

Prevalence and Risk Factors of Musculoskeletal Disorders among Housewives: A Survey Study

Charanpreet Kaur¹, Gaganpreet Kaur², Supreet Bindra², Pankajpreet Singh²

¹BPT 4th Year Student, ²Assistant Professor (Department of Physiotherapy),
SGGSWU University, Punjab, India.

Corresponding Author: Pankajpreet Singh

DOI : <https://doi.org/10.52403/ijshr.20240250>

ABSTRACT

Introduction: In Indian society, housewives serve as the foundational pillars around which familial structures revolve. Women perform wide variety of activities daily in the kitchen, due to continuous work performance housewives suffer various kind of physical disorders like musculoskeletal disorders, pain in joints, back, shoulders, arms, and hands due to prolong standing posture. Persistence of Musculoskeletal pain results in decreased productivity which at the end leads to poor quality of life.

Aim of the study: The survey aims to evaluate prevalence and risk factors of musculoskeletal disorders among housewives.

Methodology: A survey study was conducted among 100 housewives. Data was collected through a self-administered questionnaire and Nordic Musculoskeletal Questionnaire to determine the prevalence and risk factors of musculoskeletal disorders. Convenience sampling was used for the study.

Results: The findings revealed that the prevalence of MSDs among housewives was 79%. Maximum prevalence (46.8%) was found in the age group 30-40 years. The most common site of musculoskeletal disorder among housewives was multiple regions (46.8%), followed by lower back (21.5%). Other regions such as the neck, knees, shoulders, and elbows also showed varying levels of prevalence.

Conclusion: In conclusion, the study showed a higher prevalence of musculoskeletal disorders among housewives. The findings underscore the multifaceted nature of this health concern, influenced by various risk factors including age, BMI distribution, number of dependents, duration of household activities, and types of tasks performed.

Keywords: Musculoskeletal Disorders, Housewives, Risk factors

INTRODUCTION

Musculoskeletal disorders (MSD) have become increasingly prevalent worldwide during the past decades. It has become the common cause of work related impairment among workers with considerable financial consequences including compensation and medical expenditures [1].

According to the World Health Organization (WHO) MSDs is “a disorder of the muscles, tendons, peripheral nerves or vascular system not directly resulting from an acute or instantaneous event”. Musculoskeletal disorders include clinical syndrome such as tendon inflammation and related conditions like tenosynovitis, epicondylitis, bursitis, nerve compression disorders including carpal tunnel syndrome, sciatica, and osteoarthritis, as well as, less standardized conditions such as myalgia [2]. It comprises 4th greatest impact on the overall health of the world population, affecting more than 1.7 billion people

worldwide which results in increasing overall rate of disability [3]. MSD is very common in both developed and developing countries with estimate prevalence ranging from 11%-60% [4]. The severity of MSDs can vary and, in some cases, they cause pain and discomfort that interferes with everyday activities [5].

Current estimates of people affected worldwide with MSDs include back pain (632 million), neck pain (332 million), osteoarthritis of the knee (251 million), and also other conditions (561 million). The MSD cause 21.3 % of all Years Lived with Disability (YLDs) and are also second only to mental/ behavioral disorders that account for 22.7% of YLDs. Worldwide low back pain is leading cause of disability and contributes 10.7% of all YLDs. Low back pain (83.1million YLDs), neck pain (33.6 million YLDs), and osteoarthritis (17.1 million YLDs) are chief causes of MSD [6].

HOUSEWIVES

In Indian society, housewives serve as the foundational pillars around which familial structures revolve. Typically, a housewife is defined as a women who manages the household as her main occupation such as family care, home maintenance, child education, meal preparation, grocery shopping, cleaning etc, and is not employed outside the home while there spouse serve the primary bread earners of the family [7]. Many studies have found that women have higher musculoskeletal morbidity then men in general population as well as in different occupational groups. 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 cause for observed difference [3].

In general women have more complex and stressful ageing process as compared to men, due to hormonal changes that occur during menopausal transition. Menopause marks the end of female reproductive functions and also makes them vulnerable to

a new set of health problems such as cardiovascular and osteoporosis [6]. Women perform wide variety of activities daily in the kitchen, due to continuous work performance Housewives suffer various kind of physical disorders like musculoskeletal disorders , pain in joints , back , shoulders , arms , and hands due to prolong standing posture [8]. Women spend approximately 3.2 hours of housework in India [5]. Women work demands high degree of physical effort leading to fatigue and frustration, they do lots of activities throughout the day that is neglected by other family members [8]. The amount of force on a weight bearing joint is found to be increased with excess weight of a person. Among middle age and elderly Housewives, findings show increasing of weight will cause shoulder, heel and hip pain. Another study supported that 31% of 495 Housewives who suffered from MSD are having higher body mass index [12].

