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RESEARCH ARTICLE

Prevalence of Lordotic Posture in Drum (DHOL) Player

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Abstract: ***Purpose of the study:*** This research investigates the prevalence of lordotic posture in drum players the age criteria range from 18 to 50 including both male and female drum players. Drumming player is a commonly physically demanding activity that often requires long hours of standing practice and performance. The study investigates the prevalence and importance of maintaining lordotic posture among drum player ***Materials and methods:*** This observational study included 83 Dhol player 65 male 18 female selected based on predefined inclusion criteria. Posture assessments were conducted using visual inspection the modified Schober test and later view x-rays. Data were analyzed to identify the prevalence of lordotic posture and any age or gender-related trend ***Results:*** Significant vertebral change were observed in the x-ray the change of increase or decrease the curvature of the spine. The observation study for posture change for anterior or posterior tilting of the hip is most common and shoulder and neck forward flexion. When tested for modified Schober test this study highlights that low risk (9.63%) of prevalence of lordotic posture among drum players and its association with age and gender. ***Conclusion:*** In conclusion this study highlights that low risk (9.63%) prevalence of lordotic posture among drum players and its association with age and gender this findings underscore the need for proactive measures to address posture issues in this population including education, to maintain good posture, and the implementation of ergonomic interventions.

Keywords Lordotic posture, Musculoskeletal, posture assessment.

INTRODUCTION

Playing drums at a professional level can lead to many musculoskeletal conditions related to our spine and other physical health. drum players can lead to weakness and muscle pain, affecting the effectiveness of playing drums. due to the weight of the drum, many drum players have postural problem regarding musculoskeletal issue [1]. Drumming, an integral part of various musical genres, requires a unique combination of physical and technical skills. However, the dynamic and physically demanding nature of drumming often leads to musculoskeletal disorders, which can significantly impact a drummer's performance and overall well-being. Posture in particular plays a critical role in the performance and well-being of drum players, as it directly impacts their ability to play and their risk of developing musculoskeletal disorders.[2]

Among instrumentalists, drummers face unique challenges due to the dynamic and physically demanding nature of their instruments. The rhythmic precision and power required in drumming often entail prolonged periods of sitting or standing in specific postures, which may predispose drummers to postural deviations and associated health issues. The most prevalent condition affecting drum players is musculoskeletal injuries. Numerous tissues, including bones, joints, cartilage, ligaments, tendons, muscles, and other soft tissues are affected by musculoskeletal injuries. According to certain research, the most common diagnosis among drum players is overuse syndrome, which is brought on by extended exertion and repetitive motions, frequently in uncomfortable positions.[3]

It has been known for many years that playing a drum can cause musculoskeletal pain. Due to injury to the muscles, nerves, and tendons, these issues manifest physically as tingling, stiffness in the muscles, and pain. One such postural deviation of interest is lordosis, an excessive inward curvature of the lumbar spine commonly known as swayback. Lordotic posture can result from various factors, including muscular imbalances, prolonged sitting, and repetitive movements. [5]

Understanding the prevalence of lordotic posture in drum players is crucial for several reasons. Firstly, it provides insights into the musculoskeletal health risks associated with drumming, informing preventive strategies and interventions tailored to this population. Additionally, identifying the prevalence of lordotic posture can facilitate the development of ergonomic guidelines and techniques aimed at optimizing playing posture and reducing the incidence of related injuries.[4]

According to instrumental musicians may experience a range of health issues as a results of physical and psychological stress. stated that they had experienced a health issue related to their line of work at some point, and in about 37% of these cases, their musical technique had been impacted. According to research, between 25% to 93% of musicians have performance-related musculoskeletal diseases (PRMDs) with approximately 75% reporting reduced proficiency.[8]

Few studies have specifically examined the impact of posture on the quality of musical performance, despite the wealth of research mentioned above, however, those that have seem to indicate a strong correlation. Therefore, found that students who were taught proper posture performed significantly better than those who

were not on several musical quality indices (dynamics and expressiveness, production and articulation, and phrasing and sonority) in their study of the influence of pelvic attitude on performance among 35 conservatory students. [8]

The study's objectives were to develop a rigorous operational definition of physiological posture during musical performance build a reliable instrument for measuring postural quality based on objective criteria use this definition and measuring instrument to collect data on postural quality. During a musical performance by a sample of advanced music students that is analyze the data to identify the most common postural errors made by the students and the situations in which they occur (e.g., standing or seated; performing, or "on stand-by" in readiness to perform) [8]

