

Adverse Effect of Prolonged Sitting Contributes to Neck Impairment in Students.

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ABSTRACT:

This study aimed to identify the prevalence of neck pain that results from extended periods of sitting in students. The main purpose of this study is to investigate the association between neck pain and prolonged sitting periods in college students by utilizing the NDI scale. Neck pain is a growing global issue affecting the quality of life in the adult population. This study discusses the results of a cross-sectional survey conducted on 116 undergraduate and postgraduate students at Sharda University in Greater Noida, Delhi. Additionally, it discusses the prevalence of neck pain in young adults and the importance of maintaining an ideal posture to prevent related health problems. The cross-sectional survey was conducted on undergraduate and postgraduate students, aged 19-30, at Sharda University using the neck disability index (NDI). The study concluded a significant correlation between extended sitting periods and neck disability and also emphasizes the need for early intervention and customized rehabilitation treatment plans to mitigate the negative effects of prolonged sitting on musculoskeletal health.

Keywords: Neck Impairment, Students, Neck pain

INTRODUCTION:

Neck pain is transforming progressively ordinary across the globe in young adults. It is assumed to be a multifactorial disease. Although it is growing more prevalent in the society we are living in currently. It significantly affects people and their families as well as communities, companies, and healthcare systems. Combining data from several epidemiological studies on neck discomfort seems challenging due to the significant variation within them. The majority of individuals have dealt with neck discomfort at an indefinite point in their lives. It seems that most patients have a chronic-episodic trajectory with neck discomfort. [1]

Neck pain is described as an unpleasant sensory and emotional experience that is associated with actual or potential tissue damage in the neck region (from the superior nuchal line to the scapular spine), potentially accompanied by pain in the head, shoulder, or arm [2]. It is an extensive issue, often following closely behind lower back pain in terms of musculoskeletal disorders related to injury and disability claims. It is frequently reported by individuals in the workplace and after RTAs. About 10% of the population experiences neck pain

regularly, with around 80% having some form of neck discomfort at some point in their lives. Additionally, there is a 20-30% yearly occurrence of acute neck pain in the general population [3].

The standard approach in medicine is to look for issues in body and relies on reviewing a patient's medical history, conducting physical exams, and running tests. However, there is a lack of research on how specific symptoms or signs can indicate different diagnoses in individuals experiencing neck pain. Although some studies have attempted to use absolute contraindications to identify potential issues, but their accuracy is limited, and similar factors have not been explored for neck pain. More research is needed in this area. Ideal posture is imperative in keeping your spine sturdy and preventing neck and back pain from developing in the future [4]. Many believe that proper posture involves finding a balance in our musculoskeletal system to reduce stress and strain on the body. However, it is common for people to struggle with maintaining good posture [5]. This is especially important for desk workers and those who have a sedentary lifestyle throughout the day. Individuals usually slouch and hunch over their desks, computer screens, phones, and such electronic gadgets

which contributes to poor posture and related health problems [6].

Slouching or hunching forward puts strain on our spinal discs, potentially causing issues like herniated discs, spinal stenosis, and degenerative disc disease over time. Poor posture can also lead to discomfort and stiffness in our neck, shoulders and lower back by straining our muscles and ligaments [7]. Neck pain caused by poor posture is often linked to spending long periods with your neck and shoulders in fixed and prolonged positions, either at work or during your free time.

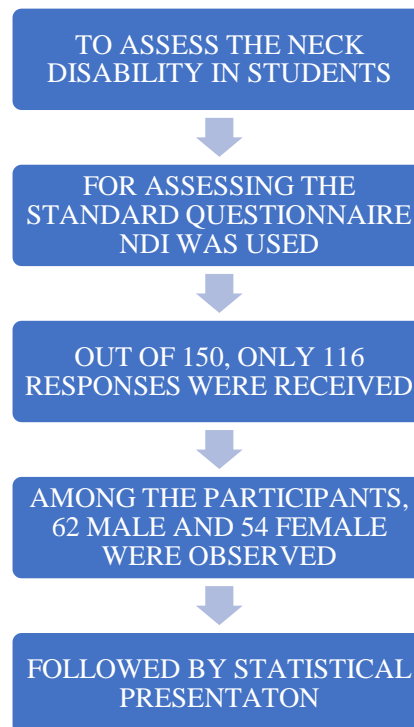
Participants with neck disabilities showed a clear connection between their standing and sitting posture positions [8]. Hence we managed to calculate the levels of disability by making use of the neck disability index self-assessed questionnaire. The NDI was the first instrument designed to assess self-rated disability in patients with neck pain. The NDI is a relatively precise, read-answer instrument that is easy to apply in both clinical and research settings [9]. It is the most widely used and most strongly validated instrument for assessing self-rated disability in patients with neck pain. It has strong psychometric characteristics and has proven to be highly responsive in clinical trials. There are overall ten sections although four sections deal with how you feel (pain level, headaches, focus, sleep), and the remaining six sections relate to daily tasks (lifting, work,

driving, leisure activities, self-care, reading). The survey should hardly take 5-10 minutes for participants to fill out and evaluate and does not require any specific training to fill out the questionnaire.

