

Prevalence Of Musculoskeletal Disorders In Auto Drivers In Bareilly District: A Survey Study

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ABSTRACT

This study investigates the prevalence and risk factors associated with musculoskeletal disorders (MSDs) among auto drivers in the Bareilly district. Using a cross-sectional survey design, data were collected from 200 auto drivers using standardized tools like the Nordic Musculoskeletal Questionnaire (NMQ). The findings revealed that a significant proportion of drivers reported musculoskeletal pain, particularly in the lower back, neck, and shoulders. Key risk factors include prolonged driving hours, poor ergonomics, smoking, and higher BMI. The study highlights the need for ergonomic interventions, health promotion programs, and policy changes to improve the occupational health of auto drivers.

Musculoskeletal disorders (MSDs) represent a significant occupational health burden globally, especially among professional drivers exposed to prolonged sitting, repetitive movements, and whole-body vibrations. Auto drivers in India, an integral part of urban transportation, face heightened risks due to long working hours, poor vehicle ergonomics, and adverse lifestyle factors. Despite their essential role, limited research has focused on the occupational health challenges faced by this group. This cross-sectional survey examines the prevalence of MSDs among auto drivers in Bareilly district, India, and explores contributing occupational and lifestyle factors.

A total of 160 male auto drivers aged 25–45 years, with a driving history of at least 10 hours per day, were included in the study. Data were collected using a demographic questionnaire to document socio-demographic and occupational details, the Nordic Musculoskeletal Questionnaire (NMQ) to assess pain prevalence in nine body regions, and clinical assessments to measure shoulder asymmetry and pain intensity using a visual analog scale (VAS). Statistical analyses were conducted to determine the prevalence of MSDs and explore correlations between occupational and lifestyle risk factors and reported symptoms. This study underscores the high prevalence of musculoskeletal disorders among auto drivers in the Bareilly district.

Keywords: Musculoskeletal disorders, lifestyle, Auto drivers, visual analogue scale.

INTRODUCTION

Musculoskeletal disorders (MSDs) are a significant public health concern, especially among individuals involved in occupations that require repetitive movements, prolonged sitting, and exposure to physical stressors. Auto drivers, due to the nature of their work, are particularly vulnerable to developing MSDs. Long hours of driving, poor seating ergonomics, continuous exposure to vehicle vibrations, and limited physical activity contribute to the onset and progression of these disorders.

In India, where the use of auto-rickshaws is widespread, drivers play a critical role in the urban transportation system. However, the occupational health of this population remains underexplored. Studies have reported a high prevalence of back pain, neck pain, and shoulder discomfort among drivers, often leading to decreased productivity and quality of life. Despite these challenges, there is limited data available on the prevalence and associated risk factors of MSDs in this demographic, particularly in semi-urban regions like Bareilly district.

Understanding the prevalence and contributing factors of MSDs in auto drivers is essential to developing effective preventive and rehabilitative strategies. This study aims to bridge the gap in the literature by assessing the prevalence of MSDs among auto drivers in Bareilly district and identifying key occupational and lifestyle factors influencing their health. The prevalence of musculoskeletal disorders varies by region, occupation, and age group. Studies have shown that workers engaged in occupations requiring prolonged sitting, repetitive movements, or heavy physical labor are at a higher risk of developing MSDs. This risk is particularly pronounced in developing countries like India, where ergonomic practices are often overlooked in manual labor professions. MSDs in auto drivers, especially those driving auto-rickshaws and other small commercial vehicles, are of growing concern in India, as these workers represent a significant portion of the urban workforce.

Musculoskeletal disorders (MSDs) represent one of the most common and costly health problems worldwide, contributing significantly to disability and reduced work capacity, particularly among manual and semi-skilled laborers. Auto drivers, especially in developing countries like India, form a crucial part of the urban and semi-urban workforce, yet their health needs remain largely unaddressed. The need for this study arises from the following key considerations: Auto drivers, especially those operating in smaller cities like Bareilly, represent a demographic that has been significantly overlooked in public health research. While there is ample literature on musculoskeletal issues in industrial workers and heavy vehicle drivers (such as truck and bus drivers), limited data exist on auto drivers, whose work environment and physical demands are markedly different. This study aims to fill this gap by providing much-needed insight into the prevalence of MSDs among auto drivers in Bareilly.

