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Prevalence of Musculoskeletal problems in housemaids

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ABSTRACT

Aim: To find out the prevalence of musculoskeletal problems in housemaids
Objectives:

1. To find the musculoskeletal problems in housemaids
2. To find common sites of pain
3. To assess the severity of pain using Visual Analogue Scale (VAS)

Method: A questionnaire-based survey was conducted among 100 housemaids
Results: Descriptive analysis showed that 46% of the participants suffered from dull aching type pain. Nature of pain was reported as intermittent by 80% of the participants.
Upper back, lower back and knees were the commonest sites of pain, each being prevalent in 50% of the participants. Pain intensity of 5/10 was reported by 26 participants. Squatting and standing were the most common postures adopted by the housemaids while working, 45% and 44% respectively. Bending (26%) was the commonest aggravating factor reported by the housemaids followed by squatting while washing utensils (25%) and standing (20%). Medications, massage and rest were the relieving factors reported by 30%, 28% and 28% of the participants respectively.
Conclusion:
The commonest musculoskeletal problems in housemaids were upper back pain (50%), Lower back pain (50%) and knee pain (50%). 26% of the housemaids reported the pain intensity to be 5/10 on the Visual Analogue Scale (VAS).

Keywords: housemaids, musculoskeletal problems, work related musculoskeletal disorders (WMSDs)

INTRODUCTION

Musculoskeletal disorders (MSD) are injuries or disorders of the muscles, nerves, tendons, joints, cartilage, and spinal discs. Work-related musculoskeletal disorders (WMSD) are conditions in which:

1. The work environment and performance of work contribute significantly to the condition; and/or

2. The condition is made worse or persists longer due to work conditions[1]

Examples of WRMSDs include carpal tunnel syndrome, rotator cuff tears, low back pain, etc.

The current fast paced life in cities necessitates need of domestic help in many households. Consequently, today in cities, house maids are employed for various tasks, such as cooking, sweeping and mopping floors, washing clothes and utensils, dusting, etc. Many of these tasks are physically demanding and require bending, climbing, crawling, reaching and twisting movements which have to done repetitively and continuously for prolonged period of time. This could lead to overexertion and put the musculoskeletal system of the workers under stress. It is often seen that housemaids assume awkward postures while washing clothes or utensils. Also, cooking for an entire family may require standing for prolonged hours. So, work related activities put them at ergonomic risk for poor posture and might require them to manually lift or transport heavy weights. It also requires them to perform repetitive activities involving the upper limbs. This can lead to development of spine related issues, soft tissue injuries in the upper limbs and problems in the weight bearing joints of the lower limbs. Hence, nature of work, duration and frequency of movements, intensity of the force generated and ergonomic design could contribute to musculoskeletal problems. Musculoskeletal problems, if persist, can become grave and complicated over time. This can lead to increase in the financial burden and also the time required for recovery. Once escalated, musculoskeletal problems can also lead to absenteeism from work. Bodily aches and pain reduce the productivity of workers and also, in turn reduce employer satisfaction. Health related issues are often neglected by housemaids due to low level of education and lack of financial resources. Musculoskeletal issues also have economic repercussions for both the parties, as the workers have to bear the brunt for medical consultations and facilities and absenteeism from work becomes problematic for the employers.

Ergonomic strategies and methods are not widely practised in the cleaning profession more so in household cleaning workers due to lack of regulatory standards and meagre accountability. If ergonomic principles can be integrated into existing cleaning industry tools, methods and work environments then efficiency and productivity can be increased and the risk of occupational injuries can be reduced. This will be beneficial to both, the employer and the employees.

To work on the issue of musculoskeletal problems in housemaids, it is essential to find out the prevalence of these disorders in this population. The results of this study would be beneficial to give a background insight for further proceedings for upliftment of working standards of the housemaids.

