

# Prevalence of Wrist Pain in Young Tabla Players: Observational Study

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## ABSTRACT

**Background:** The most popularly used percussion instruments in Indian classical music is Tabla. Playing a percussion instrument demands great force & effort, which may make percussionists prone to playing-related musculo skeletal disorders (PRMDs).

**Method:** A Prevalence study using convenience sampling technique was done from the music schools of Pune-Godse & Madhumati Sangeet Vidyalay with 104 subjects. The subjects aged between 11 to 25 yr old Both males & females who plays tabla atleast from 1 yr. Wrist pain was assessed by using Numeric pain rating scale (NPRS) Subjects rated the pain in the scale of 0 No pain to 10 Worst pain at rest and after playing tabla.

**Result:** Prevalence of pain at Rest the average percentage of person experience pain are 28.84% 74 persons out of 104 are not experiencing any pain, the % of no pain is 71.15%. Prevalence of pain after playing tabla. The average % of person experiencing pain after playing is 66.34%. 35 Person out of 104 are not experiencing any pain. The % of no pain after playing tabla is 33.65%.

**Conclusion:** The prevalence of wrist pain is more in tabla players after playing tabla than compared to pain at rest.

**Keywords:** Playing related musculoskeletal disorders (PRMDs), NPRS-Numeric pain rating scale, Percussion instrument, Ergonomics, Musculoskeletal

## INTRODUCTION

Tabla is the most famous membrano phone percussion instrument used in Indian Classical Music. Playing percussion instrument requires coordinated and repetitive striking motion and forces which is a risk factor to development of playing related musculoskeletal pain. The tabla is comprised of two sealed membrano phones with animal skin heads: the smaller wooden shelled Dayan (played with right hand and tuned to higher pitch) and larger, metal shelled Bayan (played with left/non dominant hand). Playing of the tabla requires movement of the entire upper limbs from shoulder to finger tips.<sup>[1]</sup>

Playing a percussion instrument demands great force and effort, which may make percussionists prone to playing-related musculoskeletal disorders (PRMDs) Of all of the percussion instruments in India, tabla is the most popular.<sup>[2]</sup>

Musculoskeletal disorders in musicians include pain, weakness, numbness, tingling, or other symptoms that interfere with their ability to play their instrument at the level they are accustomed to. Many studies find a high prevalence of work-related musculoskeletal disorders in musicians, ranging from 73.4% to 87.7%.<sup>[3]</sup>

The player sit cross - legged on the floor and strikes both the drums with the fingers, occasionally raising the pitch of the

left hand drum by pressing the heel of the hand.<sup>[4]</sup>

Hand is the most important and key body part involved to create sound from any musical instrument, thus upper limb is more exposed to injuries due to over practice or because of performing professionally for many year.<sup>[5]</sup>

The muscle use is defined as repetitive if the action is repeated more than 4 times a minute. This is acknowledged as a conservative general definition from which a risk may be present.<sup>[6]</sup>

There are intrinsic and extrinsic factors for the causation of disorders. Some of the intrinsic factors include age, gender, hypermobility, size. Extrinsic factors mainly include duration of playing, technique of playing and awkward posture.<sup>[7]</sup>

PRMD Consists of non- specific muscle and tendon complaints that are attributed to inflammatory disorders of tendons and tendon sheaths and compression or entrapment of peripheral nerves in several area.<sup>[8]</sup>

## METHOD

Data was collected from Godse And Madhumati Sangeet Vidyalay-Pune was collected. An observational-cross section study was conducted. Numeric pain rating scale was administered as a main outcome measure.

Young tabla players aged between 11 to 25 years were selected both male and female tabla players and those who were willing to participate were included in the study. For the participation in the present study the subjects should meet the following criteria.

- Practicing tabla at least for 1 year
- Plays tabla 2 to 3 times a week
- Playing for minimum 1hr in a day

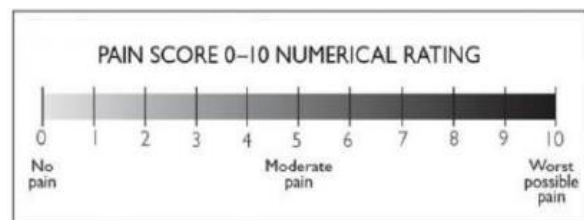
And then should not have any history of recent trauma.