METHODOLOGY

This cross-sectional survey study was conducted to assess the prevalence of musculoskeletal disorders (MSDs) among auto drivers in Bareilly district. A sample of 200 auto drivers was selected using random sampling methods. Data collection involved a structured questionnaire comprising demographic details, work-related factors, and lifestyle habits. The Nordic Musculoskeletal Questionnaire (NMQ) was used to assess the presence and severity of MSD symptoms in various body regions over the past 12 months. Additional data on driving hours, years of experience, seating posture, physical activity levels, and stress were also collected.

Participants were recruited from auto stands across Bareilly district, and informed consent was obtained from each participant prior to data collection. Inclusion criteria included auto drivers aged 20–60 years with at least one year of driving experience, while drivers with pre-existing medical conditions affecting musculoskeletal health were excluded. Data were analyzed using descriptive statistics to determine the prevalence of MSDs, and chi-square tests were employed to identify associations between MSDs and risk factors. Ethical approval for the study was obtained from the institutional ethics committee.

• Inclusion Criteria:

- The study will include auto drivers in the selected geographical area.
- The study will include auto drivers between the age of 25-45 years.
- This study will include auto drivers with the driving duration of 10 hours per day.

• Exclusion Criteria:

- Individuals with pre-existing musculoskeletal conditions
- Who have received specific treatments for musculoskeletal issues will be excluded.

RESULT

The study revealed a high prevalence of MSDs, with neck pain reported by 53.1% of participants, shoulder pain by 51.9%, and lower back pain by 40%. The severity of pain ranged from mild to unbearable, with significant portions of participants reporting distressing or debilitating symptoms.

Table 1: Frequency and percentage of driving hours of auto drivers N=160

Driving hrs	Frequency	Percent
less than 8 hrs	96	60.0
more than 8 hrs	64	40.0
Mean hrs $\pm$ SD	7.575 $\pm$ 2.272 hrs	

Above table shows that average driving of auto drivers a day was 7.57 hrs and majority of 60% drivers had less than 8 hrs driven a day and 40% drivers had more than 8 hrs driven a day in this study. Percentage of driving hours is showing in pie chart graph given below.