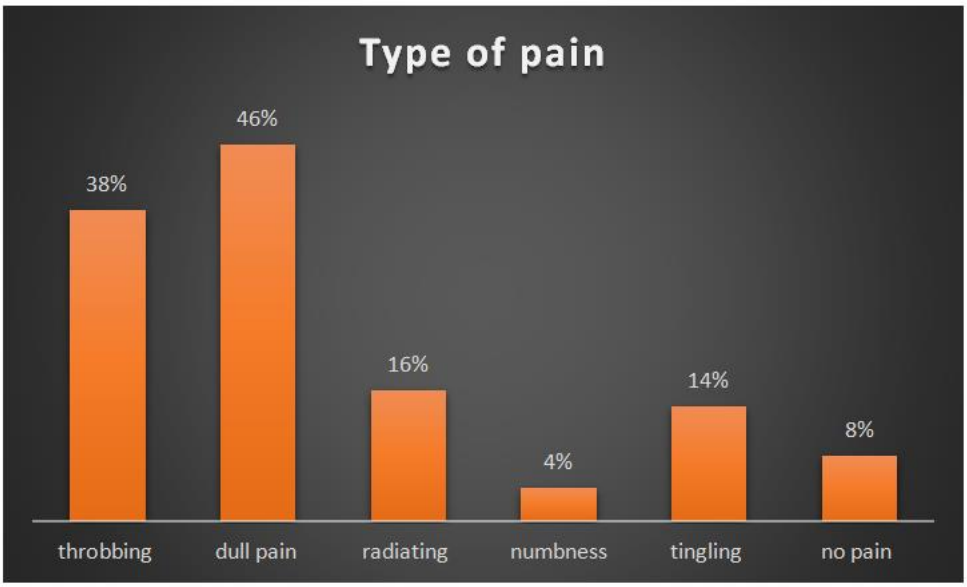
MATERIALS AND METHOD

The aim was to find prevalence of musculoskeletal problems in housemaids. The objectives were to find common musculoskeletal problems in housemaids, to find the common sites of pain and to assess severity of pain based on visual analogue scale. The study was conducted on 100 housemaids within the age group of 18 to 45 years of age. The study design used purposive sampling technique. Housemaids having working experience of minimum 6 months were included in the study. Housemaids with musculoskeletal problems caused due to previous fall or trauma in past six months were excluded from the study.

Procedure

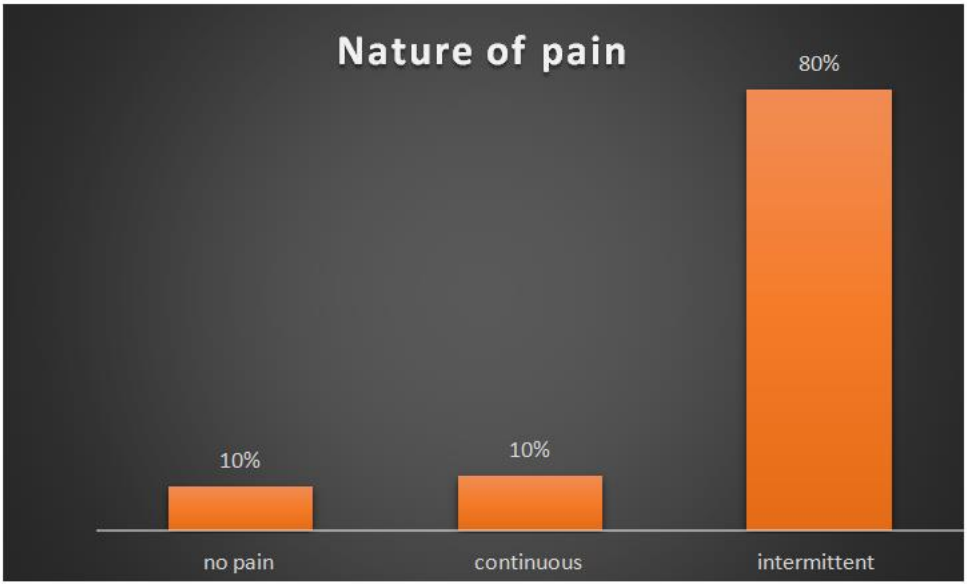
A questionnaire containing closed ended questions regarding musculoskeletal problems in housemaids was formulated and face validated by a team of experts in the field. After proper explanation of purpose of the study and assurance regarding confidentiality and anonymity of the information so obtained, a written consent was taken from the subjects and they were asked to fill up the questionnaire. Pain sites in the body were marked by the participants on a diagram showing human body and Intensity of the pain was recorded using Visual Analogue Scale. The information so obtained was documented and converted into a software-based spreadsheet which was utilized for analysis of the data. Descriptive analysis of the data regarding musculoskeletal problems was depicted by graphs and diagrams showing percentage of the participants. The study has been approved by the institutional review board.