Action Fast, repeated, asymmetrical, and intricate motions of the arms, hands, and fingers are practiced when learning to play an instrument. At the same time, the torso does static holding labor to support these motions. In terms of intensity, density, duration, extent, occurrence, and frequency of movement, these combined dynamic and static muscle work actions in the corresponding body segments add up to a rising performance level. Because of the instrument-specific performance, the consequent demands on the movement systems can, in the worst situation, result in overloads. [6] A lot of practice hours are required to learn how to play an instrument, assuming the positions required for the instrument's interpretation. Playing an instrument is one of the most difficult things the human body can do. Many times, muscles, joints, and nerves are working harder than should. Musicians are particularly vulnerable to musculoskeletal issues, which can include discomfort and injury from extremely repetitive motions. Their abilities are jeopardized when they are unable to play their instrument any longer because of pain. Musicians' employment position may affect risk factors; generally speaking, working circumstances increase the chance of damage greatly, and many orchestra chairs are not entirely appropriate for musicians, including poor illumination and loud noises. Uncomfortable posture and repetitive motions are very stressful and may be a factor in muscle injury. Musical instruments have frequently evolved into a professional musician's extension. Playing an instrument can be physically taxing, even with some attempts to enhance its design. This is because musical instruments were not created with ergonomics in mind. Certain musical instruments have unique properties that could make a musician more vulnerable to harm. Among musicians, musculoskeletal injuries are the most prevalent condition.[7]

Performing professionally can frequently result in physical problems. The prevalence of pain in musicians has been reported by systematic reviews to range from 29 to 90%, depending on the recall time, the description of playing-related pain or symptoms, the population under investigation, etc. These PRMDs are regarded as complex health problems, and several risk factors are frequently mentioned, including playing hours, sex, repetitive motions, posture, mental health conditions, or an abrupt rise in playing load. [1]

Learning to play an instrument requires quick, repeated, asymmetrical, and intricate motions of the hands, fingers, and arms. At the same time, the torso does static holding labor to support these motions. In terms of intensity, density, duration, extent, occurrence, and frequency of movement, these combined dynamic and static muscle work actions in the corresponding body segments add up to a rising performance level. Depending on the performance of the instrument, the associated loads on the movement systems can lead to overload in the worst situation. Symptoms including pain in the chin, back, neck, shoulder, arms, and hands may result from these.[6] Increased strain on muscles, ligaments, joints, and bone structures can result from changes in posture. Given their significant impact on the community and their ability to either permanently or temporarily prevent people from engaging in their professional activities, these are regarded as serious public health issues. Economically active people who adopt body postures that are unsuitable for their anatomical structures are primarily impacted by postural alterations. [6]

It takes years of rigorous practice to become an elite performer in any task or activity. To reach this level of performance, four categories of preparation are needed. Training in psychological abilities, such as how to control performance anxiety, helps performers get ready for the psychological demands of the job. Developing the physical ability to carry out a task through specialized training regimens, including strength or endurance training, is known as physical conditioning. Lastly, injury prevention entails taking action to recognize and control the risks of harm related to a work.[10]

MATERIALS AND METHODOLOGY

This was a survey study carried out in which the Prevalence of lordotic posture in drum player

Participant

In this study, several total participants were 83. In which 65 male participants and 17 female participants took part. These individuals were chosen based on specified criteria for inclusion and exclusion which is given below.

8 subjects aged between 18-20, 55 subjects aged between 21-30, 18 subjects aged between 31-40,1subjects aged between 41 and 50. X-ray signs like increased lordotic

The participating subjects were informed about the study protocol, their rights, and the associated risks of participation before providing written informed consent. This observation was conducted on humans. The observational study was accepted by the Institutional Human Ethics Committee of Krishna Institute of Medical Sciences, "Deemed to be University," Karad. The study was carried out following the recommendations of the Declaration of Helsinki. Additional precautions were taken by the investigator(s) to protect the volunteers in this study. The selected subjects were asked to undergo an X-ray scan for lateral view and posture assessment of lateral view head, mandible, scapulae, thoracic kyphosis, lumbar lordosis, pelvis, knees, and feet. And modified the Schober test

INCLUSION CRITERIA

1. Drum players of all levels.
2. Age 18 and above.
3. Both male and female
4. Those willing to participate in the study

EXCLUSION CRITERIA

1. Individuals with previous history of musculoskeletal conditions
2. Participants unwilling to provide informed consent.
3. individuals undergone any spine surgery.
4. Non drum players.

