International Journal of Community Medicine and Public Health
Mulay RV et al. Int J Community Med Public Health. 2019 Jun;6(6):2456-2459
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20192304

Original Research Article

Prevalence and risk factors for work related musculoskeletal disorders in flight attendants

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Received: 26 February 2019
Revised: 09 April 2019
Accepted: 10 April 2019

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ABSTRACT

Background: Flight attendants are the cabin crew members working in different commercial airlines. Their main job is to ensure safety and comfort of all the passengers. They are exposed to certain ergonomic stressors like long standing, irregular working hours and working in confined spaces and thus are likely to experience work related musculoskeletal disorders. The purpose of this study was to find out the prevalence and risk factors for work related musculoskeletal disorders in flight attendants.
Methods: A survey-based study was performed. Self-made questionnaire was used and was validated by 3 experts in the Physiotherapy field. Workplace stress scale was also used to determine the level of mental stress that they experience. Informed consent was taken by each flight attendant participating in the study. Questionnaire was given to flight attendants working for different airlines like Spice Jet, Air India and Jet Airways. Hard copy of the questionnaire and online forms of the questionnaire were used to complete the data collection.
Results: A total of 82% flight attendants reported to have work related pain in one or more body regions. Pain was commonly reported in feet and ankle, lower back and neck. Common risk factors were lack of rest breaks, prolonged standing/long working hours, wearing heels and mental stress.
Conclusions: Thus, the study shows high prevalence of work-related musculoskeletal disorders in flight attendants.

Keywords: Flight attendants, Musculoskeletal, Disorders

INTRODUCTION

Flight attendants are aircrew members employed by various commercial airlines. They are also known as cabin crew or air hosts/hostesses.[1] The main job of a flight attendant is to ensure safety of all passengers and additionally they are responsible to follow or implement safety protocols in case of emergency. Flight attendants are also supposed to perform customer service duties such as serving meals and drinks, as a secondary responsibility.[2]

The number of flight attendants required on flights are mandated by international safety regulations. For planes up to 19 passenger seats, no flight attendant is required. For larger planes, one flight attendant per 50 passenger seats is required.[3] Majority of flight attendants for most airlines are female, though a substantial number of males have entered the industry since 1980.[4]

Work related musculoskeletal disorders or cumulative trauma disorders are the disorders of musculoskeletal system which occur gradually over time because of the workplace conditions. They may be present during

working hours or at rest.[5] Musculoskeletal disorders resulting from work is the most common cause of restricted or lost work time.[6]

These disorders affect muscles, ligaments and tendons in all parts of the body. Common risk factors for development of these disorders are fixed, constrained or awkward body postures at work, repetitive motions and movements and inadequate rest.[7]

According to the health survey performed by Occupational Health Research Consortium in Aviation in United States of America, 47% of flight attendants experienced work-related injuries/illness out of which 33% were musculoskeletal in nature.

Flight attendants working in a commercial airline are often exposed to ergonomic stressors such as irregular working hours leading to altered circadian rhythm, long standing, working in confined space and therefore are likely to experience work related musculoskeletal disorders.

METHODS

To assess the prevalence of work-related musculoskeletal disorders, a self-made questionnaire was used. It was face validated by 3 experts in the physiotherapy field. (This was done from Oct.2017 till Feb.2018) First part of the questionnaire comprised of personal and work-related information of the flight attendants, their work environment and occurrence, site, intensity of pain that they may experience. Second part of the questionnaire comprised of workplace stress scale which was used to measure the mental stress that they may experience. After the questionnaire was made, ethical approval was taken. (Ethical approval was obtained on 25th Aug.2018) After the approval of ethical committee, data collection and recruitment of subjects was started.

Consent was taken by each participant.The sampling technique used was convenience sampling and calculated sample size was 33. The subjects were recruited from various commercial airlines in India like Spice Jet, Air India and Jet Airways. Hard copy and soft copy (google forms) both were used to complete the data collection. The data collection went on till Jan.2019.