RESULTS



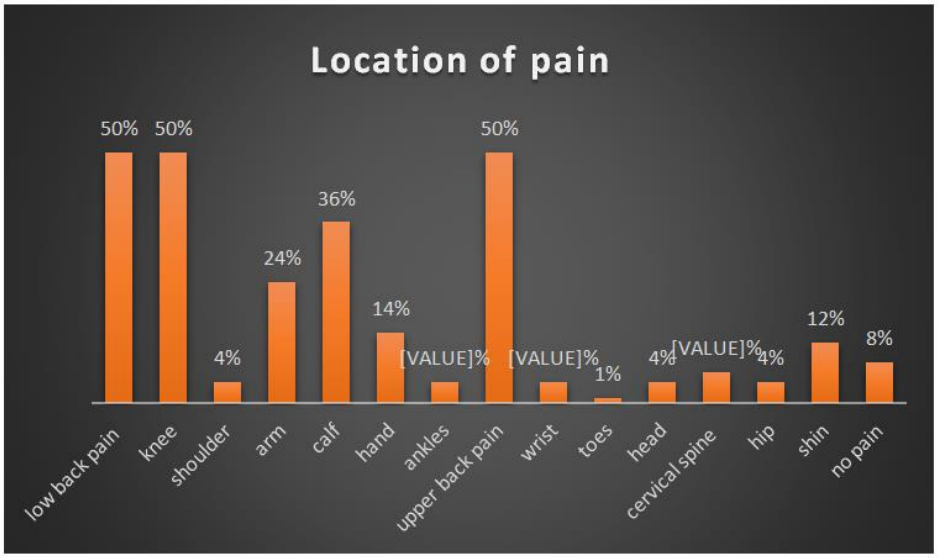
46% and 38% of the housemaids suffered from dull aching type pain and throbbing pain respectively

Fig 1: Type of pain



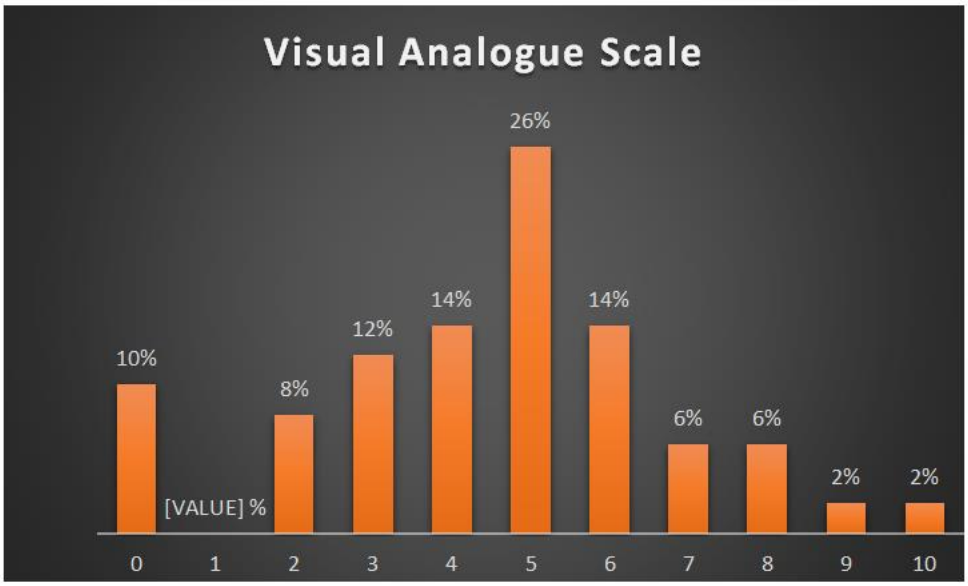
80% of the housemaids suffered from intermittent nature of pain

Fig 2: Nature of pain



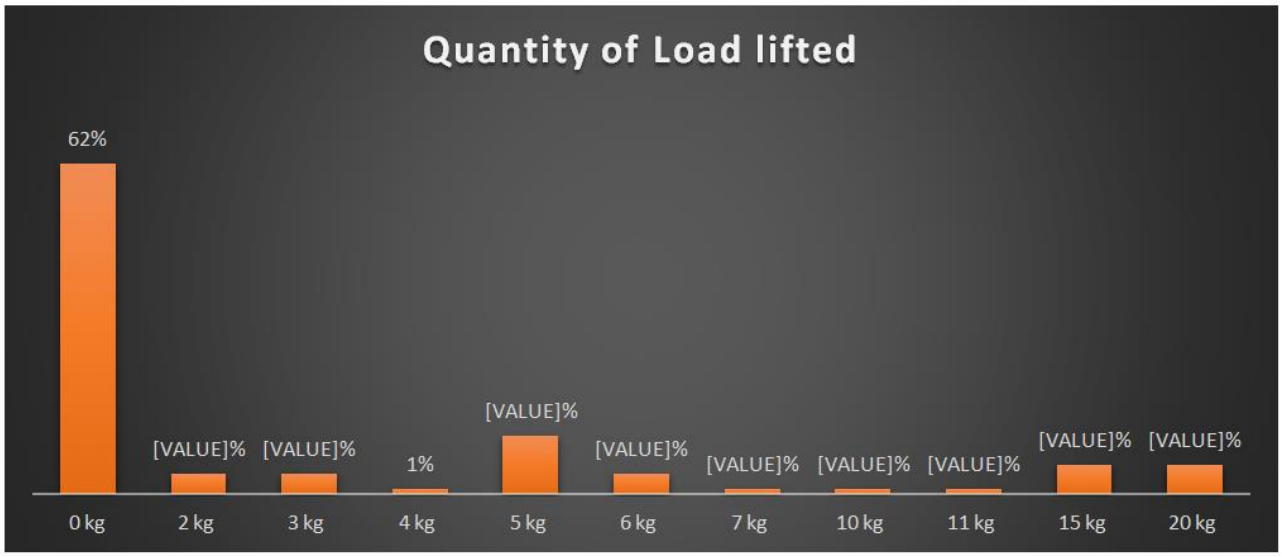
The most common locations of pain were low back (50%), upper back (50%) and knees (50%)

