

“PREVALENCE OF WORK RELATED MUSCULOSKELETAL DISORDERS AMONG AUTO-RICKSHAW DRIVERS OF VADODARA CITY.

Dr. Madhavi Sontakkey,¹ Dr. Mehul Tank,² Dr. Divyesh Suba³
Assistant Professor of Parul Institute of Physiotherapy, Parul University, Vadodara.

BPT, Parul Institute of Physiotherapy, Parul University, Vadodara.

BPT, Parul Institute of Physiotherapy, Parul University, Vadodara.

ABSTRACT:Background: Musculoskeletal disorders have been described as the most notorious and common causes of severe long term pain and physical disability that affects millions of people across the world. Auto-drivers are prone to work related musculoskeletal disorders. This study investigated the prevalence and work related musculoskeletal disorders among auto-rickshaw drivers in Vadodara. **Method** A NORDIC musculoskeletal questionnaire was used to collect information about work related MSD's among auto-rickshaw drivers of Vadodara. Sample Size – 100 Auto-rickshaw drivers. **Results** Frequency percentage of pain reported in auto-rickshaw drivers during last 12 months were neck (66%), shoulders (37%), elbows (21%), wrist/hands (36%), upper back (36%), lower back (60%), hip/thighs (11%), knees (42%), and ankle/feet (19%). Frequency percentage of pain reported in auto-rickshaw drivers during last 7 days were neck (25%), shoulders (10%), elbows (04%), wrist/hands (10%), upper back (10%), lower back (39%), hip/thighs (06%), knees (20%), and ankle/feet's (08%). Frequency percentage of pain reported in auto-rickshaw drivers during 12 months which prevented from carrying out normal activities were neck (53%), shoulders (18%), elbows (05%), wrist/hands (13%), upper back (16%), lower back (53%), hip/thighs (05%), knees (25%), and ankle/feet's (06%). **Conclusion** It was concluded that there is high prevalence of musculoskeletal disorders among auto-drivers of Vadodara city. The most common WMSDs among auto-drivers of Vadodara city are neck pain followed by lower back and knee pain. The study represents strong evidences WMSDs were common among auto-drivers. In conclusion, work related musculoskeletal disorders represent a significant burden for auto-drivers.

Key words: **WMSDs:-** Work related musculo-skeletal disorders **LBP:-** Low back pain **RULA:-** Rapid upper limb assessment **WBV:-** Whole body vibrations.

Introduction :

“Musculoskeletal disorders’ include a wide range of inflammatory and degenerative conditions affecting the muscles, tendons, ligaments, joints, peripheral nerves, and supporting blood vessels. Body regions most commonly involved are the low back, neck, shoulder, forearm, and hand, although recently the lower extremity has received more attention.^[1]

People working in transport sector spend more than 8-10 hours a day daily in traffic. Professional drivers have a lifestyle that is not conducive to good health.^[10] Auto rickshaw are a common means of public transportation in many countries in the world as well as in india. They are also known as the three-wheelers, tempo, tuk-tuk, trishaw, auto, rickshaw, auto-rickshaw, bajaj, rick, tricycle, moto-taxi, baby taxi or lapa.^[11]

Auto are three wheeler vehicle for hire which does not have doors included of a small cabin for the driver at the front and seats for passengers at the rear. The driver not given so much consideration from the time it was first

conceived in 1990s. the position of the handlebar and the cabin is such that it bound the movement of the driver which leads to discomfort.^[12] The space provided for the driver is so small that he is bound to a restricted area and cannot do his movements properly. Rickshaw drivers have to maintain their position for several hours in a day which may cause musculo-skeletal disorders among these drivers. The driver cannot move his leg properly while applying brakes because of small space provided for the driver.^[13]

