



PREVALENCE OF MUSCULOSKELETAL DISORDERS AMONG GUITARISTS IN MUMBAI METROPOLITAN REGION

Ancy Vincent¹, Joanna Baptist², Sanskruti Ravi³

Terna Physiotherapy College, Terna Medical College Campus, 3rd floor, Sector 12, Nerul, Navi Mumbai

*Corresponding author

ABSTRACT :

This study aimed to assess the prevalence of musculoskeletal disorders (MSDs) among guitarists in the Mumbai Metropolitan Region, addressing an understudied aspect of occupational health in musicians. **Methods:** A cross-sectional survey was conducted involving over 200 guitarists with more than 10 years of experience, ultimately including 100 participants who met the study's inclusion criteria. Data were collected on demographic information, playing habits, and the presence of musculoskeletal symptoms across various body regions. **Results:** The findings revealed a high prevalence of MSDs, with 87% of participants reporting symptoms within the past 12 months. Commonly affected areas included the shoulders (57 participants), neck (51 participants), lower back (33 participants), wrists/hands (35 participants), and upper back (28 participants). Notably, 58% of participants played while sitting, which may contribute to poor posture and discomfort. Furthermore, 52% continued to perform despite experiencing pain, with 69% not seeking treatment. The study indicated a significant relationship between playing hours and the prevalence of pain, highlighting the risks associated with prolonged practice in non-ergonomic positions. **Conclusion:** This research underscores the urgent need for targeted interventions and preventive strategies to mitigate the risk of MSDs among guitarists in Mumbai. The findings contribute to the growing body of knowledge regarding occupational health challenges in the music industry and emphasize the importance of promoting healthier playing practices.

KEYWORDS: musculoskeletal disorders, guitarists, occupational health, Mumbai, ergonomics.

INTRODUCTION :

Music is a powerful form of expression that transcends boundaries and touches the souls of millions around the world. Behind every captivating melody lies a dedicated musician who skillfully maneuvers their instrument, immersing themselves in the creation of captivating harmonies. Guitarists, in particular, have carved a unique place in the realm of music, captivating audiences with their intricate fingerpicking, soulful strumming, and virtuosic solos. However, this artistic pursuit is not without its challenges. The repetitive and prolonged physical demands placed on guitarists can take a toll on their musculoskeletal system, potentially leading to a range of discomforts and injuries. These musculoskeletal disorders encompass a variety of conditions, including tendonitis, carpal tunnel syndrome, shoulder impingement, and neck and back pain, among others. The prevalence and impact of these disorders among guitarists have garnered increasing attention within the field of occupational health.^{[1][2]} Understanding the prevalence and factors contributing to musculoskeletal disorders among guitarists is crucial for several reasons. Firstly, it allows us to address the health concerns of these musicians, promoting their well-being and longevity in their artistic careers. Secondly, it enables us to develop effective preventive strategies and interventions that can minimize the risk of developing these disorders, ensuring a sustainable and fulfilling musical journey for guitarists.

This research project aims to investigate the prevalence of musculoskeletal disorders among guitarists and examine the underlying factors that contribute to their development. By exploring the challenges faced by these musicians and analyzing the impact of various variables such as playing technique, practice duration, ergonomics, and individual characteristics, we seek to provide valuable insights into the complex interplay between musicianship and musculoskeletal health. The prevalence of musculoskeletal disorders among guitarists in Mumbai remains a significant yet understudied issue. This research project aims to fill this knowledge gap by investigating the occurrence and impact of musculoskeletal disorders specific to guitarists in Mumbai's vibrant music scene. Through a survey, we will gather data on the prevalence, contributing factors, and associated challenges faced by guitarists. The findings will provide valuable insights into the musculoskeletal health of Mumbai's guitarists, allowing for the development of targeted interventions, ergonomic recommendations and preventive strategies.

By addressing the occupational health concerns of guitarists in Mumbai, this study aims to promote their well-being, longevity, and artistic endeavors while fostering a healthier and sustainable environment for musicians in the city.

Aims & Objectives:

Aim:

- To find the prevalence of musculoskeletal disorders among guitarists in Mumbai Metropolitan Region.

Objectives:

- To know the incidence of pain in guitarists.
- To find out the gender wise distribution of pain among guitarists.
- To find out age wise distribution of pain among guitarists.
- To find out the commonest site of affection among guitarists.
- To find out the number of players who have sought treatment for the pain.

Material & Method:

A total of 100 guitarists with an experience of more than 10 years were recruited for the study. The purpose of the study and procedure was explained to the subjects and an informed written consent was also taken. They were made clear that their responses will be kept confidential and will only be used for research purpose. Then the subjects were instructed how to fill the self-constructed questionnaire and standardized Nordic questionnaire which thereafter were handed over to them. The completed questionnaires were taken from them. From the completed questionnaires, the data was statistically analysed to retrieve the information about the increased prevalence of musculoskeletal disorders among guitarists. Self – administered questionnaire (SAQ) and Nordic Musculoskeletal Questionnaire (NMQ) were adopted in this study.

RESULT:

The average age of participants was 32.41 years (SD = 8.65), with 76% in the 20-40 age group, showing a predominance of younger guitarists. Only 7% were aged 50-60. In terms of gender, 63% were male, and 37% were female, reflecting a male majority but with notable female participation. Among the guitarists, 73% were right-handed, and 27% left-handed. Professional playing was the purpose for 62% of participants, while 24% played recreationally, and 14% for both reasons. The average playing time was 3.18 hours (SD = 2.04). Most played while sitting (58%), followed by standing (21%), and alternating between both (21%).