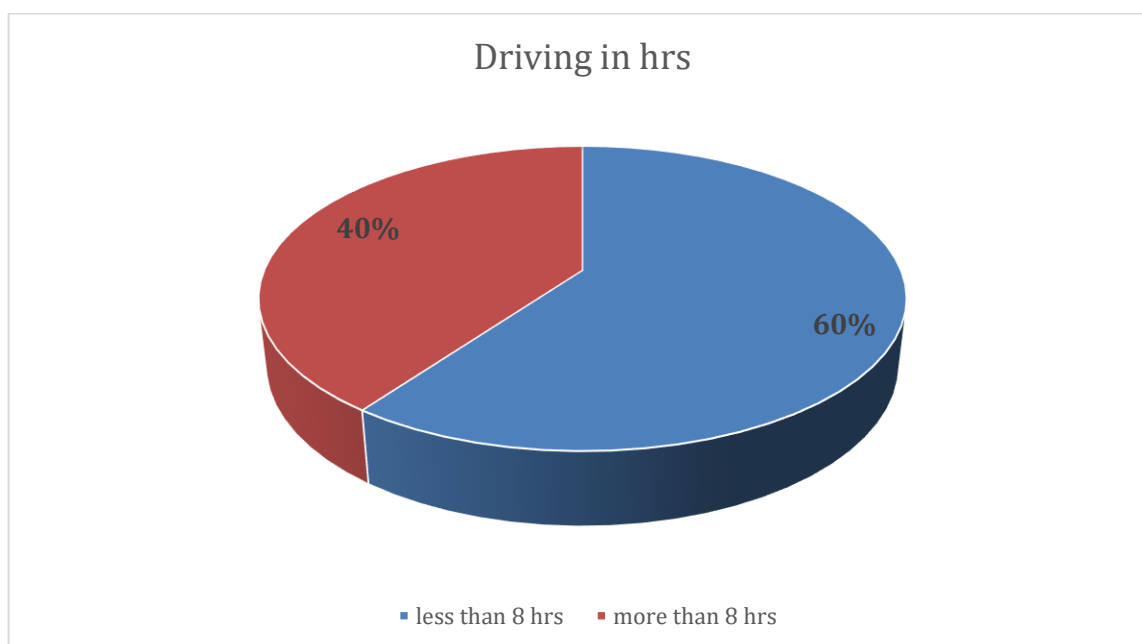


Table 2: Frequency and percentage of lower back pain in auto drivers

N=160

Reported Lower Back Pain	Frequency	Percent
No	96	60.0
Yes	64	40.0

Above table shows that majority of 60% auto drivers had no lower back pain and 40% auto drivers had lower back pain in this study. Percentage of lower back pain is showing in pie chart graph given below.

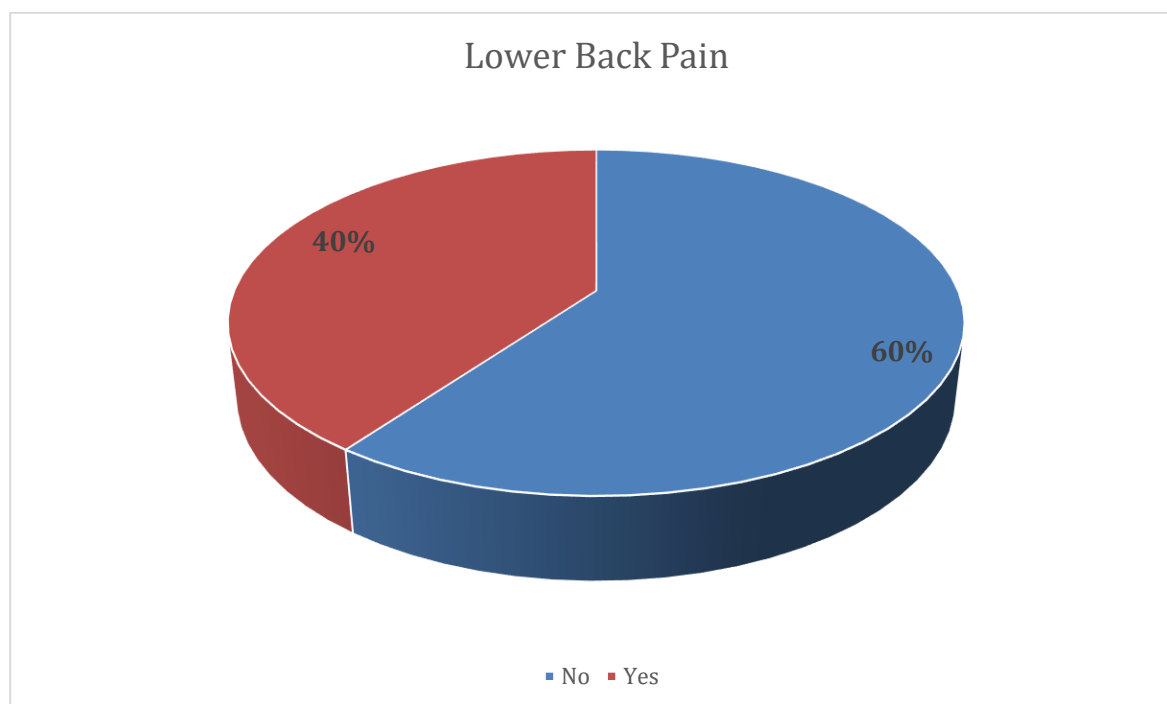


Table 3: Frequency and percentage of neck pain in auto drivers N=160

Reported Neck Pain	Frequency	Percent
No	75	46.9
Yes	85	53.1

Above table shows that majority of 53.1% auto drivers had neck pain and 46.9% auto drivers had no neck pain in this study. Percentage of neck pain is showing in pie chart graph given below.

