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Awareness Of Use Of Ideal Pillow In Neck Dysfunction

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Abstract
Background- Neck dysfunction is increasingly prevalent, often linked to poor sleep posture and inappropriate pillow use. The cervical spine's alignment during sleep is crucial in preventing musculoskeletal issues, and pillow characteristics like height, material, and firmness directly influence cervical alignment. Despite the importance of sleep ergonomics, public awareness regarding ideal pillow use remains limited Objective- to determine the awareness of use of ideal pillow in neck dysfunction. To investigate and analyse problems faced by the individuals by using improper pillows in correlation with neck pain. Methodology- A survey-based A study based on observation was carried out among 95 participants aged 20–40 years at Krishna College of Physiotherapy, Karad. A validated questionnaire was used to assess pillow use habits, neck pain symptoms, sleep positions, and general awareness Participants were chosen using basic random sampling. and Data were gathered using Google Forms. The following descriptive statistics were applied to data analysis Result- The study found that a significant portion of participants used improperly sized or shaped pillows, with over 60% reporting neck pain. However, nearly 81% people are unaware of what is ideal pillow in neck dysfunction. A majority showed willingness to invest in ergonomically appropriate pillows if it could improve their symptoms. Neck discomfort was especially prevalent among students and professionals due to prolonged poor posture during work. Conclusion- There is a substantial lack of awareness regarding the impact of pillow ergonomics on neck health. Educating individuals on ideal pillow use based on height, material, and sleeping position can serve as a straightforward but successful remedy for preventing or managing neck dysfunction. Integration of pillow education in physiotherapy practice is recommended. This emphasizes the need for physiotherapists and healthcare providers to include sleep ergonomics as part of patient education.

Keywords *Neck pain, cervical alignment, pillow ergonomics, sleep posture, awareness, physiotherapy, musculoskeletal dysfunction, ideal pillow*

INTRODUCTION

Pain in the neck affects between 35% and 80% of individuals at some point in their lives, often occurring more than once. Many people also experience related symptoms, including discomfort or stiffness in the neck, chest, or spine, as well as headaches. A potential cause of these issues may be the improper support provided by pillows, which can fail to maintain proper alignment of the neck and head during sleep or movement [1]. Sleep has a significant role in daily life, occupying nearly one-third of a person's lifespan. Adequate, high-quality sleep is vital for sustaining normal physical and mental functions. It supports essential cognitive processes such as memory, judgment, and decision-making, which are essential for everyday activities and work. During sleep, the pillow serves an important function by helping to maintain the natural physiological curve of the cervical spine and providing proper support for the head [2]. Sleep disturbances are frequently associated with factors such as stress, an uncomfortable sleeping surface, and musculoskeletal discomfort. Among these, neck and back pain is commonly reported issues that negatively impact the standard of sleep[9].

The occurrence of neck pain is on the rise, and its associated socioeconomic burden is also escalating. Multiple contributing factors have been recognized, such as prolonged sedentary behavior, increased use of personal computers and internet-based activities, greater dependence on motor vehicles, and evolving patterns in occupational tasks [7]. A significant number of individuals either sleep without a pillow or use multiple pillows (ranging from one to three), which might lead to the rising prevalence of both short-term and long-term neck pain. This discomfort is frequently linked to poor sleep quality and may hinder the body's natural recovery processes [6]. While many studies acknowledge the considerable effect of the sleep surface on sleep quality, there is ongoing debate about the most effective surface design for alleviating neck and back pain [9]. Improper cervical alignment during sleep can elevate biomechanical stress on the cervical spine, potentially leading to neck pain, stiffness, headaches, and radiating arm pain, each of which contribute to reduced sleep quality [2]. Neck pain has been strongly associated with spinal alignment, and research suggests that insufficient or improper pillow support for the neck and shoulders during sleep

may contribute to neck pain by disrupting the natural alignment of the cervical spine [3]. Muscular dysfunction occurs due to structural and functional alterations in the cervical spine [7].