Persistence of Musculoskeletal pain results in decreased productivity which at the end leads to poor quality of life (QOL) [3]. The WHO has defined QOL as “an individual’s perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. Quality of life is important indicator for musculoskeletal disorder. Global burden of disease study 2010 demonstrates the impact of musculoskeletal disorders as the second cause of disability globally in all regions of the world [4]. Early diagnosis and treatment may help ease of symptoms and improve the long term outlook [5]. Physiotherapy plays a crucial role in raising awareness among housewives about proper body mechanics, ergonomics and exercise to prevent and manage musculoskeletal issues. Additionally, Physiotherapy promotes mental wellness by offering stress- relief strategies and encouraging active lifestyles, ultimately enhancing the overall quality of life for housewives.

MATERIALS & METHODS

STUDY DESIGN

The study was conducted among 100 housewives. The participants were informed about the purpose of the study and on obtaining informed consent, the participants who fulfilled the inclusion criteria were included in the study.

RESEARCH SETTING

Data was collected from housewives from Bassi Pathana District Fatehgarh Sahib. The interview schedule method was used to collect the data.

ELIGIBILITY CRITERIA

Inclusion criteria

Females age group between 20-50 years were included.

Housewives with maidservant or without maidservant, both were included.

Willing to participate in the research were included in the study.

Exclusion criteria

Pregnant Housewives were excluded from the study.

Any case of recent surgery was excluded from the study.

Housewives who were involved in any economically productive occupation was excluded from the study.

ETHICAL APPROVAL

The approval to conduct the present study was obtained from the Institutional Ethical Committee (IEC) constituted by Sri Guru Granth Sahib World University, Fatehgarh Sahib, in accordance with the ICMR ethical guidelines for Biomedical Research on Human Subjects (2006) with reference No. SGGSWU/IEC/2024/33.

DEVELOPMENT OF QUESTIONNAIRE

The data was collected using the self-Administered Questionnaire. Convenience

sampling was used for the study. The questionnaire included informed consent for the voluntary participation of the housewives.

The questionnaire included a total of 23 multiple-choice questions to evaluate the Prevalence and risk factors of musculoskeletal disorders among Housewives.

The questionnaire for this study was structured into four distinct sections. Section A encompassed demographic information such as age, BMI, education level, household composition, marriage duration, and menstrual cycle status. Section B focused on the prevalence of MSDs over both short and long-term periods (7 days and 12 months, respectively), detailing the affected body parts using the Nordic Musculoskeletal Questionnaire. Section C delved into potential risk factors, including the average hours spent on household work, types of tasks performed, availability of domestic help, engagement in physical exercise, duration and intensity of exercise, and specific types of pain experienced. Finally, Section D addressed general health service utilization among housewives experiencing MSDs, providing a comprehensive framework for analyzing the multifaceted aspects of MSDs in this population.

STATISTICAL ANALYSIS

The data was further analyzed using Statistical Package of Social Science (SPSS) windows version 26 and summarized using Descriptive Statistics of the Bar Chart, Frequency and Percentage using Tables.

RESULT

Table 1 depicts the Prevalence of Musculoskeletal Disorders (MSDs) over the past 12 months, with 79% of respondents were suffering from MSDs and 21% reported to have no occurrence.

Table 1: 12 Months Prevalence of Musculoskeletal Disorders among Housewives

Prevalence of MSD'S in past 12 months	Absolute no. (N)	%
Yes	79	79
No	21	21
Total	100	100

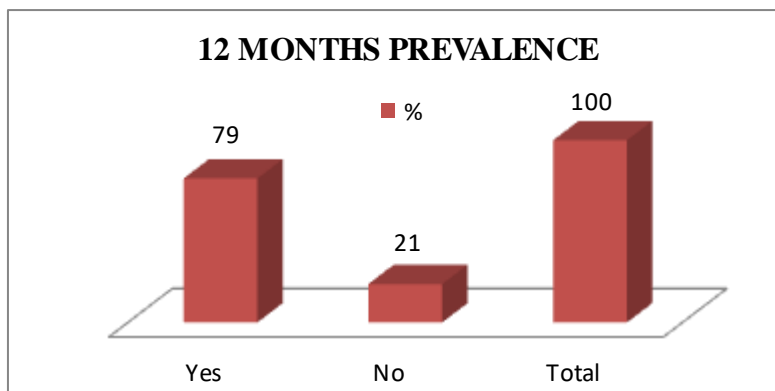


Fig.1: Prevalence of MSD among Housewives (N= 100)