Exclusively flight attendants (who did not work as flight attendant and ground staff both) were included in the study. Flight attendants who had previous history of trauma or any other past medical or surgical history related to musculoskeletal pain were excluded from the study.

After completion of data collection, Microsoft excel was used to analyze the data. The data analysis was completed in Feb.2019. 4 Flight attendants were only working for international flights, 9 of them only for domestic flights and 20 were working for domestic and international both. Out of 33, 4 were males and 29 females. The mean of years of experience working as a flight attendant was 7.79 years.

RESULTS

It was seen that 82% of the flight attendants had work related pain. Pain in more than one body regions was also commonly reported. Feet pain was commonest (58%) followed by lower back, neck and shoulders. The most common aggravating factor for pain was lack of rest periods and prolonged standing or long working hours.

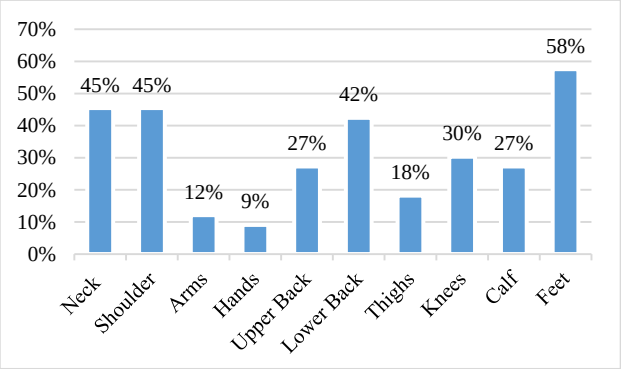

Figure 1: Location of pain.

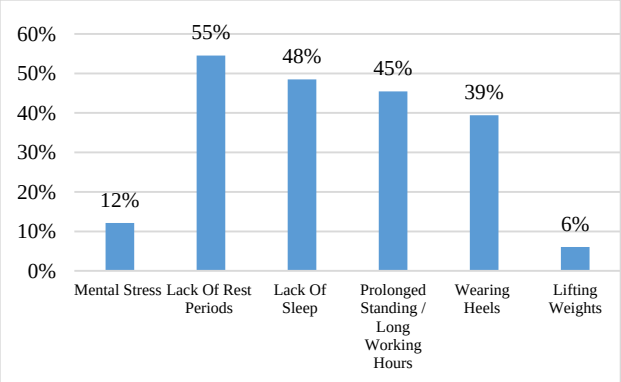

Figure 2: Risk factors for WRMSDs.

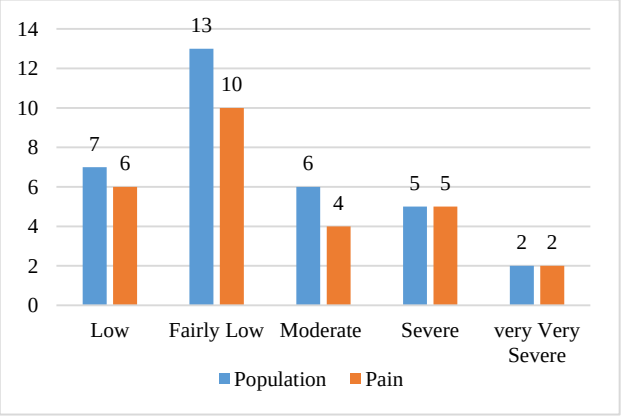

Figure 3: Worlplace stress scale.

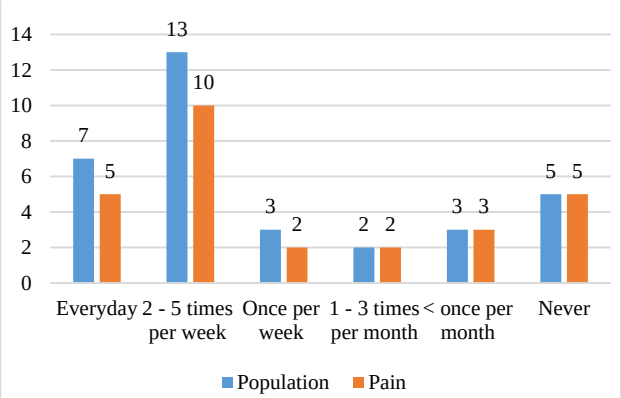

Figure 4: Physical activity and pain.