It is widely recognized that using a pillow that provides proper support to maintain the natural cervical lordosis during sleep can enhance sleep quality. Conversely, using an unsuitable pillow may strain pain-sensitive areas, causing symptoms such as neck pain, stiffness, headaches, and arm discomfort upon waking, which can negatively impact overall sleep quality [1]. An ideal pillow should maintain the natural cervical lordosis, help prevent morning neck symptoms, and enhance sleep quality by promoting an optimal sleeping posture [1]. When a pillow is too high, it causes the head and neck to bend excessively forward, resulting in strain on the muscles and ligaments of the cervical spine. Conversely, if the pillow is too low, the head and neck region is forced into excessive backward extension, increasing cervical lordosis and causing the muscles and ligaments at the front of the spine to become overly tight [2]. Choosing an inappropriate mattress or pillow can negatively affect an individual's health and also lead to economic consequences [9]. The cervical spine in the neck is designed to have a 'C'-shaped curve of about 20 to 40 degrees, which helps support the head in a neutral alignment [8]. A proper pillow helps preserve the natural physiological curve of the spine, allowing the body to remain in a natural and healthy position [2]. Another important feature of an ideal pillow is its ability to reduce temperature and core body heat during sleep, as a cooler pillow can help reduce sympathetic nervous system activity, which is essential for achieving deep sleep. Besides providing proper neck support and temperature regulation, pillow comfort is also a key factor in determining its suitability [1]. When sleeping on your back, your pillow should support the natural 'C'-shaped curve of your neck, while sleeping on your side requires the pillow to maintain your head in line with your body. Using an inappropriate pillow can lead to poor neck alignment, which increases pressure on the spinal discs and vertebrae, often resulting in muscle spasm [8]. A neck pillow that offers firm support and helps maintain a low temperature may alleviate neck pain and enhance sleep quality [1]. To maintain a healthy natural curve, you should use a pillow that comfortably supports this shape, whether you sleep on your back or your side [8]. Various types of pillows are available to suit different sleeping habits, including general cervical pillows, contour pillows, and latex pillows. Among the most important factors to consider is the pillow's height [3]. For individuals aged 20 to 40, the optimal pillow height for comfort and promoting good sleep is recommended to be approximately 5.0 ± 1.0 cm when lying on the back (supine) and about 6.8 ± 0.9 cm when sleeping on the side (lateral) [2]. Cervical pillows are believed to promote disc rehydration by maintaining the natural cervical lordosis and decreasing the pressure on the intervertebral discs. Consequently, cervical pillows and proper neck support may be crucial in managing cervical spine disorders [5]. Application of a water-based pillow has been associated with decreased morning pain severity, greater pain relief, and enhanced sleep quality [4]. The review concluded that latex pillow materials, contoured designs, a height of 7–10 cm, and cooling surfaces have a moderate level of evidence supporting their effectiveness in enhancing sleep quality and properly aligning the spine [3]. a neck pillow with a firm support and low temperature may reduce neck pain and improve sleep quality. Therefore, a cool and not too hard pillow with enough support for cervical lordosis is considered optimal and is recommended for high quality sleep and cervical pain relief [1].

METHOD

This study employed a survey-based observational design to evaluate the level of awareness regarding the application of an ideal pillow in individuals experiencing neck dysfunction .The research was conducted at Krishna College of Physiotherapy, Karad, over a duration of three months. Participants were selected using a simple random sampling method to ensure unbiased representation. An overall of 95 participants were included, calculated based on conventional sample size calculation formulas considering statistical power and expected variation in responses. Participants aged between 20 to 40 years, both male and female, who reported acute or chronic neck pain, were considered eligible. Questionnaire provided for data gathering and statistical analysis and to get conclusion.

Inclusion criteria :

Subjects between 20-40 years of age

Both females and males

Subjects those have neck pain (acute or chronic)

Exclusion criteria:

Subjects with recent spine fractures.

Subjects unwilling to provide informed consent

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Subjects undergone recent spine surgery

ETHICAL COMMITTEE APPROVAL

The approval for this study is gained from the institutional ethical review committee of Krishna Vishwa Vidyapeeth (deemed to be university), Karad. Respondents were given a detailed explanation about Questionnaire as well the study which is to be conducted and informed consent was obtained from each and every participant participating in this study. There was a volunteer involvement of all the participants in this study whose confidentiality was thoroughly maintained.

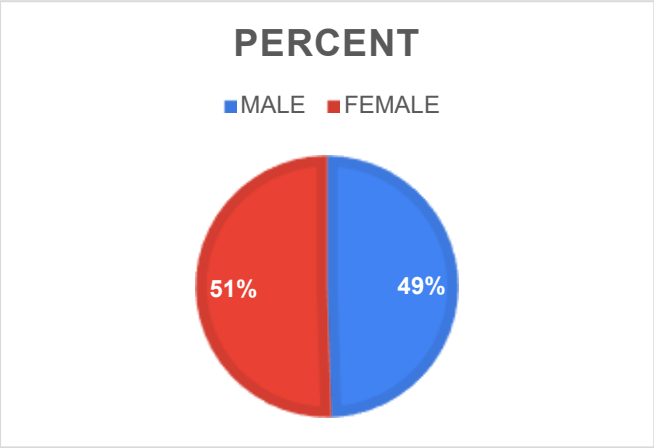
RESULT:

