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A CROSS-SECTIONAL STUDY AMONG COLLEGE STUDENTS DURING COVID-19 PANDEMIC AND ITS EFFECT ON NECK PAIN DUE TO OVERUSE OF ELECTRONIC GADGET

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ABSTRACT

Objectives: (1) To study the effect on neck pain due to overuse of electronic gadget among college students during COVID-19 pandemic. (2) To find out the associated factors related to neck pain. **Methods:** A cross-sectional study was conducted among college students of Gurugram from May 2022 to July 2022. We include students of 17-25 years of age. The questionnaires were provided to the students via Gmail or personal messages and data were collected after filling up the online google forms. Neck Disability Index scale was applied to know the intensity of neck pain. The data was collected were entered in a Microsoft excel sheet and analyzed using SPSS v 22 statistical software. The results were shown in the form of proportion or percentages and where necessary they were also shown in the form of tables. **Results:** In our study we found that maximum number of participants were used electronic gadgets like mobile phones and most of the (86.3%) participants were preferred side lying position while using electronic gadgets other than online class. **Discussion:** According to our NDI score the maximum number of subjects had mild disability followed by 31.3% of the participant were having no disability, 12.7% of participants had Moderate disability, or a smaller number of participants had severe disability. Sachdeva et al (2021) found that 41.9 %, 24.8 %, and 3.1% of participants had mild, moderate, and severe functional limitations due to neck pain. **Conclusion:** This study found that neck pain is the most common musculoskeletal disorder by excessive use of electronic gadgets during COVID-19 pandemic. Different factors like longer duration, faulty posture, place and continuous study hour are also the reason for neck pain.

KEYWORDS : Faulty posture, Online Classes, MSDs

INTRODUCTION:

COVID-19 was declared a pandemic by WHO (World Health Organization). A nationwide lockdown occurred in India in which the majority of people have faced changes in work patterns and lifestyles both, which we had never experienced before. Even the education sector is still not allowed to have an offline mode of learning to date all. Owing to this many people in India are using many electronic gadgets like laptops, desktops, mobile phones, etc. For attending lectures, webinars, symposiums, and panel discussions video conferencing were done and people work from home in many public and private sectors [1]. Neck pain is a chronic episodic condition characterized by persistent, non-transient, or fluctuating pain. It is a complaint by young adults having 14-71% incidence sometimes in their lives. A number of risk factors are responsible for it. Physical risk factors include posture & duration of the study and one of the important risk factors for neck pain is gender.

Women are more prone to develop neck pain than men & the risk increases with age [2]. It is now well understood that using gadgets for a longer duration impacts an individual's health leading to health hazards. Possession of gadgets and gadget dependence is increasing among the younger generation. Continuous use of gadgets leads to many reported health problems like eye strain, finger pain, backache, neck pain and sleep disturbances. Depending on the amount of time spent on gadgets (duration and frequency), there are adverse physiological, psychological, social and emotional effects [3]. This condition has a complex etiology, including a number of factors: ergonomic (strenuous physical activity, use of force and vibration, inadequate posture, repetitive movement), individual (age, body mass index, genome, musculoskeletal pain history) [4] Increased use of electronic gadget can also lead to prolonged stay in inappropriate postures and static positions, resulting in disrupting the biomechanics of the spine, causing pain, especially in the cervical spine. [5] Forward head flexion at different angles directly affects the cervical spine. At 15° head flexion, around 12 kg of force is placed on the neck. This force rises to 18 kg at 30°, 22 kg at 45°, and 27 kg at 60°.[6]

CLINICAL IMPLICATION:

During a pandemic and somehow in post-pandemic also the use of gadgets increased as compared to the previous one. This may lead to sitting over/watching/leaning over the laptop or electronic gadgets for many hours, because of that lots of musculoskeletal problems arise, which comprise discomfort and pain in various parts of the body including neck, shoulder, elbow, wrist, hand, and thumb. Neck pain is the most common musculoskeletal problem among electronic gadgets users. Neck pain has a relation to the duration of smartphone use, especially bout of length, position in which we are using and multitasking activities. So, this study will emphasize or envisaged this aspect.

RESEARCH METHODOLOGY:

Study-Area: Gurugram, Haryana

Study Period: The study will be conducted from May 2022 to July 2022

Study-design: A cross sectional study

Place Of Study: The study will be conducted in the Department of BPT & MPT, Gurugram university, Gurugram Haryana. The Department of physiotherapy was well established with adequate facilities and infrastructure to

undertake such studies.

Inclusion Criteria:
- All students of 17-25 year of age.
- All students in study area who gave consent.

Exclusion Criteria:
- Those were suffering from serious illness which makes them unable to work.
- Students above 25 years of age and less than 17 years of age
- Students belongs to other university and college.

Sampling Technique:
Universal sampling is taken to include fulfilling inclusion and exclusion criteria for the study.

Procedure For Data Collection:
The data will be collected from May 2022 to July 2022. The questionnaires will be provided to the students via Gmail or personal messages and data will be obtained in google spreadsheet after filling up the online form.
- Each of the study participants was explained about the purpose of study and also was ensured for confidentiality and anonymity of the data.
- Only study investigators will have the access to the study data.
- It is emphasized that their participation in this study is purely voluntary basis and they are free to withdraw at any point of time during study period and there will be no administrative consequences for their withdrawal from the study.

