occasional and Continuous	0 - 6 months, 6 -12 months and more than 3 years
10	Foot	17%	Occasional and Irregular	0 - 6 months and 6 -12 months
11	Heel	33%	Occasional and Irregular	0 - 6 months and 1 - 3 years

In this study, among the housewives, 46% of housewives practice regular exercise in their daily routine and 54% of housewives do not practice regular exercise. This non-practicing of exercise of housewives in their daily routine leads to the development of musculoskeletal problems among them. By practicing exercise regularly, housewives can reduce the risk of musculoskeletal problems among them which develop during their daily household activities.

To reduce work-related musculoskeletal disorders among housewives, they should have a proper sleep of at least 7 hours. As most of the housewives work for more than 6 hours, they should take mini-breaks in their daily routine. These short breaks will help them to reduce their stress and gain some energy for their work. As most of the housewives suffer from lower back pain, they should improve their work postures. They should try to do their work in the sitting posture wherever possible. Also, to avoid this lower back pain, the short breaks suggested here will be very helpful. As housewives work in different postures during their daily household activities, their body goes through a lot of strain. To reduce this strain and for the relaxation of the body, housewives should practice exercise regularly in their daily routine. So, by implementing these small preventive steps housewives can reduce the risk of work-related musculoskeletal disorders.

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