Fig 3: Location of pain



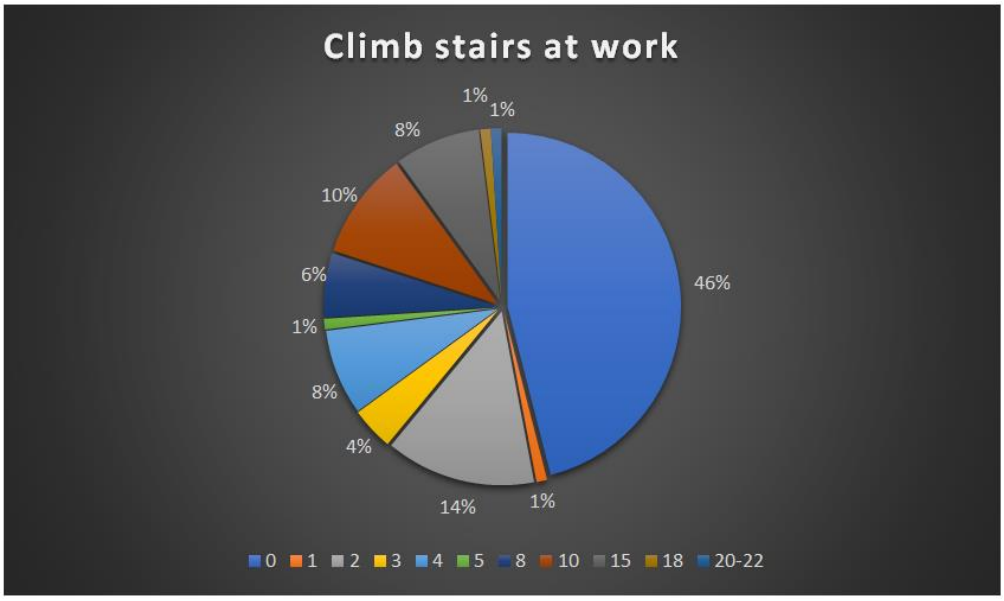
26 housemaids had pain of 5/10 of VAS score while VAS score of 4/10 and 6/10 was reported by 14 housemaids each

Fig 4: Visual Analogue Scale



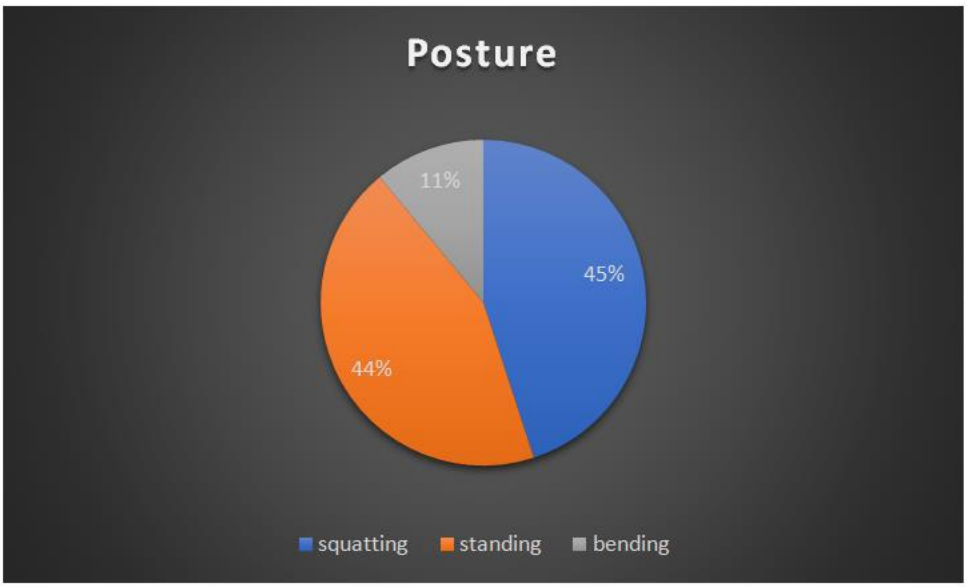
62% of the housemaids do not need to lift any load and 12% of them need to lift 5 kg of load