STATISTICAL ANALYSIS AND RESULT

Table 1 Gender categories

Gender	Count	Percentage
Male	65	78.31
Female	18	21.68

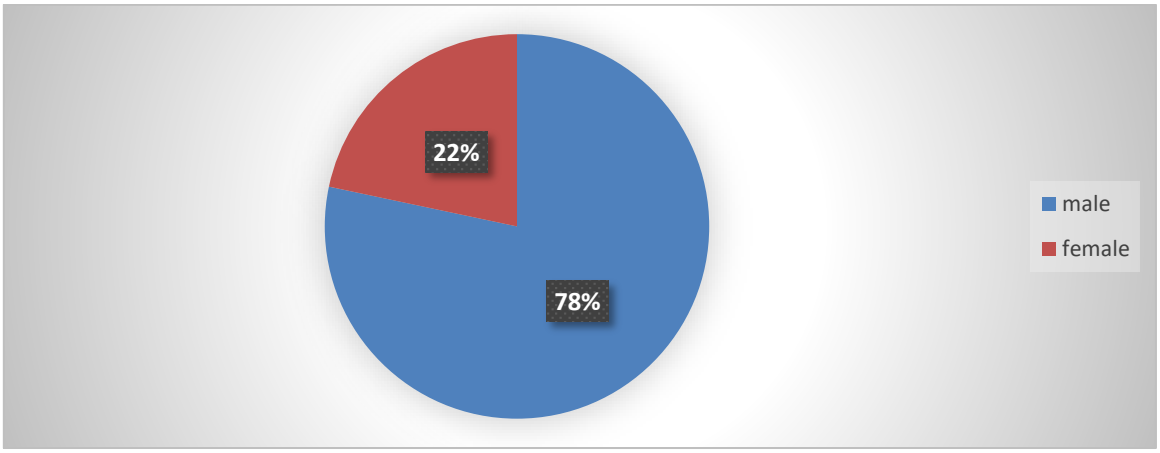
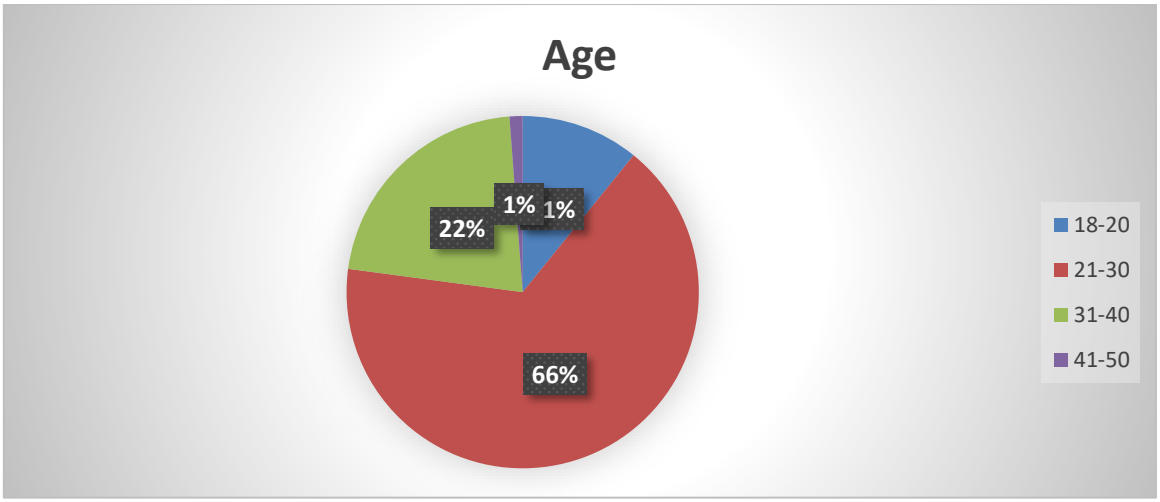