- Any upper limbs Fracture less than 6 months.
- Should not be playing any other instrument than tabla.

Subjects were selected according to the inclusion criteria. Informed consent was taken from subjects after explaining the purpose of study wrist pain was assessed by using numeric pain rating scale (NPRS) Subjects rated the pain in the scale of 0 no pain & 10 worst pain at rest and after playing tabla Overall percentage of wrist pain present in young tabla players was calculated data was statistically analyzed.

## OUTCOME MEASURE

### Numeric Pain rating scale (NPRS).



## Results and statistical analysis

This Study recruited 104 young tabla players of age 11 to 25 years, from Madhumati and Godse sangeet vidyalay.

Table -1

Variable	Mean	SD
Age years	16.173	3.756
No. of years of experience	4.101	2.218
Duration of Playing Tabla Per day(hr)	1.7452	0.7036
Duration of Playing Tabla in a week (Days)	4.019	1.448
<b>Gender: Male 98.38%, Female 9.62%</b>		

## Prevalence of pain

Table -2 Pain in scale 0 to 10 at rest (By NPRS)

Pain at rest	Count	Percent
0	74	71.15
1	26	25
2	4	3.85
<b>N=</b>	<b>104</b>	

30 persons out of 104 are experiencing the pain during rest at two levels (1 and 2) hence the prevalence of pain in above described population is from 20.38% to 38.55%.

The average percentage of person experiencing pain are 28.84% 74 persons out of 104 are not experiencing any pain, the percentage of no pain is 71.15%

Table -3 Pain in scale 0 to 10 after playing tabla (By NPRS)

Pain after playing tabla	Count	Percent (%)
0	35	33.65
1	21	20.19
2	26	25
3	13	12.5
4	3	2.88
5	4	3.85
6	1	0.96
9	1	0.96
<b>N=</b>	<b>104</b>	

69 persons out of 104 are experiencing pain after playing tabla at various level hence the prevalence of pain in above defined population is 56.41% to 75.31%.

The average percentage of person experience pain after playing is 66.34%. 35

persons out of 104 are not experiencing any pain; the percentage is of no pain after playing tabla is 33.65%