Share autos area preferred mode of transportation for short distances in Madurai: a city that is home to large number of migrants. The auto and share-auto drivers spend most of their time during working hours in roadway and/or in bus stands while the taxi drivers park their cars to wait for passengers mainly in taxi/bus stands or stops. Therefore, these drivers are at high risk to be affected by some risk factors. The majorities of drivers remain unaware of the health effects of noise and polluted air this is the main causes of the occupational hazards of auto and other drivers. Auto drivers have a lifestyle that is not conducive to good health. In addition to their exposure to noise and air pollution the job does not provide the same opportunities for social contact as many other jobs, and shift work, unsocial hours etc can disrupt both home life and social activity. Sitting in the driving position exerts considerable forces on the spine and can cause a number of problems with the musculoskeletal system in particular back pains, headaches, stress, and general stiffness. The driving posture also causes problems for the digestive system^[14].

A variety of epidemiologic studies has established that specific work-related risk factors may cause musculoskeletal complaints. The association between job type and the specific activities within jobs that predispose to the risk of developing such disorders is well documented. It is obvious that the drivers and official employees apply workplace activities such as manual handling, prolonged sitting and standing, bending and repetitive tasks, so WMSDs are gradually shaped over time; which may have substantial effects on their personal and social life.^[15-16]

There are so many auto-drivers who are prone to back and neck problems arising due to their work pattern. Most of them either suffering from neck or back pain or both because of prolong sitting and/or driving in an awkward posture^[20].

PROCEDURE

MATERIALS USED:

Informed consent form
Consent form
Questionnaire

Paper/Pencil/pen

METHODOLOGY:

Selection of particular auto-drivers was based on convenience sampling and support from them. All participants were informed about the objectives of study, and consent taken from them before their participation [11]. A standardized questionnaire Nordic questionnaire was used as the survey instrument. Since all the drivers are not able to communicate in English so whole procedure was explained to them first hindi or gujarati then data was collected from them on basis of their opinion.

OUTCOME MEASURES:

Extended Nordic Musculoskeletal Questionnaire (NMQ-E).

TECHNIQUES:

The physical therapists explained the questionnaire to each participant in language And then after the explanation data was filled up by therapists.

INCLUSION CRITERIA:

2 or >2 year of auto driving experience, Age 20 to 50 Physically fit

EXCLUSION CRITERIA:

All the Auto-drivers who are having visual defect were excluded

All the auto-drivers with a history of chronic musculoskeletal conditions were excluded.

Auto-drivers having cardio-pulmonary dysfunction are excluded.

Result:

Table:1 PREVALENCE OF PAIN IN PAST 12 MONTHS

BODY PARTS	% NO OF SUBJECTS
NECK	66
SHOULDER	37
ELBOWS	21
WRISTS/HANDS	36
UPPER BACK	36
LOWER BACK	60
HIPS/THIGHS	11
KNEES	42
ANKLES/FEETS	19

Graph 1 : Prevalence of pain indifferent body parts amongst the subjects in the past 12 months

