

# Prevalence of Mechanical Neck Pain in Garment Workers in Ahmedabad - An Observational Study

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DOI: <https://doi.org/10.52403/ijhsr.20240623>

## ABSTRACT

**BACKGROUND:** Neck pain is one the major problem for working population, however it is usually neglected from clinical and research perspective. As sewing machine operators are very often utilized for predicting risk factors for neck pain. Therefore, considering the fact that there is alarming rise of incidence of neck pain.

**AIM:** The purpose of this study is to determine the prevalence of mechanical neck pain in garment workers in Ahmedabad.

**METHOD:** An observational study was carried out among 115 garment workers. In which 67 female and 48 male who had willingness to participate in the study according to inclusion and exclusion criteria. Written consent was taken by individuals. Structured face to face interview questionnaires (NECK DISABILITY INDEX-10 ITEMS) were used to collect quantitative data on magnitude of work-related neck pain. Descriptive analysis was done using Microsoft excel.

**RESULT:** Study results showed that 43.47% had mild, 13.91% had moderate, 0.86% had severe mechanical neck pain.

**CONCLUSION:** From this study it is concluded that 58.24 % of the people of age group 20 to 60 years have mild, moderate and severe neck pain.

**KEYWORDS:** Neck pain, garment worker, Ahmedabad

## INTRODUCTION

Neck pain is a common health problem in the general population. Most people experience some degree of neck pain in their lifetime.[1,2] It was also described in the 18th century, along with other work related upper limb disorders by Bernardini Ramazzinian Italian physician and the father of occupational medicine - when he said the diseases : "... arise from three causes; firstly, constant sitting, secondly the perpetual motion of the hand in the same manner, and thirdly the attention and the application of the mind..."[3] Musculoskeletal disorders of the neck and shoulder in office workers are likely influenced by prolonged static working positions,[4] leading to continuous activity

of low-threshold motor units, reduced local blood flow, accumulation of Ca<sup>2+</sup>, and other homeostatic changes in the active muscle fibres.[5,6]

Thus, pain symptoms appear to worsen during prolonged static muscle activity and repetitive job tasks. [7,8] The associated costs are enormous, as white-collar workers with neck/shoulder pain have a 35% increased risk of long-term sickness absence.[9]

Neck pain is the most common musculoskeletal problem in our country, at least in the industrialized world, and it also an important source of disability. Physicians said that, patient who visited him their most common complaint has neck pain [10]. Neck

pain has been associated with poor general health status, psychological distress and previous neck injury, occupational task, obesity [11].

Mechanical neck pain influences 45– 54% of the wide community sooner or later in their lives and can result in extreme disorder.[12] The correct pathology of mechanical neck pain isn't obviously known and proposed to be associated with different anatomic structures including, vertebral column joints, neural tissues, and tendons.[13] Mechanical neck pain is a critical medical issue among understudies because of poor posture style. Sitting for delayed periods with forward head posture, with forward adjusted shoulders causes strain in muscles and increments compressive power in cervical spine results in mechanical neck pain. In numerous cases, neck pain is an outcome of bad posture.so, aim of this study is to find Out Prevalence of Mechanical Neck Pain in Garment Workers in Ahmedabad-An Observational Study

## MATERIALS AND METHOD

**Study design:** An observational study

**Sample selection:** According to inclusion & Exclusion criteria

**Sample design:** purposive sampling.

**Study duration:** 1 time study

**Sample size:** 115 garment workers

**Source:** Data was taken from garment industry in Ahmedabad City

## SELECTION CRITERIA

### INCLUSION CRITERIA:

- Participants who willingly wants to participate.
- Both male and female garment workers
- Age group between 20 - 60 years
- Those garment workers who worked for more than 10 hours and less than 10 hours are selected in a day.
- Also, Duration of garment workers in industries are more than 10 years or less than 10 years of working are selected.

### EXCLUSION CRITERIA:

- All person who are not fulfilling above mentioned criteria were excluded

- Participants are excluded if they have any specific medical condition Disorders. (Cervical Spondylosis, tumours, infection, cervical myelopathy, past cervical surgery, upper extremity deformity etc.)