Table 2: Presents the region- wise prevalence of Musculoskeletal Disorders (MSDs) among Housewives, highlighting the distribution of pain across different body regions. The data reveals that a significant

portion of Housewives experienced MSDs in multiple regions (46.8%), followed by the lower back (21.5%). Other regions such as the neck, knees, shoulders, and elbows also showed varying levels of prevalence.

Table 2: Region wise Prevalence of MSDs

Region	Absolute no.(N)	%
Neck	15	19
Shoulders	1	1.3
Elbows	1	1.3
Lower Back	17	21.5
Knees	8	10.1
Multiple	37	46.8
Total	100	100

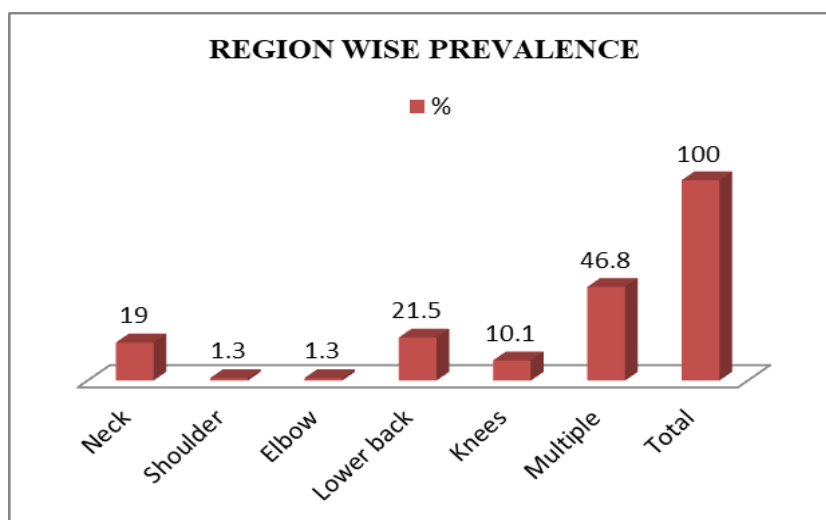


Fig. 2: Region wise Prevalence

Table 3 presents the association of demographic characteristics with 12-month prevalence of musculoskeletal disorders. The 12-month Prevalence of musculoskeletal disorder was higher in age group of 30-40 years 37 (46.8%), 20-30 years 26 (32.9%), followed by 40-50 years 16 (20.2%).

Most respondent from the age group of 30-40 years are more prone to MSDs. On

further analysis Age ($X^2= 45.262$, $P= 0.000$), BMI ($X^2= 52.467$, $P= 0.000$), Level of education ($X^2= 24.537$, $P = 0.000$), family member ($X^2=16.995$, $P=0.000$), Number of Children ($X^2=19.805$, $P=0.000$), Marital duration ($X^2=33.832$, $P=0.000$), Menstrual cycle ($X^2=86.605$, $P=0.000$) were found to be significantly associated with 12-month Prevalence of MSDs.

Table 3: Association of demographic characteristics with 12 month Prevalence of MSDs

Characteristics	Yes	No	Total	X ²	P value
Age					
20-30 years	26(32.9%)	0(0%)	26(100%)	45.262	0.000***
30-40 years	37(46.8%)	0(0%)	37(100%)		
40-50 years	16(20.2%)	0(0%)	37(100%)		
BMI					
Underweight	18(22.7%)	0(0%)	18(100%)	52.467	0.000***
Normal	23(29.11%)	0(0%)	35(100%)		
Overweight	35(48.1%)	0(0%)	38(100%)		
Obese	0(0%)	0(0%)	9(100%)		
Level of Education					
Illiterate	5(6.32%)	0(0%)	5(100%)	24.537	0.000***
Primary education	14(17.72%)	0(0%)	14(100%)		
Intermediate	29(36.70%)	0(0%)	29(100%)		
Secondary or higher	31(39.24%)	0(0%)	52(100%)		
Number of household members					
1-4	39(49.36%)	0(0%)	39(100%)	16.995	0.000***
More than 4	40(50.63%)	0(0%)	61(100%)		
Number of children					
One	28(35.44%)	0(0%)	28(100%)	19.805	0.000***
2-3	51(64.55%)	0(0%)	69(100%)		
More than three	0(0%)	0(0%)	3(100%)		
Marriage duration					
Less than 5 years	16(20.25%)	0(0%)	16(100%)	33.832	0.000***
6-15 years	40(50.63%)	0(0%)	40(100%)		
16- more than 20 years	23(29.11%)	0(0%)	44(100%)		
Menstrual cycle					
Regular	74(93.67%)	0(0%)	74(100%)	86.605	0.000***
Irregular	5(6.32%)	0(0%)	9(100%)		
Menopause	0(0%)	0(0%)	17(100%)		