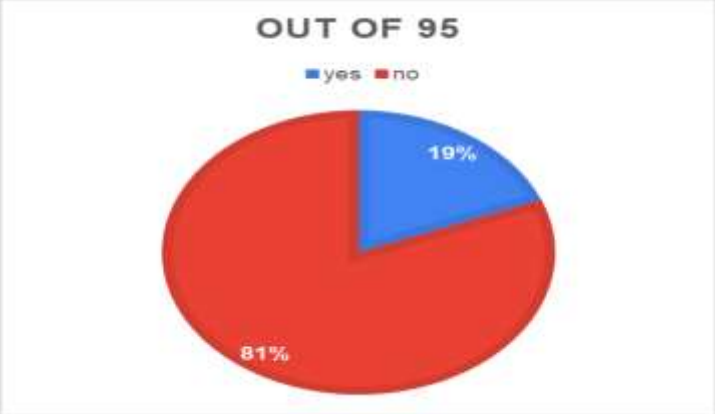
Statistical Analysis

Gender:

do know that what is 'ideal pillow' in neck dysfunction?	out of 95
yes	18
no	77

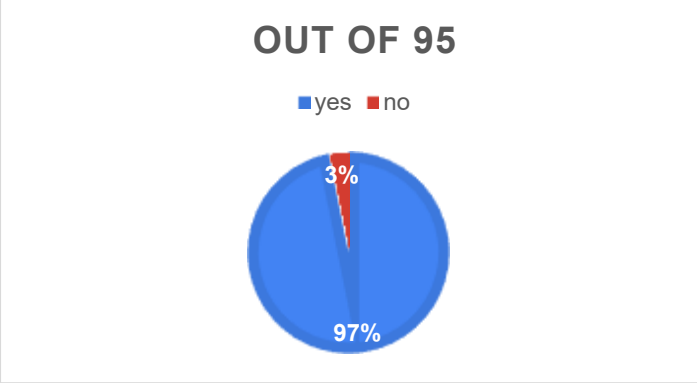
Gender	Out of 95
Male	47
Female	48



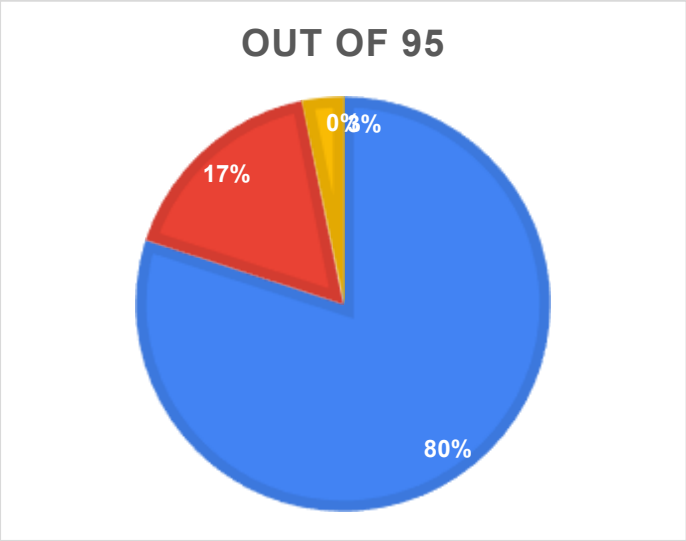


are you willing to interest in ideal pillow if it can improve your health ?	out of 95
yes	92
no	3

Interpretation- out of 95 people only 18% people are aware of ideal pillow, most of people are unaware of ideal pillow in neck dysfunction



Interpretation- most of people are willing to show interest in ideal pillow, 97% of people show interest in investing ideal pillow



Interpretation- Most participants (80%) considered comfort as the main feature of an ideal pillow, while only 17% focused on hypoallergic material, and very few valued adjustability or neck spine alignment This shows that comfort is prioritized over proper support, indicating a lack of awareness about ergonomic factors essential for preventing neck dysfunction

DISCUSSION:

This study sought to evaluate the awareness of the use of an ideal pillow in preventing or alleviating neck dysfunction. The findings offer valuable insights into the connection between pillow use and cervical spine health.

1. Pillow Usage Trends and Awareness

The data gathered from 90 participants aged between 20 to 40 demonstrated that a revealed that a large percentage of individuals (especially students and working professionals) are not fully aware of how pillow characteristics affect neck health. A majority used pillows without considering essential features like height, shape, firmness, and material. Many participants admitted to using multiple pillows or overly soft or hard pillows for comfort without knowing the health consequences. Notably, even though around 60% of respondents reported neck pain, only approximately 50% were aware that pillow type and height could directly impact cervical spine alignment. This mismatch between experience and awareness emphasizes a significant knowledge gap that must be addressed.