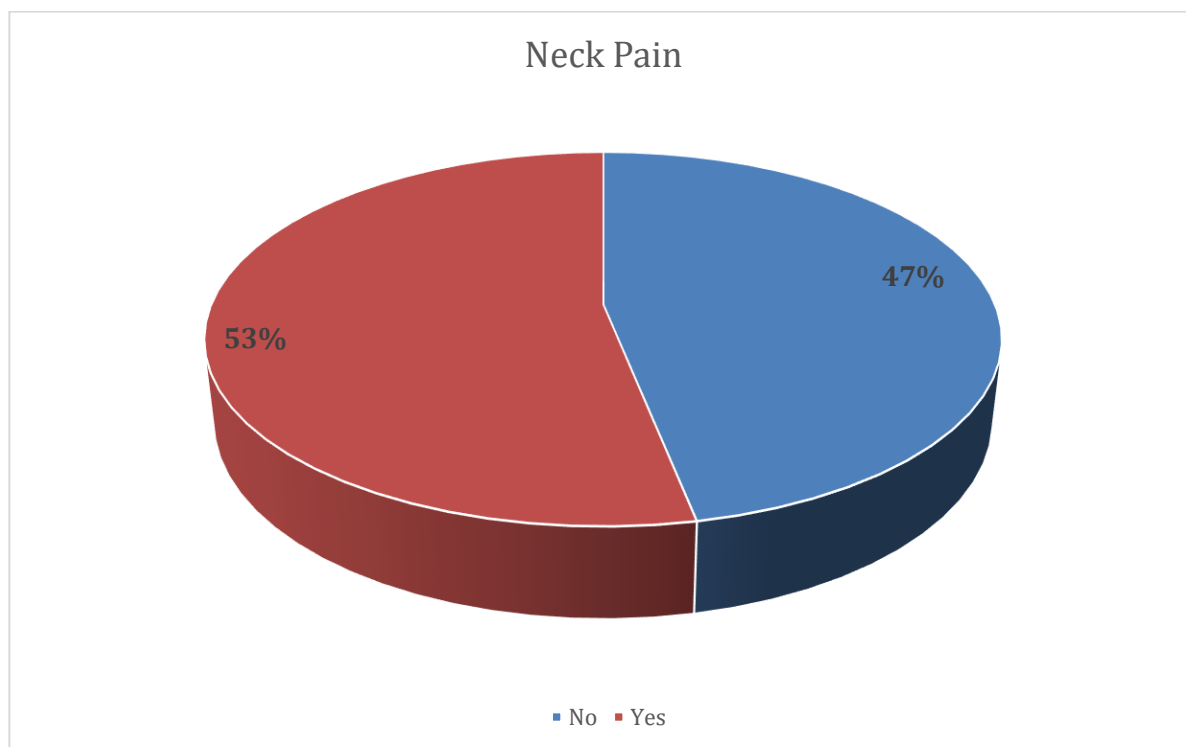
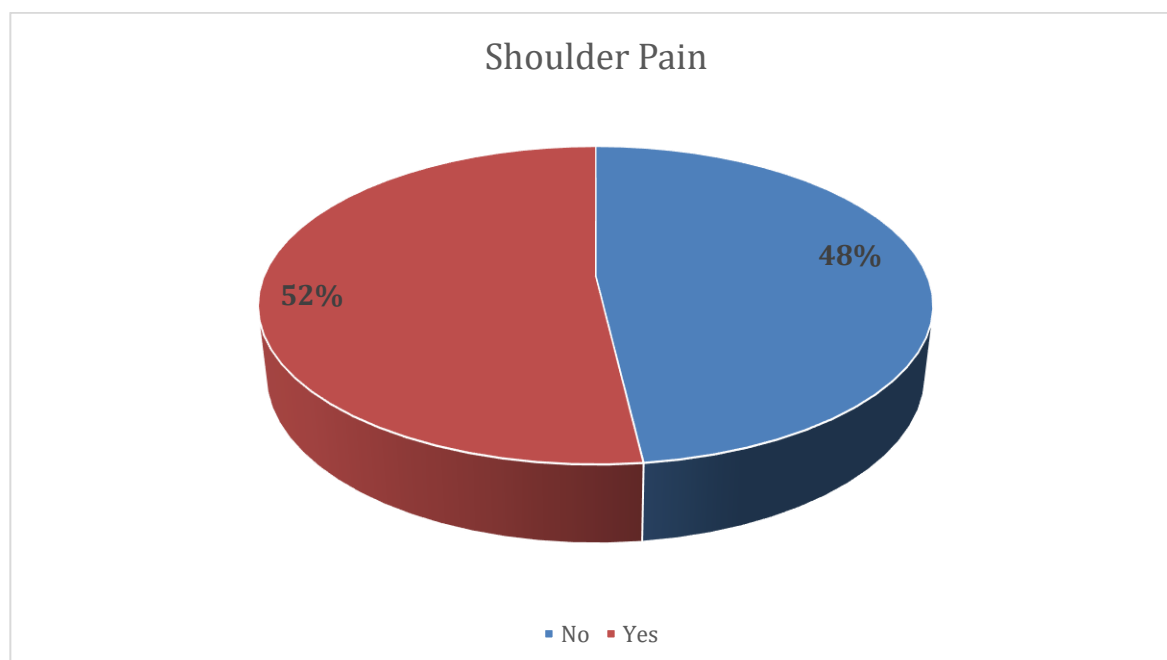