## STUDY PROCEDURE:

115 garment workers (67 females and 48 males) whose age ranged from 20 to 60 years participated in the study. Participation in the study was voluntary and informed consent was taken prior to participation. They were selected by inclusion and exclusion criteria. Garment Workers were explained about this study and about the questionnaires that were to be filled prior to the participation. The form was self-generated from with the questions regarding their Demographic data, working hours and since how many years of working in factory. Questionnaires, Neck Disability Index was then handed out amongst the workers in the factory and collected after being filled.

## OUTCOME MEASURE

Neck Disability Index (NDI)

NDI questionnaire is designed to provide information of how neck pain affects a person's ability to manage in everyday life. The questionnaire has 10 components and each component has scoring 0 to 5. Thus, total score achievable is 50. Greater score indicates greater disability.

### scores (out of 50)

0-4 No Disability

5-14 Mild Disability

15-24 Moderate Disability

25-34 Sever Dis ability

>35 Complete Disability

Test–retest reliability for NDI is found to be good,  $r=0.89$ . Interclass correlation (ICC)  $=0.68$ , 95% CI=0.54-0.90. Cronbach's alpha is 0.80. Specificity and sensitivity are 59% and 52% respectively.[14]

## RESULT & DISCUSSION

- Statistical analysis was done using the Microsoft excel 2019 and was represented in form of table chart.

**Table 1: Subject distribution according to Gender:**

GENDER	WITH NECK PAIN%
MALE	41.73%
FEMALE	58.26%
TOTAL	99.99%

**Table 2: Pain Intensity Score %**

SCORE	%
No pain	54.8%
Mild pain	25.2%
Moderate pain	14.8%
Fairly severe	2.6%
Very severe	2.6%
Worst	0%

From the above table we can say that:

- 54.8 % People have no pain at the moment.
- 25.2% People have very mild pain at the moment.
- 14.8 % People have moderate pain at the moment
- 2.6 % People have fairly severe pain at the moment.
- 2.6% People have very severe at the moment.

**Table 3: Effects of Neck pain on Personal Care:**

SCORE	%
0	75(65.21%)
1S	30(26.08%)
2	7(6.086%)
3	3(2.60%)
4	1(0.86%)
5	0(0%)

From the above study we can say that:

- 65.21% People can look after themselves without causing extra pain (0)
- 26.08% People can look after themselves normally but it causes extra pain (1)
- 6.08% People have pain to look after themselves and are slow and careful (2)
- 2.60% People need some help but manage most of their personal care (3)
- 0.86% people need help every day in most aspects of self-care. (4)

**Table 4: Effect of Neck Pain on Lifting:**

SCORE	%
0	61(53.04%)
1	40(34.78%)
2	8(6.95%)
3	2(1.73%)
4	3(2.60%)
5	1(0.86%)

From the above study, we can say that:

53.04 % of People can lift heavy weights without extra pain. (0)

34.78% of People can lift heavy weight, but it gives extra pain (1)

In 6.95% People, pain prevents them from lifting heavy weight of the floor but they can manage if they are conveniently positioned. (2)

In 1.73 % People pain prevents them from lifting heavy weights but they can manage light to medium weights if they are conveniently positioned. (3)

2.60 % people can lift very light weight. (4)

- 0.86% people cannot lift or carry anything (5)

**Table 5: Effects of neck pain on Reading:**

SCORE	%
0	63(54.78%)
1	34(29.56%)
2	15(13.04%)
3	2(1.73%)
4	0(0%)
5	1(0.86%)

From the above study, we can say that:

- 54.78% People can read as much as they want to with no pain in their neck (0)
- 29.56% People can read as much as they want to with slight pain in their neck (1)
- 13.04 % People can read as much as they want with moderate pain in their neck (2)
- 1.73% People cannot read as much as they want because of moderate pain in their neck (3)
- 0% People can hardly read at all because of severe pain in their neck (4)
- 0.86% people cannot read at all (5)

**Table 6: Effects of Neck pain on Headaches:**

SCORE	%
0	60(52.17%)
1	30(26.08%)
2	16(13.91%)
3	8(6.95%)
4	1(0.86%)
5	0(0%)

From the above study, we can say that,

- 52.17% people have no headaches at all (0)
- 26.08% People have slight headaches that come infrequently (1)
- 13.91% People have moderate headaches which come frequently (2)