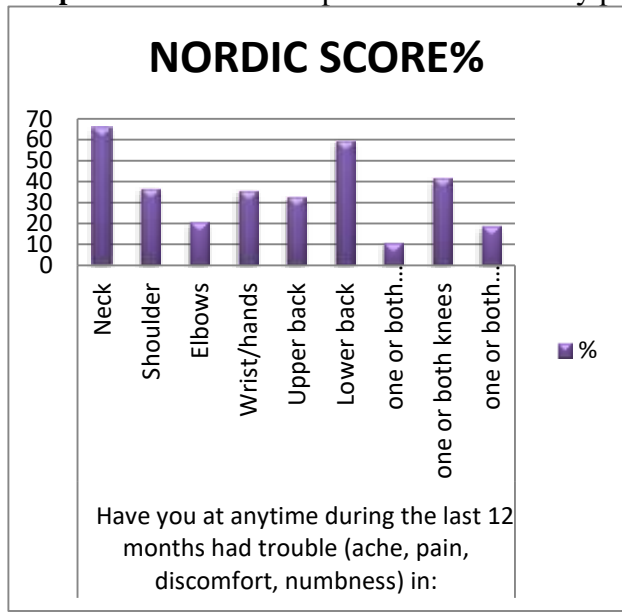


Table:2 PREVALENCE OF PAIN IN PAST 7 DAYS

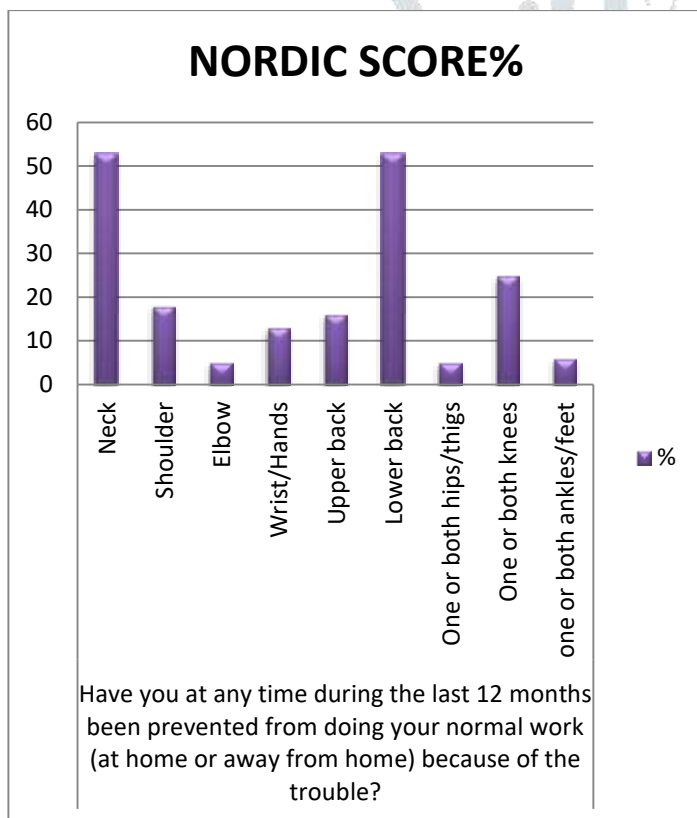
BODY PARTS	% NO OF SUBJECTS
NECK	25
SHOULDER	10
ELBOW	04
WRIST/HANDS	10
UPPER BACK	10
LOWER BACK	39
HIP/THIGHS	06
KNEES	20
ANKLE/FEETS	08



Graph:2 The above graph shows the prevalence of pain in last 7 days

TABLE-3 distribution of pain that prevented from carrying normal activities in past 12 months.

BODY PARTS	% NO OF SUBJECTS
NECK	53
SHOULDER	18
ELBOWS	05
WRISTS/HANDS	13
UPPER BACK	16
LOWER BACK	53
HIPS/THIGHS	05
KNEES	25
ANKLES/FEETS	06



Graph: 3 The above graph shows the prevalence of pain in past 12 months which prevented from doing normal activities.

DISCUSSION:

The purpose of this study was to find out the prevalence of musculoskeletal disorders among auto rickshaw drivers in vadodara city. It was hypothesized that musculoskeletal disorders may or may not be prevalent among auto rickshaw drivers in vadodara city and their may or may not be a significant relationship between musculoskeletal disorders and its risk factor associated with auto rickshaw driving.

Frequency percentage of pain reported in auto-rickshaw drivers during last 12 months were neck (66%), shoulders (37%), elbows (21%), wrist/hands (36%), upper back (36%), lower back (60%), hip/thighs (11%), knees (42%), and ankle/feets (19%).

Frequency percentage of pain reported in auto-rickshaw drivers during last 7 days were neck (25%), shoulders (10%), elbows (04%), wrist/hands (10%), upper back (10%), lower back (39%), hip/thighs (06%), knees (20%), and ankle/feets (08%).