2. Influence of Pillow Characteristics

The study supported literature suggesting that improper pillow design leads to misalignment of the cervical spine. Specifically Incorrect height (too high or too low) can cause the neck to be positioned in flexion or hyperextension during sleep, leading to strain on cervical ligaments, muscles, and discs. Inappropriate material (non-supportive foam, over-soft stuffing, etc.) fails to maintain cervical lordosis, contributing to muscular fatigue and joint stress. Sleeping position also plays a role: back and side sleepers benefit from pillows with different dimensions to maintain spinal alignment. This aligns with biomechanical studies that have demonstrated that a pillow of approximately 5 ±1 cm for supine sleepers and 6.8 ± 0.9 cm for side sleepers provides better cervical alignment and reduces stress on neck structures.

3. Neck Pain and Sleep Quality

Participants who experienced neck pain reported disturbed sleep and difficulty maintaining comfortable sleeping postures. This is consistent with clinical research suggesting that chronic neck pain disrupts sleep cycles, reduces REM sleep, and impairs daily functioning. More than 60% of the participants in your study linked their neck pain with current pillow use indicating that simple lifestyle modifications—like pillow change—could improve sleep quality and reduce morning stiffness or discomfort.

4. Participant Willingness for Change

A promising outcome of the study is that most individuals showed a willingness to invest in ideal pillows if they were educated on its benefits. This suggests that awareness and access are key factors. If individuals are informed about proper pillow selection based on sleep posture, body type, and health conditions, compliance is likely to be high.

Moreover, participants expressed interest in learning about features like:

Neck-spine alignment support
Hypoallergenic material
Adjustable pillow height
Breathable and cooling designs
These preferences reflect an increasing public inclination toward ergonomic and health-supportive sleep accessories.
5. Correlation with Occupation and Age
From your demographic analysis:
Students and professionals (like engineers and office workers) showed higher rates of neck discomfort—likely due to prolonged computer use and poor posture, which exacerbates cervical stress during sleep.
Women, especially homemakers and jobholders, also reported neck pain, possibly due to multitasking and physical strain.
Participants between 20–30 years had a higher prevalence of poor pillow choices, indicating a need for early preventive education.
6. Educational Implications
The lack of awareness among even educated groups (college students, professionals) points to a gap in ergonomic and preventive health education. This is particularly relevant in physiotherapy and rehabilitation practice, where home modifications and lifestyle adjustments are integral parts of recovery.
Integrating pillow ergonomics education into:
Physiotherapy consultations
Workplace wellness programs
Community health camps
could potentially reduce the burden of neck pain and improve sleep quality at the population level.
7. Consistency with Literature
Your findings align with published studies that highlight:
Cervical pillow use improves neck alignment, sleep quality, and reduces musculoskeletal pain.
Water-based or latex pillows with firm, cooling surfaces have shown efficacy in pain reduction.
Pillow-related education as a low-cost intervention with potentially large health benefits.
This consistency supports the validity of your results and reinforces the call for broader dissemination of pillow-use education.

CONCLUSION:
The present study underscores a significant gap in public knowledge regarding the function of pillow ergonomics in the prevention and treatment of neck dysfunction. Despite a notable prevalence of neck pain among the surveyed population—particularly among students and working professionals—there exists limited awareness about how inappropriate pillow characteristics such as height, firmness, and material can adversely affect cervical spine alignment and sleep quality. A majority of respondents lacked understanding of what constitutes an "ideal pillow," with only a small fraction recognizing its role in supporting cervical lordosis and preventing musculoskeletal strain.
However, the findings reveal a promising willingness among participants to modify their habits if adequately informed, suggesting that awareness is a key modifiable factor. Nearly all participants expressed interest in using ergonomically appropriate pillows if these were demonstrated to reduce neck pain or improve sleep. This suggests an opportunity for preventive intervention through education and behavioural change.
The results align with existing literature emphasizing that poor sleep posture—aggravated by improper pillows—can exacerbate cervical dysfunction by increasing biomechanical stress on neck muscles, ligaments, and intervertebral structures. Consequently, addressing these modifiable risk factors through simple lifestyle interventions, such as selecting the correct pillow based on individual sleep posture and body type, could reduce the incidence and severity of neck-related disorders.
From a clinical standpoint, the study highlights the urgent need for physiotherapists, occupational health professionals, and primary care providers to integrate sleep ergonomics education into routine consultations and rehabilitation programs. Community-level awareness campaigns, workplace health promotion, and educational materials tailored to diverse populations could serve as cost-effective strategies to mitigate the burden of neck pain.

In conclusion, raising awareness about ideal pillow use represents a feasible and impactful approach to improving cervical spine health. Empowering individuals with the knowledge to make informed decisions about sleep posture and pillow selection has the potential to significantly enhance quality of life, reduce healthcare utilization, and promote musculoskeletal well-being.

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