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

NS

Table 4 presents association of risk factors with 12-month Prevalence of musculoskeletal disorders. On further analysis working hours of Housewives per day was 5-8 hours 43(54.4%) ($X^2=20.053$, $P=0.000$), types of household activities (Cooking) 47(59.49%) ($X^2=23.537$, $P= 0.000$), Housewives taking no domestic help

56(70.88%) ($X^2= 7.940$, $P=0.005$), Housewives performing any exercise 47(100%), ($X^2=23.573$, $P= 0.000$), pain or discomfort in muscles or joints due to daily household activities 40(100%), ($X^2=100.000$, $P= 0.000$) were found to be significant association with 12 month Prevalence.

Table 4: Association of risk factors with 12 months Prevalence of MSDs

Characteristics	Yes	No	Total	X ²	P value
Average household hours working of Housewives					
5-8 hours	43(54.4%)	0(0%)	43(100%)	20.053	0.000***
More than 8 hours	36(45.56%)	0(0%)	57(100%)		
Type of household activities in Housewives					
Cooking	47(59.49%)	0(0%)	47(100%)	23.573	0.000***
Cooking, parental care, grocery	32(40.50%)	0(0%)	53(100%)		
Domestic helper					
Yes	23(29.11%)	0(0%)	23(100%)	7.940	0.005***
No	56(70.88%)	0(0%)	77(100%)		
Do you perform exercise					
Yes	47(59.49%)	0(0%)	47(100%)	23.573	0.000***
No	32(40.50%)	0(0%)	53(100%)		
Level of pain and discomfort among Housewives					
Yes, frequently	39(49.36%)	0(0%)	39(100%)	100.000	0.000***
Rarely	40(50.63%)	0(0%)	40(100%)		
No, never	0(0%)	0(0%)	21(100%)		
P<0.05*		P<0.01**		P<0.001***	
				NS	

DISCUSSION

The study was conducted among housewives with the aim of assessing the prevalence of musculoskeletal disorders (MSDs) and identifying the associated risk factors. Data was collected from 100 respondents, with the age groups of 30-40 years comprising 37% (46.8%) and 40-50 years comprising 16% (20.2%) of the sample, and the 20-30 years age group comprising 26% (32.9%). Alarming, a significant 79% of respondents reported to experience MSDs in one or more body regions, highlighting the widespread nature of this health issue among housewives. Similar findings were reported by Kalra and Bhatnagar (2017), who indicated that 100% of housewives in Delhi and Noida, India, were affected by musculoskeletal disorders. Similarly, Karandikar et al. (2021) reported that only 88% of housewives were affected by work-related musculoskeletal disorders. The difference in data is due to varying sample sizes. The present study had a sample size of 100, whereas the study conducted by Karandikar et al. (2021) had a sample size of 150. This study highlighted the severity of MSDs, with 46.8% of respondents experiencing them in multiple areas. The most commonly affected regions were the lower back (21.5%), neck (19%), knees (10.1%), and shoulders and elbows (1.3%).

In a related study, Jacob et al. (2020) reported a higher prevalence of musculoskeletal disorders in the lower back (19%), followed by the knees (17%), and feet/ankles (14.7%). The variations in results compared to previous literature may be attributed to differences in environment, lifestyle, cultural factors, and types of household activities, which could influence the prevalence and distribution of MSDs among housewives. Numerous potential risk factors contribute to the development of musculoskeletal disorders among housewives. These risk factors are associated with tasks that increase the likelihood of developing such disorders (Jacob et al., 2020). The Body Mass Index (BMI) distribution among the housewives, also has a major impact on the prevalence of MSDs among housewives. The present study reveals a higher rate of musculoskeletal disorders, at 48.1% among overweight female. This attributed to the mechanical stress to the joints and tissues caused by excessive weight, which induce of the body and induces physical limitations and bodily pain (Rosa et al., 2021). Previous research has established that an increase in the number of dependents correlates with heightened responsibilities, elevated stress levels, and a reduction in leisure time for women, all of which may contribute to the manifestation of

musculoskeletal disorder (MSD) symptoms. Similarly, the current study found that 40% of the housewives surveyed had more than 4 children, with prevalence of 50.63% of musculoskeletal disorders. Furthermore, Habib et al. (2012) indicated that the number of children a housewife has had throughout her life may have lasting impacts on her musculoskeletal health.