METHODOLOGY:

- **Study type:** A cross-sectional survey study.
- **Sample size:** 116 Participants.
- **Sample population:** UG and PG students.
- **Location:** Sharda University, Greater Noida, Delhi
- **Inclusion criteria:**
 - 19 to 30 years of age.
 - The participants are all students who have prolonged sitting hours [4-6] with short intervals of break.
 - Gender both males and females.
 - All the participants were healthy individuals.
 - Participants didn't have any history of surgery or accident.
- **Exclusion criteria:**
 - Participants who are uncooperative and mentally retarded were excluded.
 - Non-English language.
 - Unpublished data.

PROCEDURE:



RESULT:

A total of 116 undergraduate and postgraduate (PG) students from Sharda University in Greater Noida, participated in the cross-sectional survey study. The study concentrated on people, irrespective of gender, who were between the ages of 19 and 30 and who spent a lot of time sitting down with little time for breaks. It was a requirement for participants to be in good health and not have had any prior accidents or surgeries. The study excluded participants who were mentally impaired or uncooperative.

NDI INTERPRETATION TABLE	DISABILITY
0-4	NO DISABILITY
5-14	MILD DISABILITY
15-24	MODERATE DISABILITY
25-34	SEVERE DISABILITY

Table: Showing the NDI Interpretation with the disability.

According to the poll, a sizable fraction of participants reported having varying degrees of neck impairment, which affected their routines and everyday activities. Extreme pain and restricted functional disability were linked to higher scores on the NDI in the subjects. The results demonstrated the negative impact of extended sitting times on students' quality of life (QOL) and the necessity of neck discomfort and functional impairment therapies.

COUNT OF GENDER	FEMALE	MALE	GRAND TOTAL
SEVERE	1	2	3
MODERATE	5	2	7
MILD	34	26	60
NO	22	24	46
GRAND TOTAL	62	54	116

Table: Showing the count of gender related to NDI Interpretation with the disability

Notably, compared to younger participants, older participants typically scored better on the NDI. This implies that the degree of neck dysfunction in people who spend a lot of time sitting down may vary depending on their age. Nevertheless, the research also delineated plausible approaches to mitigate functional damage and mitigate cervical discomfort in the subjects. These tactics include taking regular breaks after extended periods of sitting, doing stretching exercises and enhancing posture.

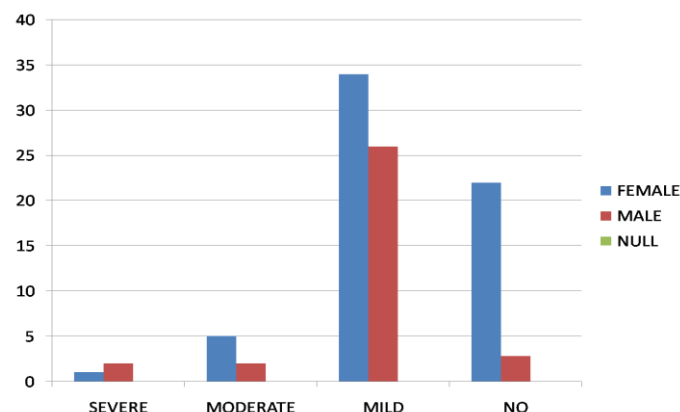


Figure: Showing the bar graph of different gender related to the NDI Interpretation with the disability.

COUNT OF GENDER	MALE	GRAND TOTAL
SEVERE	3.70%	3.70%
MODERATE	3.70%	3.70%
MILD	48.15%	48.15%
NO	44.44%	44.44%
GRAND TOTAL	100%	100%

Table: Showing the percentage of Disability related to the NDI Interpretation in male patients.

DISCUSSION:

The survey's findings demonstrate the substantial effect that extended sitting times have on neck impairment in young individuals, especially those who are students. The results support previous research showing that people with sedentary lifestyles had a significant prevalence of neck discomfort and functional impairment [9]. Age-related neck disabilities highlight the significance of early intervention and preventive measures to lessen the negative effects of extended sitting on the health of the musculoskeletal system [10]. Educational initiatives that raise awareness of ergonomic best practices and good posture may be very important in preventing neck pain and lowering functional impairment in young adults. Furthermore, the results point to the necessity of customized rehabilitation treatment plans to meet the unique requirements of people who scored highly on the NDI. For those who are impacted, incorporating therapies like posture correction, stretching exercises and frequent breaks into daily schedules may help reduce neck pain and enhance functional outcomes.

Overall, the study highlights how critical it is to take preventative action when it comes to young adults who lead sedentary lifestyles and neck pain and disability [11]. Healthcare professionals and educators can enable people to take proactive measures to improve their musculoskeletal health and quality of life by raising awareness, educating the public, and putting focused interventions into practice [12].

CONCLUSION:

This survey concluded that many participants experienced various levels of neck disability, affecting their daily life activities and routines. This survey also showed that a significant number of the participants with higher scores of NDI are interrelated with extreme pain, limited range of motion, and functional disability. The study also brings light to the fact that students who have long sitting hours are often compromising with their QOL. It showed that older individuals who participated

in the survey are prone to having high scores of NDI in comparison to the younger participants. The functional impairment of the adults in the study who had high scores of NDI can be minimized through various rehabilitation treatment protocols. Improving postures, stretching, and taking breaks after a long sitting hour are some of the factors that can be included in the daily life of the participants to reduce the effect of neck discomfort and functional impairment.

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