Study Tools:
The following tools were used in this study:
Semi-structured and pre-tested interview schedules will be used. The questions will be asked in local language. Piloting of study questionnaire was done among all MPT and BPT students. It has three different parts to address different objectives of the study.

Data Analysis:
The data thus collected will be entered in Microsoft excel sheet and will be analyzed using SPSS v 22 statistical software. The categorical outcome will be summarized in percentage or proportion.

RESULTS:

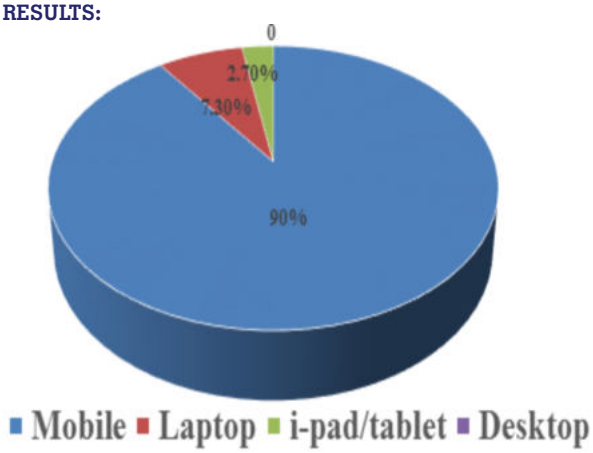

Figure 1: Electronic Gadgets Used By The Participants:

Figure 1 depicts that the maximum number (90 %) of participants were used electronic gadgets like mobiles and a smaller number of participants were used laptops (7.3%) and iPad/tablets (2.7%). None of the suitable respondents were using a desktop.

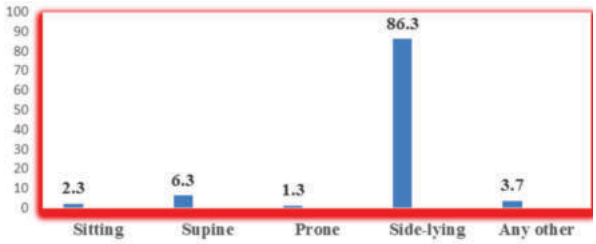

Figure 2: Position Preferred By The Participants While Using Electronic Gadget:

Figure no 2 depicts that the maximum number (86.3%) of participants were preferred the side-lying position during an online class. A small number of participants 19 (6.4%) were used a supine position or any other position (3.7%) and very a smaller number of participants have used a sitting position (2.3%) and prone position (1.3%) respectively.

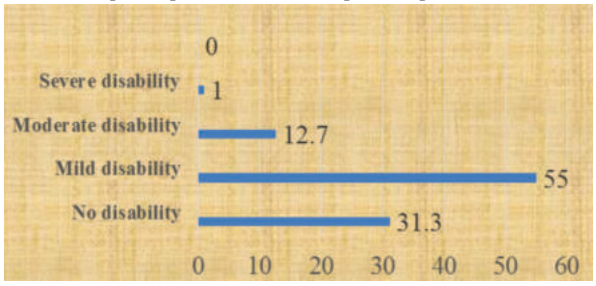

Figure 3: Interpretation Of NDI Scores:

Figure 3 shows that according to NDI grading 55% had mild disability followed by 31.3% of participants were having no disability, 12.7% of participants having Moderate disability, or a smaller number of participants 1% with having a severe disability. None of the participants had a total disability.

DISCUSSION:
In our study maximum participants (45%) were in the age group of 17-20 years and the Majority of the participants were enrolled in the 1st professional year. Similar findings were found that the study conducted by Sachdev et al [7]. found that the maximum participant was from the age group of 18 to 22 years and Most of the participants were enrolled in the 1st professional year.

In our study, we found that most of the participants (52.7%) attended an online class on a bed, 26.8% of participants attend on sofa and a minimum number of participants used electronic gadget on study table and chair. Another study conducted by Shah et al [1] found that 48.8% and 42.6 % of participants were using office table/study table/dining table and bed/sofa/comfort chair respectively.

According to NDI grading our study found that maximum subjects had mild disability followed by 31.3% of the participant were having no disability, 12.7% of participants had Moderate disability, or a smaller number of participants 1% had severe disability. Sachdeva et al (2021) [7] found that 41.9 %, 24.8 %, and 3.1% of participants had mild, moderate, and severe functional limitations due to neck pain. Our study found that a maximum number (86.3%) of participants were preferred side lying position while using electronic gadget. A small number of participants 19 (6.4%) were used a supine position or any other position (3.7%) and very a smaller number of participants have used sitting position (2.3%) and a prone position (1.3%) respectively. Another study conducted by Paracha et al [8] (2019) found that moreover, studying posture 72.4% reported that they study in a lying position while 17.1% used assumed table/chair sitting and 10.5% studied in floor sitting position.

CONCLUSION:

Neck pain is the most common MSDs by using electronic gadgets during this pandemic. Different factors like the faulty posture of the study, place and mode of the study were also the reason for neck pain. We recommended that when people are working in the public or private sector for many hours or work from home on any electronic gadgets start doing stretching exercises of the neck after every 20-30 minutes of continuous work.

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