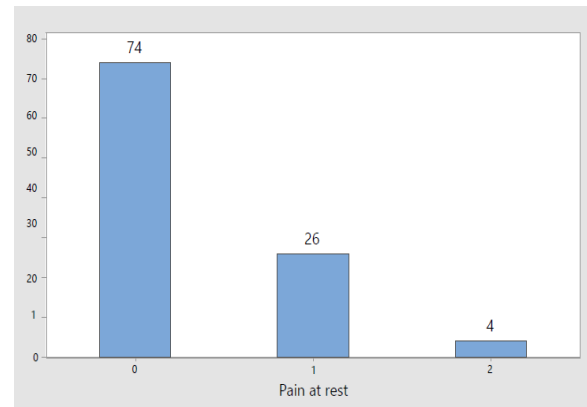


Fig 1. Pain at Rest

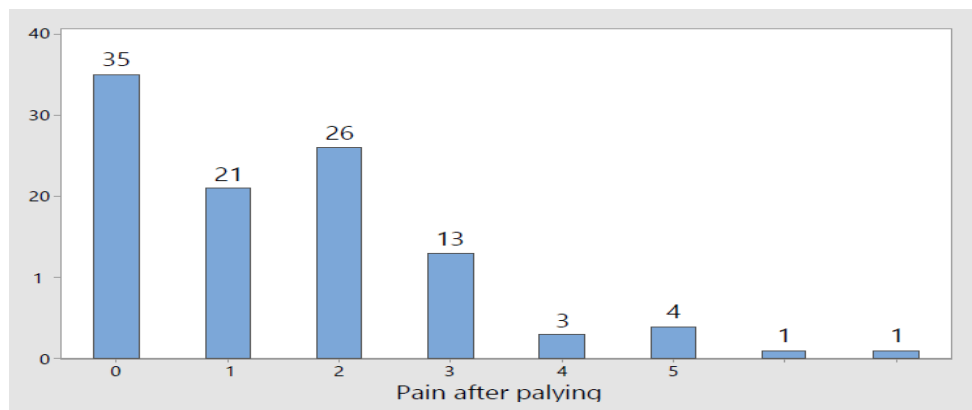


Fig 2. Pain after Playing

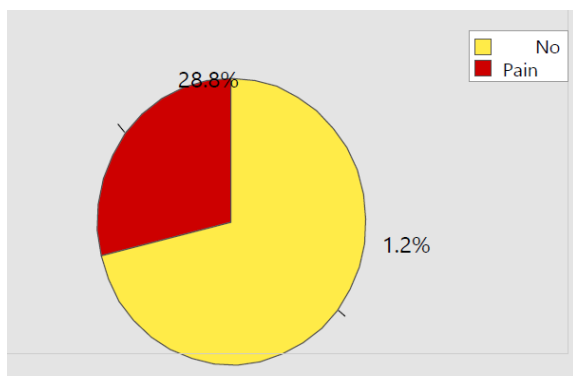


Fig 3. Pain at rest

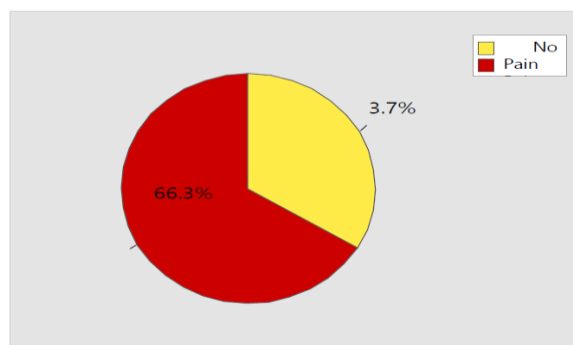


Fig 4. pain after playing tabla

## DISCUSSION

The Study aimed to find the prevalence of wrist pain in young tabla players. The result of the present study showed that prevalence of wrist pain at rest in tabla players is around 20.38% to 38.55% and the average percentage of person experiencing pain are 28.84% while 74 players are not experiencing all pain.

On the other hand, the prevalence of pain after playing tabla in tabla players is 56.41% to 75.31% and the average percentage of person experience pain after playing is 66.34% while 35 persons out of 104 are not experiencing any pain. Similarly Anagham Chandra, Amitabh De, Wrichamishra conducted a study on 85 male tabla players. They were given NMQ and VAS. The study revealed that tabla players are suffering from similar PRMD's reported by other percussionists like overuse

syndrome, carpal tunnel syndrome etc after playing tabla.

Teresia, Christina, Marie, Yvonne, conducted a study on orchestra musicians regarding their work postures and neck shoulder pain. The study revealed that musicians working in an elevated arm position had a high prevalence of neck shoulder pain than those working in more neutral position. Thus, the posture of the player while playing any instrument plays a very important role.<sup>[9]</sup>

The high risk of musculoskeletal disorder in tabla players may be related to a repetitive movement, altered posture leading to muscle fatigue, pain, swelling, etc. The studies have proven that beginner tabla players will tend to focus their movements on hands and wrists. However, as one gains more experience as a tabla player and starts to increase their speed and volume, they will typically start using more of their shoulders and eventually their back to generate force and power. Thus, as the tabla player with more years of experience showed more risk of musculoskeletal disorders.<sup>[10]</sup>

Zaza & farewell et al suggested recommendations on practice habits for musicians which were musical “neuro-muscular’ warm-up; stretches can be used as a cool-down, but need to be appropriately performed; inclusion of 10-minutes during practice sessions; pacing: gradual increase of practice before concerts, recitals, competitions; variety of content of the practice session: styles of music, types of exercises; cognitive rehearsal; away from the instrument.<sup>[3]</sup>

Modifications to the playing environment such as proper seating and lighting can dramatically reduce playing related musculoskeletal disorders. Back support, seat depth should be adjusted to maintain neutral posture<sup>[11]</sup>

Warming up before and taking breaks during practice sessions protected the players/musicians from PRMD<sup>[12]</sup>

In this study the intensity of wrist pain is measure by using NPRS. The pain is mainly caused because of repeated

movements at wrist joint, continuous striking pose, radial and ulnar deviations at wrist joint which increases the work load at wrist joint leading to pain. It was found in the study that the wrist pain is more after playing tabla than compared to pain at rest.

## CONCLUSION

The prevalence of wrist pain is more in tabla players after playing tabla than compared to pain at rest.

Also, the duration of playing tabla per week and hour of playing tabla per day increases the risk of PRMSD as it leads to overuse of muscles leading to fatigue and pain

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**Ethical Approval:** Approved

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