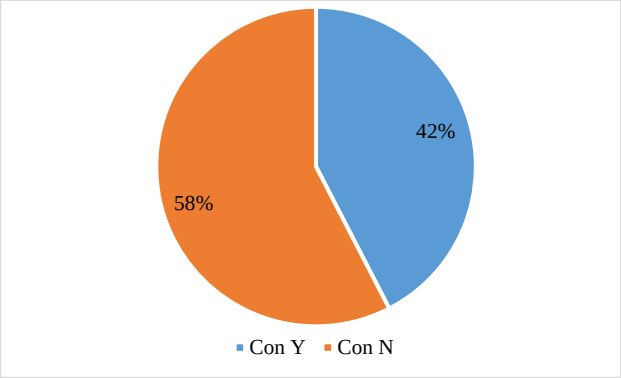

Figure 5: Consultation for pain.

12% of the population reported to have mental stress as an aggravating factor for work related pain but majority of the population reported to have 'fairly low' workplace stress according to the workplace stress scale. 19 flight attendants had rest breaks at their workplace and 14 did not. However, flight attendants in both these categories reported to have work related pain.

42% of the population actually consulted a medical professional for the pain and 51% reported to have missed some days of work because of the work-related pain that they experienced.

DISCUSSION

Flight attendants at their job site have to ensure that all passengers are safe and comfortable at all times. To ensure this, they have to perform various duties like making sure that the safety equipment is working at all times, greet passengers, provide them food and beverages as and when required and monitor, manage and secure the cabin.[8]At their jobsite i.e. during the flight, they spend maximum time in standing. They also have to lift heavy weights, push and pull food trolleys and walk in the aisles.

As shown in previous studies on flight attendants,[9] feet pain was the highest. The reason for this could be wearing heels. Female flight attendants have to wear heels as a part of their uniform. But Wearing heels causes significant increase in the paraspinal muscle activation especially in the cervical and lumbar area. The muscles eventually get tighter which leads to pain.[10]

Another reason for work related pain is prolonged standing. Working hours for flight attendants vary according to the duration of the flight. But maximum flight attendants who participated in this study worked for 5-7 days in a week and 5-7 hours in a day. They also reported that during the flight they have to stand for maximum time. Lower limb and trunk muscles get fatigued after 5 hours of prolonged standing and because they have to stand for such long hours, it causes muscle fatigue leading to pain.[11]

Also, because they work in a confined and constricted area, it gives them less freedom to move around and less opportunity to alternate the muscle use. This lack of flexibility in choosing body positions in turn leads to fatigue and pain.[11] Pain in neck and shoulders can be because of repetitive overhead activity like closing the luggage compartments and pushing and pulling of heavy trolleys.

Mental stress was also found to be one of the aggravating factors for work related pain. Stress causes increase in the muscle activity, muscle tension and produces ischemia, reflex muscle spasm, oxygen depletion and release of pain producing substances. This causes or aggravates work related pain.[12]

CONCLUSION

This study shows high prevalence (82%) of work-related pain in flight attendants.

Clinical significance

As maximum pain was there in Feet, foot posture needs to be evaluated. Calculating the effect of Footwear modification and Ergonomic advice on the work-related pain is the future scope of this study.

Limitation of study

Further studies are required to understand the risk factors in detail and also to determine relationship between years of experience as flight attendant and work pain.

ACKNOWLEDGEMENTS

Mr. Ajit Singh and Mr. Milind Joshi and all the flight attendants who participated in this study.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Mulay RV, Gangwal A, Shyam AK, Sancheti PK. Prevalence and risk factors for work related musculoskeletal disorders in flight attendants. Int J Community Med Public Health 2019;6:2456-9.