- 6.95% People have severe headaches which come frequently (3)
- 0.86% People have severe headaches which come frequently. (4)

**Table 7: Effects of Neck pain on Concentration:**

SCORE	%
0	71(61.73%)
1	24(20.86%)
2	16(13.91%)
3	3(2.60%)
4	0(0%)
5	1(0.86%)

From the above study, we can say that:

- 61.73% People can concentrate fully when they want to with no difficulty (0)
- 20.86% People can concentrate fully when they want to with slight difficulty (1)
- 13.91% People have a fair degree of difficulty in concentrating when they want to (2)
- 2.60% People have a lot of difficulty in concentrating when they want to (3)
- 0% People have a great deal of difficulty in concentrating when they want to. (4)
- 0.86% people cannot concentrate at all. (5)

**Table 8: Effects of neck pain on Work**

SCORE	%
0	71(61.73%)
1	24(20.86%)
2	16(13.91%)
3	1(0.86%)
4	2(1.73%)
5	1(0.86%)

From the above study, we can say that:

- 61.73% People can do as much as work as they want to (0)
- 20.86% People can do their usual work, but no more (1)
- 13.91% People can do most of their usual work, bit no more (2)
- 0.86% People cannot do their work (3)
- 1.73% People can hardly do any work at all. (4)
- 0.86% People cannot do any work at all. (5)

**Table 9: Effects of Neck pain on Driving:**

SCORE	%
0	65(56.52%)
1	19(16.52%)
2	9(7.82%)
3	6(5.21%)
4	1(0.86%)
5	15(13.04%)

From the above study, we can say that:

- 56.52% People can drive car without neck pain. (0)
- 16.52% People can drive car as long as they want with slight pain in neck. (1)
- 7.82% People can drive car as long as they want with moderate pain in neck. (2)
- 5.21% People cannot drive car as long as they want because of moderate pain in neck. (3)
- 0.86% People can hardly drive car at all because of severe pain in neck. (4)
- 13.04% People cannot drive car at all. (5)

**Table 10: Effects of Neck Pain on Sleeping:**

SCORE	%
0	69(60%)
1	25(21.73%)
2	9(7.82%)
3	8(6.95%)
4	3(2.60%)
5	1(0.86%)

From the above study, we can say that:

- 60% People have no trouble sleeping (0)
- 21.73% People sleep is slightly disturbed (less than 1 hour sleepless). (1)
- 7.82% People sleep is mildly disturbed (1-2 hours sleepless). (2)
- 6.95% People sleep is moderately disturbed (2-3 hours sleepless). (3)
- 2.60% People sleep is greatly disturbed (3-5 hours sleepless). (4)
- 0.86% People sleep is completely disturbed (5-7 hours sleepless). (5)

**Table 11: Effects of Neck Pain on recreation**

SCORE	%
0	71(61.73%)
1	34(29.56%)
2	3(2.60%)
3	4(3.47%)
4	2(1.73%)
5	1(0.86%)

From the above study, we can say that:

- 61.73% People are able to engage in all recreation activities with no neck pain at all (0)

- 29.56% People are able to engage in all their recreation activities with some pain in the neck (1)
- 2.60% People are able to engage in most but not all of their usual recreation activities because of pain in their neck (2)
- 3.47% People able engage in a few of usual recreational activities because of pain in neck. (3)
- 1.73% People can hardly do any recreational activities because of pain in neck. (4)
- 0.86% People cannot do any recreational activities all. (5)

## CONCLUSION

From this study it is concluded that 41.73% have no disability, 43.47% have mild disability, 13.91% have moderate disability, 0.86% have severe disability.

This study also concluded that 58.24 % of the people of age group 20 to 60 years have mild, moderate and severe neck pain.

### Declaration by Authors

**Ethical Approval:** None

**Acknowledgement:** None

**Source of Funding:** None

**Conflict of Interest:** The authors declare no conflict of interest.

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How to cite this article: Avani K Ghediya. Prevalence of mechanical neck pain in garment workers in Ahmedabad - an observational study. *Int J Health Sci Res*. 2024; 14(6):151-155. DOI: <https://doi.org/10.52403/ijhsr.20240623>

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