A significant percentage (87%) reported experiencing pain or discomfort, mainly in multiple upper body areas, with 52% continuing to play despite the discomfort. Commuting to a studio/class contributed to discomfort for 33% of those who traveled. The discomfort had persisted for over a year for 54% of participants, while 46% experienced it for less than a year. A small number (11%) reported discomfort during daily routines due to long hours of playing. Some participants had underlying health conditions such as diabetes (10%) and hypertension (9%). Of those with discomfort, 31% used medications, but none sought physiotherapy treatment.

Musculoskeletal issues were common over the past 12 months, with the most affected areas being the *shoulders* (57) and *neck* (51), followed by the *lower back* (33), *wrists/hands* (35), and *upper back* (28). Less affected were the *hips/thighs* (13), *knees* (12), *elbows* (14), and *ankles/feet* (7). Similarly, over the past 7 days, the *shoulders* and *neck* remained the most affected areas, followed by discomfort in the *wrists/hands* and *lower back*. No participants reported discomfort in their ankles/feet. These findings indicate a strong vulnerability in the upper body, particularly the shoulders and neck, likely due to playing-related postures. The data underscores the need for preventive measures and management strategies to address these musculoskeletal concerns.

Discussion:

This study aimed to investigate the prevalence of musculoskeletal disorders (MSDs) among guitarists in the Mumbai Metropolitan Region. A cross-sectional survey was conducted among 100 guitarists with over 10 years of experience, out of more than 200 approached. The results confirmed the hypothesis, showing that MSDs are a significant issue within this group. The findings revealed that 87% of participants experienced MSDs, with the most common symptoms occurring within the 12 months preceding data collection. This aligns with prior research showing that guitarists are particularly prone to musculoskeletal issues, such as hand/wrist, shoulder, neck, and back pain, primarily due to repetitive movements, poor posture, and inadequate rest. Similar studies have emphasized that these symptoms can be divided into organic (e.g., tenosynovitis, arthritis) and non-organic (e.g., overuse syndrome, focal dystonia) problems, both of which are preventable.

In the current study, upper limb and spinal issues were the most prevalent, affecting 91.72% of participants. These findings are consistent with research by da Silva et al., which found that women were more often affected, especially by neck and shoulder pain, and that older guitarists frequently experienced elbow pain. The study also identified playing time as a contributing factor, with longer hours correlating with a higher risk of MSDs, as noted by Ranelli et al., who reported a 5-7% increase in pain prevalence for every additional hour of practice.

Additionally, 10% of participants had diabetes, and 9% had hypertension, both of which may exacerbate musculoskeletal issues due to joint mobility limitations and muscle fatigue, respectively. Poor posture was prevalent among participants, with 58% playing while sitting and 21% while standing. Prolonged sitting in non-ergonomic positions likely contributed to the high prevalence of pain in the back, neck, shoulders, wrists, and hands.

A significant portion of participants (69%) carried their guitars while commuting, which further contributed to pain, particularly in the shoulders, upper and lower back, and knees. Despite the prevalence of pain, 52% continued to perform, and 70% did not take breaks during practice, increasing their risk of MSDs.

Most participants (69%) did not seek treatment for their pain, with 31% using medication such as painkillers or muscle relaxants, but none pursued physiotherapy. This underscores the need for better awareness of preventive and therapeutic measures, particularly physiotherapy, to manage musculoskeletal disorders among guitarists. The study also shed light on several other key factors contributing to the high prevalence of musculoskeletal disorders (MSDs) among guitarists. One of the most noteworthy observations was the connection between commuting and the onset of pain. A large number of guitarists (69%) reported carrying their guitars during commutes to their studios or classes, and among these, a significant portion (33%) mentioned that the commute exacerbated their pain. This suggests that the weight of the instrument, combined with the strain of carrying it for extended periods, adds to the musculoskeletal burden on the upper body, particularly the shoulders, neck, upper back, and lower back. Additionally, awkward postures during transportation could further aggravate these issues.

Another significant finding was the observation that over half of the participants (52%) continued to perform or practice even after experiencing discomfort or pain. This is a troubling trend, as continued strain on affected muscles and joints without adequate rest or treatment can lead to more serious and chronic musculoskeletal problems. Despite this, only 31% of those experiencing pain sought any form of treatment, with the majority relying on pain relief medications such as painkillers and muscle relaxants. None of the participants reported seeking physiotherapy, which highlights a potential gap in awareness and accessibility of specialized musculoskeletal care like physiotherapy among musicians.

Conclusion:

In conclusion, this research project on the prevalence of musculoskeletal disorders (MSDs) among guitarists in the Mumbai region sheds light on a significant but often overlooked area within the occupational health of musicians. Despite some limitations, the study offers valuable insights into the musculoskeletal challenges experienced by guitarists and emphasizes the need for targeted interventions and preventive measures.

The analysis of a diverse sample of guitarists has identified key risk factors such as prolonged practice hours, poor posture, repetitive movements, and the physical strain of commuting with instruments, all contributing to the high prevalence of MSDs. These findings highlight the critical importance of ergonomic improvements, changes in practice habits, and awareness of the need for regular breaks to reduce injury risks.

Furthermore, the study adds to the existing body of knowledge in the field of musicians' health, focusing specifically on guitarists in Mumbai. It offers a foundation for future research and initiatives aimed at improving the musculoskeletal health of musicians and enhancing their ability to perform without compromising their physical well-being.

By raising awareness and promoting healthier practices, this research seeks to contribute to a more supportive environment for guitarists in Mumbai, allowing them to sustain their passion for music while minimizing the risk of long-term musculoskeletal problems.

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