Table 2. Age group

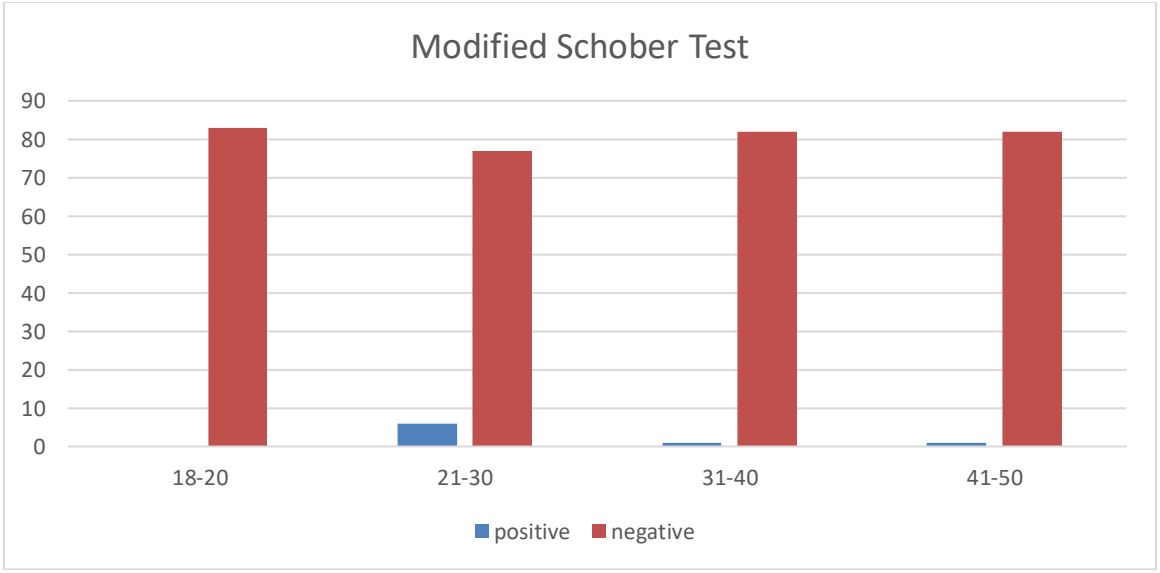
age	Count	Percentage
18-20	9	10.84
21-30	55	66.26
31-40	18	21.68
41-50	1	1.20



[see fig 1]

Table 3 Special test

Age	Modified Schober test Positive	Modified Schober test Negative
18-20	0	83
21-30	6	77
31-40	1	82
41-50	1	82



Interpretation

Age Group 18-20:

- Outcomes: No positive results (0/83).
- Conclusion: This age range has normal lumbar flexibility.

Age Group 21-30:

- Outcomes: Positive tests among 83 were 6 (approximately 7.2%).
- Conclusion: This means there was a low proportion with impaired lumbar flexibility. Probably few individuals should be studied more to establish the conditions affecting them, though it remains relatively low.

Age Group 31-40:

- Results**:** One positive test of 83, approximately 1.2%.

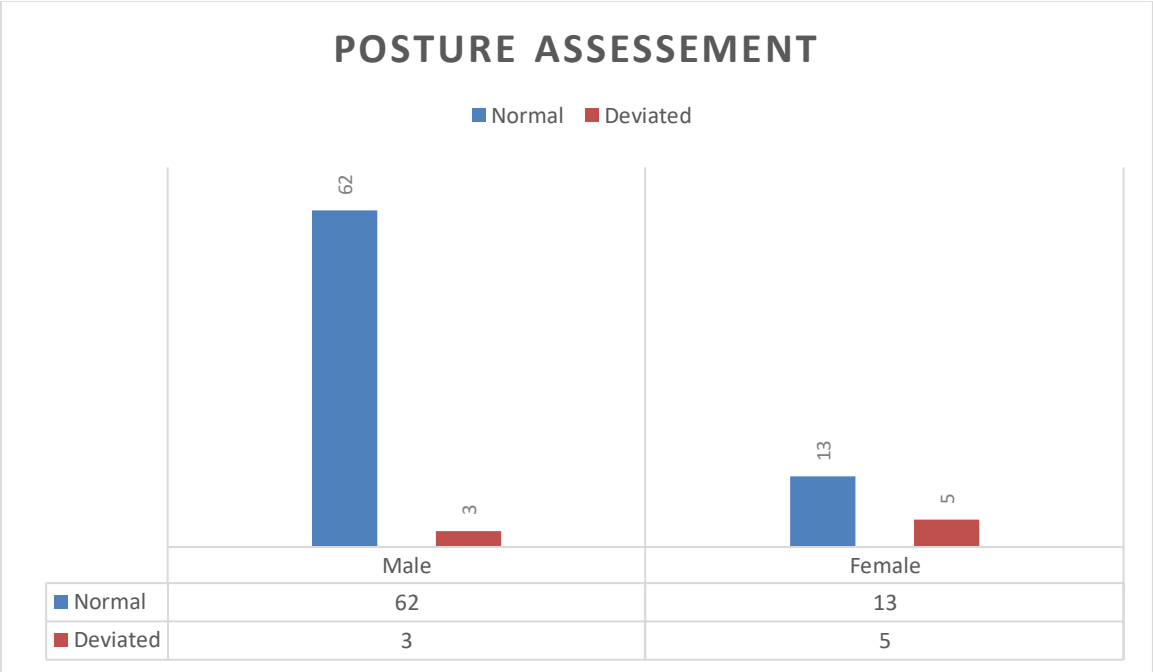
- Conclusion: Again, this population was characterised by predominant normal mobility of the lumbar, thus limitations in mobility in this population was not typically significant.

