Title: ORIGINAL RESEARCH PAPER

PREVALENCE OF NECK DISABILITY DUE TO TEXT NECK IN THE POPULATION OF GOA AND ITS ASSESSMENT USING GONIOMETER: A SURVEY

ABSTRACT

A total of 500 subjects were selected by simple random sampling.

Eligibility Criteria:

Study design:

MATERIALS AND METHODS

The questionnaire of the Neck Disability Index (NDI) was used to gather data. Goniometer will be used to assess the cervical range of motion to further assess the disability.

Procedure:

A total of 500 subjects were selected for the study fulfilling the inclusion and exclusion criteria.

RESULTS

The questionnaire of the Neck Disability Index (NDI) was used to gather data. Goniometer will be used to assess the cervical range of motion.

EXCLUSION CRITERIA

• Subjects will be excluded if they have had history of neck trauma or surgery or with a medical diagnosis of fibromyalgia, cervical radiculopathy, a systemic illness, or connective tissue disorder.

• Software engineering and clerical staff

• Subjects who do not agree to fill the informed consent

Procedure:

The potential volunteered candidates were explained the nature and the purpose of the study and those who agree to participate were taken for the study. Eligible candidates filled the consent form.

Tools and measuring methods:

The questionnaire of the Neck Disability Index (NDI) of the population results will be applied in order to gather the related data. Questionnaire of the NDI is distributed to the volunteered candidates in the form of paper.

Universal Goniometer was used to assess range of motion of the neck flexion, extension, lateral flexion and rotation will be measured using a universal goniometer.

RESULTS

The aim of the study was to find the prevalence of text neck in the population of Goa. The sample size consisted of 500 subjects. Data analysis showed that of the 500 subjects, 473 subjects had mild to severe disability and 27 subjects had no difficulty/disability at all (Fig. a).

INTRODUCTION

Young adults today have grown up with mobile phones as an evident part of their lives. Smart phones are becoming central to our everyday lives. They serve as a means to fulfill tasks both at work and home. Texting has become an integral part of daily life. The time spent using a mobile phone and its small keyboard for texting is likely to increase because of the increased multi-functionality of the smart phones. Neck pain is the fourth leading cause of disability.

Text neck is an overuse syndrome involving the head, neck and shoulders, usually resulting from excessive strain on the spine from looking in a forward and downward position at any mobile device.

Objective:

• To find out the prevalence of Neck disability due to Text neck in the population of Goa and to assess the cervical range of motion using Goniometer.

Methods:

• The questionnaire of the Neck Disability Index (NDI) was used to gather data. Goniometer will be used to assess the cervical range of motion to further assess the disability.

Procedure:

• A total of 500 subjects were selected for the study fulfilling the inclusion and exclusion criteria.

RESULTS

• Study suggests that there is high prevalence of Text neck in the population of Goa and also a significant amount of disability associated with the presence of Text neck.

INCLUSION CRITERIA

• Sex: Male and female of ages 18 to 30 years.

• Subjects using smart phones more than one year

• Subjects who agree to fill the informed consent

EXCLUSION CRITERIA

• Subjects who do not agree to fill the informed consent

• Subjects using smart phones more than one year

• Subjects who agree to fill the informed consent

Procedure:

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Severities of the disability

Figure a: Pie chart depicting severity of disability
CERVICAL ROM

Cervical flexion: The normal ROM for cervical flexion is between 0-40 degrees.

Cervical extension: Normal cervical extension is 0-50 degrees.

Cervical lateral flexion (right and left): Normal cervical ROM for lateral flexion on either sides is 0-22 degrees.

Cervical rotation (right and left): The normal ROM for cervical rotation on either sides is approximately 0-50 degrees.

DISCUSSION

The results conclude that text neck is prevalent in the population of Goa and the use of smartphones does lead to mild to moderate amount of disability. None of the participants experienced any severe disability due to text neck. Also noted that, Text neck does lead to restriction in the cervical ROMs.

This study coincides with the findings of a study conducted by Junhyuk Park et al, which concluded that heavy smartphone use may produce considerable stresses on the cervical spine, thus changing the cervical curve and pain threshold of the muscles around the neck thus supporting our study.

J.E. Gold et al, conducted a study on Postures, typing strategies, and gender differences in mobile device usage: An observational study. This study observed that most of the subjects i.e. 91% of the subjects (782 out of 859 participants) had a flexed neck hence implying significant strain in the neck due to typing on the smartphone.

P stalin et al conducted a study on mobile phone usage and its health effects in adults of semi urban area in south India. The study concluded that neck pain was one of the numerous side effects of using smartphone.

Zhi Chan et al, studied the ‘Correlational Analysis of neck/shoulder Pain and Low Back Pain with the Use of Digital Products, Physical Activity and Psychological Status among Adolescents in Shanghai’. Among all respondents, 85.4% were mobile phone users who were less likely to suffer from Low Back Pain (LBP), but a period of mobile phone use longer than 2 hours per day were related to a significant increase in the prevalence of Neck-Shoulder Pain and LBP.

B R Glaukus et al, conducted a study on titled, “The Head Down Generation: Musculoskeletal Symptoms and the Use of Digital Products, Physical Activity and Psychological Status among Adolescents in Shanghai’. The study had similar findings which said that prolonged use of smartphones could negatively affect both, posture and respiratory function.

A study was conducted by Sang In Jung, MS, PT et al on ‘The effect of smartphone usage time on posture and respiratory function’. The study had similar findings which said that prolonged use of smartphones could negatively affect both, posture and respiratory function.

There is no significant difference in ROMs for lateral flexion on the left and right amongst the participants.

Cervical Rotation (right and left): The normal ROM for cervical rotation on either sides is approximately 0-50 degrees.

Conclusion

Data analysis shows that 473 subjects are mild to severe disability and 27 subjects had no disability at all (Fig. a). That is 94.6% of the adults experienced some amount of symptom and disability in the neck and 5.4% of the adults did not experience any difficulty at all.

Majority of the population i.e. 60% of them experienced mild disability. None of the participants had any severe disability.

Cervical ROMs were restricted, hence proving that Text neck has an effect on the cervical movements.

Hence the findings of this study suggests that there is high prevalence of text neck in the population of Goa. There is also a
significant amount of disability associated with the presence of text neck.

REFERENCES
4) Zhi Shan, Guoying Deng, Jipeng Li, Yangyang Li, Yongxing Zhang, Qinghua Zhao (2013). PLOS ONE October2013/Volume8/Issue10.
5) Junhyuk Park1, Jinhong Kim1, Jonggun Kim1, Kwangho Kim2, Namkang Kim2, Inwon Choi2, Sujung Lee2, Jongyeun Yi1,2 *. The effects of heavy smartphone use on the cervical angle, pain threshold of neck muscles and depression. Advanced Science and Technology Letters Vol.91 (Biotechnology and Medical Research 2015), pp.12-17
9) Zhi Shan, Guoying Deng, Jipeng Li, Yangyang Li, Yongxing Zhang, Qinghua Zhao (2013). PLOS ONE October2013/Volume8/Issue10.