Habib et al. (2012) proposed that the incidence of musculoskeletal disorders escalates with prolonged engagement in household activities. The rationale behind this assertion lies in the notion that extended periods of repetitive movements inherent in household tasks exacerbate muscle fatigue and elevate physical strain on various body regions. The findings of the present study underscored that women involved in household chores for over 5-8 hours 43% with prevalence of MSDs 54.4%. Similarly, a study conducted by Ranasinghe et al. (2016) reported that 36% of housewives experienced musculoskeletal disorders attributable to household activities, with a predominant occurrence in the lower back region, particularly among those who devoted at least 4 hours per day for 5 days a week to such tasks. These results emphasize that prolonged durations of household activities coupled with inadequate rest intervals constitute the principal risk factors contributing to musculoskeletal disorders.

Housewives frequently engage in activities such as prolonged standing and repetitive hand movements during food preparation and dishwashing. Moreover, tasks like mopping and cleaning, often performed in confined or challenging-to-access spaces, necessitate awkward postures. The current study revealed that 59.49% of women are involved in cooking, while 40.50% contribute to other household chores and parental care. Nonetheless, Habib and Rahman (2015) posited that household activities involving squatting positions, such as cooking on ground-level burners, may elevate the likelihood of knee injuries, a finding corroborated by Ditchen et al. (2014).

Furthermore, the study findings unveiled that 23% of housewives sought domestic assistance, with 13% seeking aid specifically for sweeping, mopping, and washing tasks and they complained of more pain in neck and shoulder as compared to other joints. The prevalence of MSDs among housewives who had domestic helper was 29.11%. This observation aligns with the research conducted by Yuhaniz and Jusan (2016), which concluded that full-time housewives tend to allocate more time and energy to a spectrum of domestic responsibilities, encompassing cooking, cleaning, childcare, and household financial management, compared to their part-time counterparts.

Apart from this, findings of the present study indicate that 47% of homemakers demonstrate a propensity for engaging in regular physical exercise. This observation aligns with the findings of Serap and Nagehan (2021), who reported that only 23.8% of housewives were physically active through activities such as walking, cycling, and jogging. Furthermore, a study conducted by Modi et al. (2022) highlighted that exercise enhances an individual's strength, flexibility, and endurance, consequently improving postural control, the ability to resist muscle fatigue, muscle recovery time, and overall daily performance.

Moreover, the present study underscores that 44.3% of housewives refrain from regular household activities due to experiencing high levels of pain. Additionally, the results reveal that 50% of housewives sought consultation from general practitioners, followed by 26% who consulted Orthopedician, and 12% who consulted physiotherapists. Notably, only 60% of these consulted housewives were adhering to prescribed medication regimens. This disparity in data may stem from cultural beliefs and societal norms that prioritize medication as the primary solution for health issues. It is plausible that many housewives are not fully aware of the

benefits of physiotherapy as an effective treatment option for various conditions.

The implications of these findings are significant as they underscore the need for greater awareness and advocacy for the musculoskeletal health of housewives. This calls for their inclusion in broader public health discourse and initiatives aimed at addressing their unique healthcare needs. By recognizing and addressing these challenges, policymakers and healthcare professionals can work towards enhancing the overall well-being of this demographic group.

The study serves to enhance comprehension of musculoskeletal health among housewives and to stimulate tangible improvements. As access to information and educational resources continues to expand, housewives are increasingly proactive in acknowledging the significance of maintaining proper posture, employing ergonomic techniques during household activities, and pursuing suitable methods to address musculoskeletal discomfort.