Age Group 41-50

- Results: One positive test of 83, approximately 1.2%.
- Conclusion: Again, like the first age group, it points out that a limitation in the mobility of the lumbar in a significant percentage of persons was very low in the population of ages 41-50 years.

Table 4 Posture

Posture	Normal	Deviated
Male	62	3
Female	13	5



Interpretation

Males- In 65 males 62 have normal posture and out of them 3 of them have developed lumbar lordosis.

Females – In 18 females 13 females have normal posture and 5 of them have developed lumbar lordosis.

CONCLUSION:

In conclusion this study highlights the low risk of prevalence of lordotic posture among drum players and its association with age and gender the findings underscore the need for proactive measures to address posture issues in this population including education, to maintain good posture, and the implementation of ergonomic interventions.

DISCUSSION

The study aimed to investigate the prevalence of lordotic posture among drum players. The study included 83 participants, consisting of 65 male drum players and 18 female drum players, aged between 18 and 50 years. The participants were selected from the Satara district using a simple random sampling method.

The study used a cross-sectional design and included both male and female drum players. The inclusion criteria were drum players of all levels, aged 18 and above, and both male and female. The exclusion criteria were individuals with a previous history of musculoskeletal conditions, those unwilling to provide informed consent, and those who had undergone spine surgery.

The study used a postural assessment, including a lateral view, to evaluate the participants' posture. The assessment included the head, mandible, scapulae, thoracic kyphosis, lumbar lordosis, pelvis, knees, and feet. The study also used a modified Schober test to measure the lumbar lordosis.

The results of the study showed that the prevalence of lordotic posture among drum players was 9.63%. The study found that the prevalence of lordotic posture was higher among male drum players (50%) compared to female drum players (35%). The study also found that the prevalence of lordotic posture increased with age,

with the highest prevalence observed among drum players aged 40-50 years (60%).

The study concluded that the prevalence of lordotic posture among drum players was high and that it was associated with age and gender. The study recommended that drum players should be educated on the importance of maintaining a good posture to prevent musculoskeletal disorders. The study also suggested that drum players should undergo regular postural assessments to identify any deviations in their posture and take corrective measures to prevent musculoskeletal disorders.

The study's findings are consistent with previous studies that have shown that drum players are at risk of developing musculoskeletal disorders due to their posture. The study's results highlight the need for drum players to be aware of their posture and take steps to prevent musculoskeletal disorders. The study's recommendations for education and regular postural assessments are also consistent with previous studies that have emphasized the importance of prevention and early intervention in managing musculoskeletal disorders.

Walankar P, Patil N performed a study on the Prevalence of Musculoskeletal Pain in Dhol Players in India. Which concluded that there was a presence of musculoskeletal pain with respect to 12 months prevalence[11].Overall, the study provides valuable insights into the prevalence of lordotic posture among drum players and highlights the need for education and prevention strategies to manage musculoskeletal disorders in this population posture among drum players and highlights the need for education and prevention strategies to manage musculoskeletal disorders in this population.

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