Fig 5: Quantity of load lifted



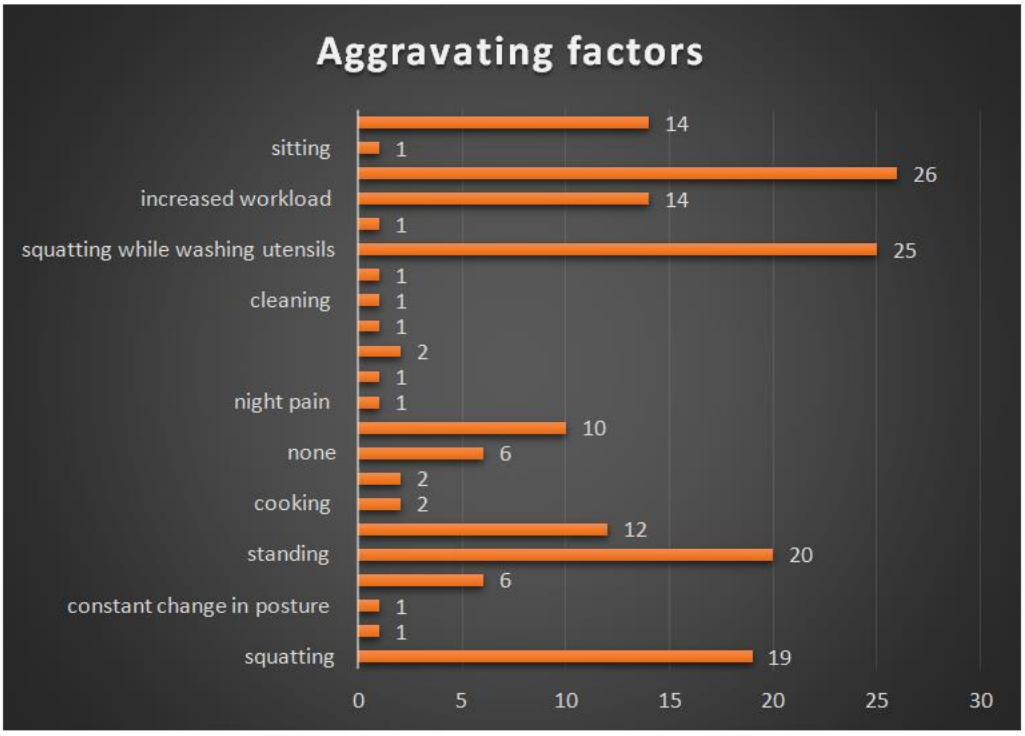
46% of the housemaids don't need to climb stairs for their occupational purpose

Fig 6: Stairs to climb at work



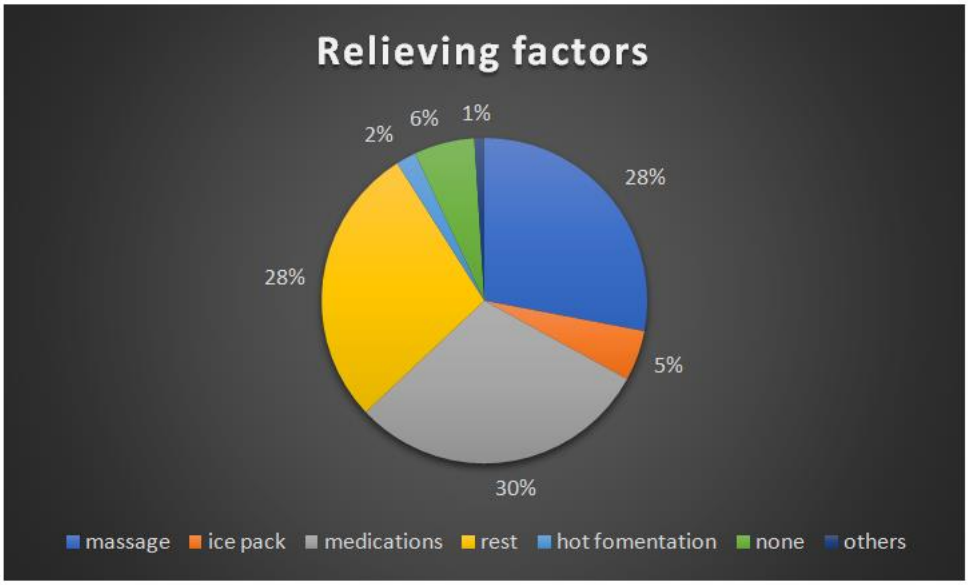
Squatting was the most common posture adopted by 45% of the housemaids followed by standing (44%)