Table 4: Frequency and percentage of shoulder pain in auto drivers N=160

Reported Shoulder Pain	Frequency	Percent
No	77	48.1
Yes	83	51.9

Above table shows that majority of 51.9% auto drivers had shoulder pain and 48.1% auto drivers had no shoulder pain in this study. Percentage of shoulder pain is showing in pie chart graph given below.



DISCUSSION

The findings align with global research on MSDs in drivers, highlighting the cumulative effects of prolonged sitting, poor ergonomics, and whole-body vibration. Addressing these issues through ergonomic interventions, health promotion, and policy changes could reduce the burden of MSDs among auto drivers. This study investigated the prevalence and risk factors associated with musculoskeletal disorders (MSDs) in auto-rickshaw drivers in the Bareilly district. The findings revealed that a significant portion of the drivers reported musculoskeletal pain, particularly in the lower back, neck, and shoulders. These outcomes are consistent with previous research that links prolonged sitting, poor ergonomics, and whole-body vibration (WBV) to increased musculoskeletal problems among drivers. This study aimed to assess the prevalence of musculoskeletal disorders (MSDs) among auto drivers in the Bareilly district and to identify the occupational and lifestyle factors contributing to these conditions. The findings revealed that a large proportion of drivers suffer from musculoskeletal pain, particularly in the lower back, neck, and shoulders. These findings align with prior studies that have consistently reported a high prevalence of MSDs in commercial drivers due to prolonged sitting, poor ergonomics, and repetitive movements.

The study found a significant association between years of experience as an auto driver and the prevalence of lower back pain. Drivers with more years of experience were more likely to report back pain, suggesting that prolonged exposure to the physical demands of driving increases the likelihood of developing musculoskeletal problems. Similar findings were reported by Shaikh et al. (2013), who found that auto-rickshaw drivers in Karachi, Pakistan, with longer work histories experienced more frequent lower back pain. This relationship can be attributed to the cumulative effects of prolonged sitting, poor posture, and exposure to whole-body vibration over time. Vieira et al. (2016) also found that commercial drivers, including truck drivers, experienced chronic back pain due to long hours in static positions with minimal ergonomic support.

Key contributing factors identified included prolonged driving hours, inadequate vehicle ergonomics, smoking habits, physical inactivity, and obesity. The mean body mass index (BMI) of the participants was 26.913, with 30% classified as overweight and 32.5% as obese. Additionally, the musculoskeletal symptoms negatively impacted work performance, with 56.9% reporting reduced productivity and 15.6% missing over 10 workdays due to pain. Despite the burden of symptoms, only 47.5% of participants sought medical attention, underscoring barriers to healthcare access such as financial constraints and lack of awareness.

The findings highlight the urgent need for interventions, including ergonomic improvements in vehicle design, targeted public health initiatives to promote healthier lifestyles, and enhanced healthcare accessibility. Policymakers and stakeholders must prioritize occupational health strategies for this workforce to reduce MSD prevalence and improve productivity. Future research should adopt longitudinal approaches and explore regional variations to develop comprehensive solutions tailored to auto drivers. Addressing these challenges is critical not only for the well-being of auto drivers but also for ensuring the efficiency and sustainability of urban transportation systems.

CONCLUSION

This study underscores the high prevalence of musculoskeletal disorders among auto drivers in the Bareilly district. Ergonomic improvements, health education, and workplace policy changes are recommended to mitigate these risks and enhance the quality of life for auto drivers.

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