CONCLUSION

In conclusion, the study showed a higher prevalence of musculoskeletal disorders among housewives. Factors such as aging, obesity, and the number of children play vital role in exacerbating MSDs among housewives. The findings of this survey highlight the urgent need for targeted interventions aimed at preventing and managing MSDs among housewives implementing ergonomic practices, promoting physical activity, and insuring access to health care services are essential steps in mitigating the burden of MSDs in this population. By fostering greater awareness and advocacy, we can empower housewives to prioritize their musculoskeletal health. Ultimately, by recognizing and addressing the unique challenges faced by housewives in maintaining musculoskeletal health, we can inspire health care professionals, and policy makers to collaboratively work towards

improving the overall well-being and quality of life of the housewives.

Study Limitations

- The study had a relatively small sample size.
- Convenience sampling was used for the study.

Further Recommendations

- Further studies with large sample sizes are recommended to evaluate the Prevalence and Risk Factors of Musculoskeletal Disorders among Housewives.

Declaration by Authors

Ethical Approval: Approved

Acknowledgment: None

Source of Funding: None

Conflict of Interest: The authors declare no conflict of interest.

REFERENCES

1. Gasibat, Q., Simbak, N, B., Aziz, A, A(2017). Stretching Exercises to Prevent Work -related Musculoskeletal Disorders – A Review Article. *American journal of sports science and Medicine*, vol.5, no.2, 27-37.
2. Punnett, L and Wegman, D, H(2004). Work related musculoskeletal disorders the epidemiologic evidence and the debate. *Journal of Electromyography and Kinesiology*. Vol 14., 13-23.
3. Nazish, N., Charles, M, J., Kumar, V (2020). Prevalence of Musculoskeletal Disorder among Housewives and Working women. *International Journal of Health Sciences and Research*, vol.10., Issue 2, 215-222.
4. Kalra, S. and Bhatnagar, B., (2017). Prevalence of Musculoskeletal Disorder among Housewives. *International Research Journal of Engineering and Technology*, volume: 04 Issue: 05 ,566-568.
5. Karandikar, Dr.V, N., Badgular, P, R., Malani, K,M., Rithe, S,K., Salunke, P,D.,(2021). Work related Musculoskeletal Disorders among Housewives. *International journal of current engineering and technology*, Vol.11, No. 2, 227-238.

6. Mishra, M., Srivastava, A.P., Srivastava, V.K.,(2023). Prevalence and risk of musculoskeletal pain in rural homemakers of North India. *Medical Journal of Dr. D.Y. Patil University*, IP: 117.235.91.171.
7. Jacob, S and Ying, C.B., (2020). Prevalence and risk factors of work-related musculoskeletal disorders among Housewives. *International Journal of Scientific Research Publications*, volume 10, Issue 11, 817-876.
8. Dhone, S and Khare, T., (2017). Evaluation of Musculoskeletal Disorder among the Housewives in Nagpur city, Maharashtra. *International Journal of Research and Innovation in Social Science*, volume 1, Issue,ISSN 2454-6186,39-40.
9. Mehwish Siddique, Mehreen Jabbar, Nimra Zulfaqar, Zubair Aslam, Hunza Riasat. Prevalence of Musculoskeletal Disorders among Housewives in Lahore: Cross Sectional Study. *Pakistan Journal of Medical & Health Sciences*. 2022; Vol. 16 No. 02.
10. Preeti. and Mehta, Manju., (2022). Work related musculoskeletal disorder of Housewives at home. *International Journal of Agricultural Sciences*, volume 18, Issue 2, 843-846.
11. Fazli, B., Ansari, H., Noorani, M., Jafari, S. M., Sharifpoor, Z., and Ansari, S., (2016). The Prevalence of musculoskeletal disorders and its predictors among Iranians' Housewives. *International Journal of Epidemiologic Research*, 3(1), 53-62.
12. Bihari, V., Kesavachandran, C, N., Mathur, N., Pangtey, B, S., Kamal, R., Pathak, M, K., Srivastava, A, K (2013). Mathematically Derived Body Volume and Risk of Musculoskeletal Pain among Housewives in North India. *International Journal of Epidemiological Research*, volume 8, Issue11, 1-12.
13. Rosa, S., Martins, D., Martins, M., Guimaraes, B., Cabral, L., Horta, L., (2021). Body Mass Index and Musculoskeletal Pain: A Cross –Sectional Study. *Cureus* 13(2): e 13400. DOI 10.7759/cureus.13400.

How to cite this article: Charanpreet Kaur, Gaganpreet Kaur, Supreet Bindra, Pankajpreet Singh. Prevalence and risk factors of musculoskeletal disorders among housewives: a survey study. *International Journal of Science & Healthcare Research*. 2024; 9(2): 391-399. DOI: <https://doi.org/10.52403/ijshr.20240250>