Fig 7: Posture during working



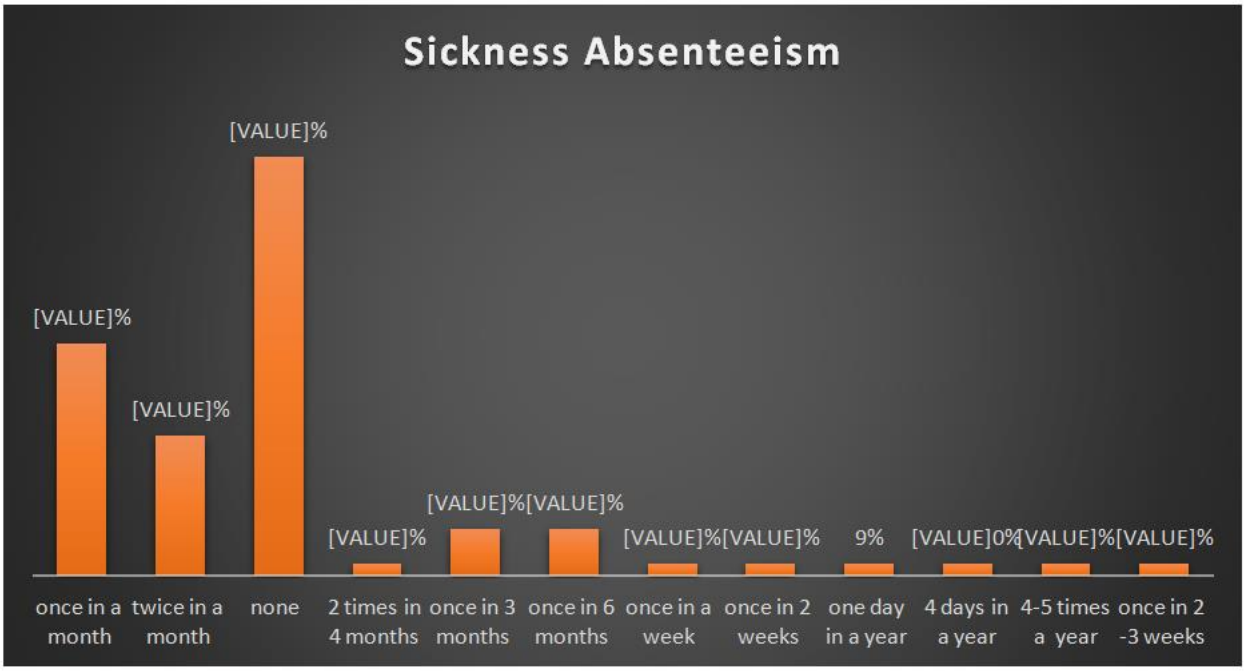
The commonest aggravating factor was bending reported by 26% of the population.

Fig 8: Aggravating factors for pain



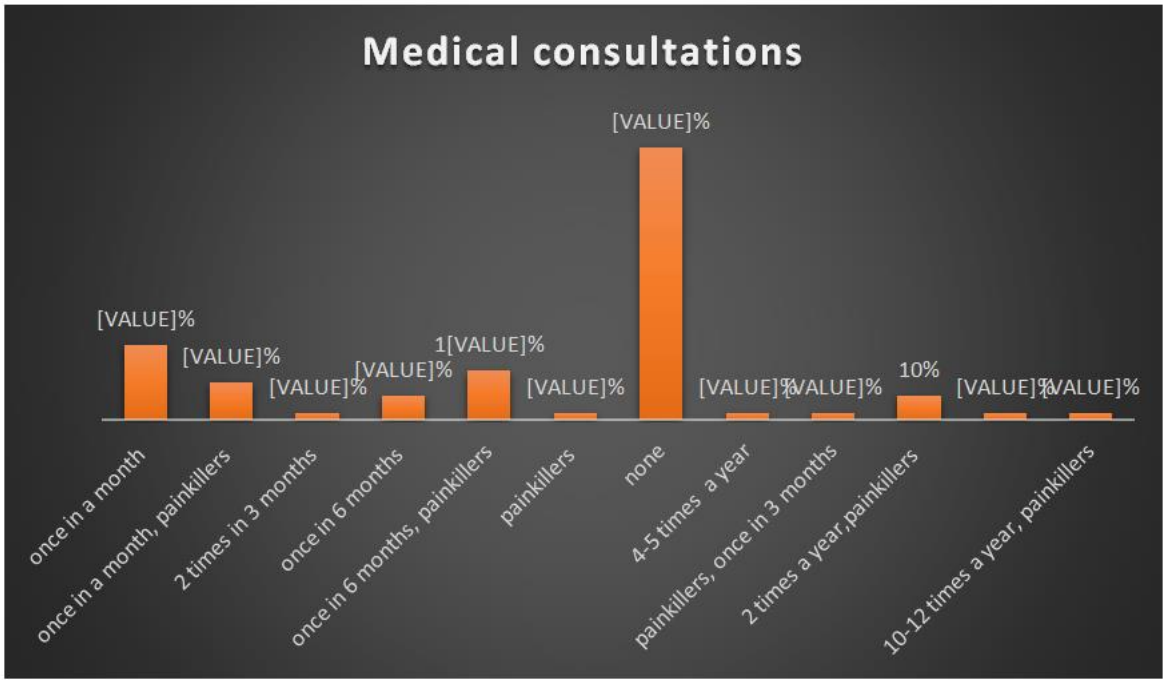
30% of the housemaids found relief with medications followed by massage (28%) and rest (28%)