Frequency percentage of pain reported in auto-rickshaw drivers during 12 months which prevented from carrying out normal activities were neck (53%), shoulders (18%), elbows (05%), wrist/hands (13%), upper back (16%), lower back (53%), hip/thighs (05%), knees (25%), and ankle/feets (06%).

Highest frequency of pain percentage reported during past 12 months were neck (66%), during past 7 days was lower back (36%), and during past 12 months which prevented auto-rickshaw drivers from carrying out normal activities was neck (53%), and lower back (53%).

Many studies in there Statistical analysis has proved that years of driving experience was associated with subjects having neck pain and low-back pain. Neck pain and low-back pain are most commonly reported musculoskeletal disorders in the current study.

Rickshaw drivers have to maintain their position for several hours in a day which may cause musculo-skeletal disorders among these drivers. The driver cannot move his leg properly while applying brakes because of small space provided for the driver.^[13]

During a muscle contraction, lactic acid is released by blood. Thus the muscle contraction which last for longer time subsequently reduce the blood flow in the muscle. These cause the substance produced by muscle to be accumulated in the muscle and not flow to the other part of the body. The accumulation of this substance irritates the muscle and cause muscle pain. The severity of the pain on the duration of muscle contraction and the time taken by the muscle to overcome those substance^[21].

A study similar to this was conducted by Jiu-chiuan et al to determine the occupational factors associated with the low back pain in urban taxi drivers with an aim to examine low back pain in taxi drivers and its association with prolonged driving and other occupational factors. 1224 drivers were taken for the study. The result of the study showed that long driving time and several physical and psychosocial factors are associated with high prevalence of low back pain in taxi drivers. Likewise in the present study it was proved that long driving time and several other factors are related with high prevalence of neck and low back pain in auto-rickshaw drivers.

Ispita bhatta charjee conducted a study to prevalence of neck and low back disabilities in auto-rickshaw drivers. The result of the study showed that 68% of the subjects were having mild disability in their neck and 66% had mild disability in their back with the scores of NECK DISABILITY INDEX & OSWESTRY DISABILITY INDEX.

REFERENCES:

- 1.Laura Punnett, David H. Wegman, Work related musculoskeletal disorders: the epidemiologic evidence and the debate, *Journal of Electromyography and kinesiology* 14(2004) 13-23.
- 2.Batawi MA, the work of world health organization in occupational health. *Occup health (auckl)* 1974: 228-236
- 3.CR mehta, M shyam, P singh and RN verma. Ride vibration on tractor farm equipment system. *Applied ergonomics*.2000; 31(3): 323-328
- 4.A toren, K Oberg, B lembke, K enlund and RA Anderson: tractor driving hours and their relation tpself reported low back and hip symptoms. *Applied ergonomics*.2002;33(2)139-146.
- 5.Magnusson, Marianne L DrMedsc, Pope, Malcolm H. DrMedsc. Are occupational driver at an increased risk for developing musculo-skeletal disorder.? *Spine*.1996 21(6):701-707

- 6.Masabumimiyamoto, shunsukekonno, yoshikazugembun. Epidemiological study of low back pain and occupational risk factor among taxi drivers industrial health.2008 46(2): 112-117
- 7.Gregory P. slota, Kevin P. granata, Michael L Madigan. Effects of seated whole-body vibration on seated postural sway clinical biomechanics. 2008; 23(4): 381-386
- 7.Majmudar D, jash T. merits and challenges of E-rickshaw as an alternative form of public road transport system: A case study in the state of west Bengal in india. Vol. 79, energy procedia. Elsevier B.V.; 2015. 307-314 p.
- 9.Dr. swapniljain, Dr. Praveen yuwane, a study of the cardio vascular disease risk factor among auto rickshaw drivers in Gwalior city, MP., international journal of medical health research, vol.4, april 2018, 162-165
- 10.Rahul shaik et al, “the prevlance of musculo-skeletal disorder and their association with risk factors in auto-rickshaw driver- A survey in Guntur city, international journal of physiotherapy, 2014,1(1), 2-9.