Fig 9: Relieving factors for pain



36% of the housemaids never had sickness absenteeism and 20% used to take 1 leave in a month

Fig 10: Sickness Absenteeism



44% of housemaids never took medical consultation for musculoskeletal pain.

Fig 11: Medical Consultations

DISCUSSION

Type and nature of pain

As shown in graph 1 and 2, majority of the housemaids suffered from intermittent type dull aching muscle pain. A previous study was conducted for evaluation of lumbar overload in hotel maids who used to perform cleaning jobs. Maids needed to lean in order to do the task and were at risk for poor posture and the mechanical adverse impact of carrying heavy loads manually. The study concluded that improper ergonomic practices are responsible for aggravation or development of musculoskeletal problems in the workers[2].

Location of pain

Graph 3 states that the commonest painful sites in housemaids were upper back, lower back and knees. This finding can be attributed to the fact that Indian housemaids often work in squatting position which can put considerable load over their spine and knee joints. Also, this finding is in accordance with a previous study which found that pain scores of higher intensities were reported for both shoulder-neck and low back region. They also found that social demands from the home care workers were significantly correlated to low back pain. Also, an interesting finding stated that perceived general tension, was strongest predictor of shoulder-neck and low back pain in the workers[3]. Musculoskeletal disorders are found to be associated with some physical stressing habits like awkward postures and prolonged standing along with psychosocial stressors like being in a monotonous job, and lesser potential for promotion at work[4].

Visual Analogue Scale for pain intensity

Graph 4 shows that 26 housemaids had pain of 5 on 10 on VAS. 14 housemaids had pain 4/10, while 6/10 pain was reported by 14 housemaids on VAS. This shows that many housemaids were working at 50% of pain tolerance levels. Also, 10% of the housemaids reported 0 pain. A previous study concluded that work-break schedules along with ergonomic education may have an effect on musculoskeletal conditions and productivity[5]

Load lifted at work

Graph 5 shows that more than half of the housemaids didn't need to lift heavy weights as a part of their occupational demands. This can be attributed to the fact that majority of the maids wash utensils at the kitchen sink itself and hang the clothes for drying in close proximity of the washing area. Thus, not needing to carry heavy loads. The cooks who participated in this study also didn't need to lift heavy loads as a part of their occupational demands. A study done in Brazil for evaluation of lumbar overload in hotel maids concluded that negative ergonomics, which also includes carrying

heavy loads manually may lead to musculoskeletal disorders or aggravation of already existing ones. Usage of carts for transporting heavy loads can also be done[2].

Requirement to climb stairs for work

Graph 6 states that 46% of the housemaids did not need to climb stairs at work place due to either workplaces being at ground floor or availability of elevator facility to go at higher floors. This is indeed an ergonomic benefit to the workers, 50% of whom complain of knee, upper back pain and lower back pain.

Posture during work

Graph 7 depicts that squatting was the commonest posture adopted by 45% of the housemaids followed by standing posture that was adopted by 44%. In a previous study, the authors performed a review of the epidemiologic literature on occupational hazards experienced by cleaning workers and janitors. This study concluded that musculoskeletal disorders were associated with several physical stressors like assuming awkward postures while working or standing for long hours. In conclusion, they stated the association between mental disorders with psychosocial stressors and societal stigma[4].

Aggravating factors for pain

In graph 8, it can be seen that the commonest aggravating factors of pain reported by the housemaids were bending over (26%) and squatting while washing utensils (25%). These were followed by standing (20%) and squatting (19%). Also, continuous activities involving the upper limbs were reported as an aggravating factor by 10% of the housemaids. In the current study, low back area, upper back area and knee joints were the commonest reported sites of pain. Most of the common aggravating factors also involve movements which put these joints and muscles under stress. Also, this finding is in accordance with a previous study which states that improper or uncomfortable postures lead to development of musculoskeletal disorders[4]. Another study was done in dentists, who often work in non-ergonomic, awkward postures. Also, they perform some repetitive tasks. In this study the commonest sites of pain were neck, upper back and lower back with prevalence rate of 25.7%, 22.4%, and 20.7% respectively. Prolonged sitting was found to be the common aggravating factor for pain[6].

Relieving factors for pain

Graph 9 depicts the relieving factors reported by the housemaids in the study population as a remedy for their musculoskeletal pains. 30% resorted to taking medications to get rid of their pains, while massage (28%) and rest (28%) were the next most commonly practiced remedies. Usage of medications by a large proportion of the housemaids can be attributed to the fact that analgesics relieve pain easily, without requiring any manual effort. Another widely practiced relieving factors was rest and massage, according to the study. This can be attributed to the economic conditions of the housemaids, as these options are relatively cheap. In a previous study, authors analysed the effects of massage therapy on non-specific low back pain. The authors concluded that acute, sub-acute and chronic Low back pain problems showed betterment in pain, but the effect was short lived. Functional improvement was also observed in subjects with sub-acute and chronic Low back pain[7]. Lower education level in housemaids can be a contributing factor for opting short term remedies over ailments. A past study, wherein, the authors aimed at evaluating the association between educational level and dental disease and oral hygiene habits, showed that educational level has an influence over the oral conditions and has to be taken into account to assess the risk and defining preventive measures[8].

Sickness absenteeism from work

Shows that 36% of the maids didn't take leaves for musculoskeletal pains. This can be attributed to the loss of income associated with sickness absenteeism. A past study, attempted to investigate the association between presenteeism and absenteeism during the previous year and the levels of exhaustion and impaired work performance currently. They found that presenteeism at work, during the previous year, by itself, put the employees at a greater risk of suffering from moderate or severe exhaustion. Presence at work, absence at work and suffering from exhaustion had a positive association with impaired performance at work[9].

Medical consultations

According to graphic 11, 44% of the housemaids did not visit any medical practitioner for the musculoskeletal pains or complaints. This can be due to the lack of awareness about the grave nature and the serious repercussions that these problems have on health in the in the long term or it can also be due to poor social economic condition which is a barrier to avail medical facilities for this population. Initial consultations, follow ups, investigations and interventions required if any, might put financial burden over the poor community. Housemaids may be reluctant to visit a doctor due to high costs involved in the process. Cleaning industry workers' tasks are associated with high physical workloads[10]. A group of authors studied self- reported neck or shoulder pain and biomechanical workload during cleaning tasks in labs. They used surface electromyography for monitoring muscular activity. They stated that cleaners with low levels of pain showed

greater muscular activity during cleaning[11]. Comfortably activating the muscles to the required level during work may improve the productivity and efficiency of work. The participants in the present study were mostly from lower socio-economic strata. Hence awareness and therefore, coverage of medical insurance might not be available. This is supported by a study, done in participants from poor populations from Delhi, India. The results state that only 18% of the participants had coverage of medical insurance and the awareness about was also found to be low[12].

Clinical implications

As a developing country, India has humungous numbers of middle class, upper middle class and elite class households who employ housemaids. As evident from researches, housemaid's tasks are physically demanding and they may also be exposed to psychosocial stressors. It is the need of the hour to educate the housemaids about the risks involved in their job, the ergonomic ways to do the tasks and the long-term repercussions of negligence of health. Correct postures while working, use of mechanisation and timely medical and physiotherapy consultations can help. Identifying and alleviating occupational exposures is important to ensure a healthy and sustainable work environment. Special attention should be drawn to early signs of symptoms, such as general tension, preventing further development of musculoskeletal pain. There is a dire need to create awareness regarding all the factors in the population. Due to low education and financial resources, they are vulnerable to exploitation too. Also, government and the judiciary should take appropriate steps to secure the rights of this working class pertaining to working laws, health issues and protection from exploitation.

CONCLUSION

This study concludes that, the commonest musculoskeletal problems reported by the housemaids are pain in upper back (50%), lower back (50%) and knees (50%). 26% of the housemaids had pain rated as 5/10 on Visual Analogue Scale. Majority of the housemaids reported their pain to be dull aching and intermittent in nature. Bending over (26%) and squatting while washing utensils were the most reported aggravating factors of pain.

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