IMPACT OF ONLINE TEACHING - LEARNING EDUCATION ON NECK PAINAMONGST STUDENTS AND TEACHERS DURING COVID-19 PANDEMIC.

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ABSTRACT:

A survey of 186 participants comprising of students and teachers between ages of 18-51 years was conducted to find out the impact of the new adopted teaching learning method on neck pain particularly as online mode of teaching is the new key platform. The benefit of which can be making oneself aware of difficulties and implementing effective ways so that new education imparting is continued without compromising on physical fitness. A cross sectional online survey was done using a simple patient reported outcome measure of Neck Disability Index. It was found that individuals with no disability were n=104 (56% points), mild disability were n=68 (37% points), moderate disability were n=12 (6% points), severe disability were n=2 (1%) and total disability n=0 (0% points). Also we found the most affected section of Neck Disability Index amongst all the 10 sections which showed the section of lifting was affected to 11.39%, reading to 18.92%, headaches to 20.64%, concentration to 14% and driving to 16.77%. The study concluded that mild disability due to neck pain does exist amongst the students and teachers during this pandemic and as online teaching-learning may remain for longer duration everyone must be making oneself aware of difficulties and implementing effective ways so that new education imparting is continued without compromising on physical fitness and increase efficiency of the whole new process.

Key words: COVID-19; neck pain; students; online teaching- learning; Neck Disability Index; survey

I. INTRODUCTION:

The COVID-19 is a highly infectious disease or illness caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), originated in Wuhan city of China in the month of December 2019. It has affected all the continents due to its severity and fierceness posing as the greatest global health crisis making it a pandemic in a very short course of time. To get control over COVID-19 pandemic is possible to a greater extent with people's unbridled determination of the stringent precautionary measures such as maintaining social distancing, following medically instructed quarantine process and embracing hygiene and sanitation (Khachfe et al., 2020).

Notably, India is witnessing a sudden surge in COVID-19 cases again and deaths after touching a low of less than 10,000 cases in February 2021. Vaccination though in progress still has to reach masses. [1,2]

Approximately 264 million children and adolescents are not in school (UNESCO, 2017), and this pandemic made this situation further worst. As the COVID-19 pandemic spreads, there has been an increasing move towards teaching online because of shutting down of schools, colleges and universities for an indefinite time as the only option left (Martinez, 2020). Informal and non-formal education is also tremendously affected. However, it is a well-established assumption that no pedagogical approach can replace the peak position of formal education due to having teacher-taught direct interaction. But, the aftermath of COVID-19 crisis, online education became a pedagogical shift from traditional method to the modern approach of teaching-learning from classroom to Zoom, from personal to virtual and from seminars to webinars. Previously, e-learning, distance education and correspondence courses were popularly considered as the part of non-formal education, but as of now, it seems
that it would gradually replace the formal education system if the circumstances enduringly persist over the time. [2]

Adopting this new teaching learning method has imposed its own challenges on physical fitness which we need to tackle to sustain for long term anticipating the course of pandemic.

Physical fitness is vital for any profession we are in (David, 2019) be it a student or a teacher. [2]

Although voluntary or a compulsory stay-at-home strategy is quite effective for preventing Covid-19 exposure (Fowler et al. 2020), it may bring about problems, like physical inactivity, weight gain, behavioral addiction, and social isolation (Lippi et al. 2020; Öztürk and Bayraktar 2020). Alteration of musculoskeletal conditions and pain may also increase with physical inactivity (Holth et al. 2008). In an expert opinion, it was emphasized that health risks, including musculoskeletal disorders, may increase during prolonged Covid-19. [5,6]

This study aimed at assessing the impact of the new adopted teaching learning method on neck pain particularly as online mode of teaching is the new key platform. The benefit of which can be making oneself aware of difficulties and implementing effective ways so that new education imparting is continued without compromising on physical fitness.

II. MATERIALS & METHODS:

To achieve the purpose of this study permission was taken from the institutional ethical committee. On occasion of World physiotherapy day a webinar was conducted on virtual platform for enlightening the students as well as teachers on right and wrong postures during online teaching learning mode. 186 individuals participated in the online survey. The participants were asked to provide their demographics, working hours in front of computer, occupation, total working hours a day, any medical condition if existing. After completion of the webinar participants were explained about the study and those willing to participate in the study were included. The individuals were asked to fill the online Google form comprising of neck disability index questionnaire along with the aforementioned details.

The data was collected and statistical analysis was done using SPSS version 20. The data was analyzed for normal distribution. The continuous variables were expressed as mean and SD whereas categorical variables were expressed in the form of frequency table and percentages.

<table>
<thead>
<tr>
<th>Gender</th>
<th>No. of individuals</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>51</td>
<td>27 %</td>
</tr>
<tr>
<td>Female</td>
<td>135</td>
<td>73 %</td>
</tr>
</tbody>
</table>

Graph 1: Gender distribution
Interpretation: The graph and the table represent that out of total no. of individuals 73% of population were females and 27% were males.

Table 3: Most affected section of Neck Disability Index.

<table>
<thead>
<tr>
<th>Grades of Neck Disability Index</th>
<th>Raw Scores</th>
<th>Number of individuals (out of 186)</th>
<th>Percentage points (out of 100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No disability</td>
<td>0-5</td>
<td>104</td>
<td>56%</td>
</tr>
<tr>
<td>Mild Disability</td>
<td>6-14</td>
<td>68</td>
<td>37%</td>
</tr>
<tr>
<td>Moderate Disability</td>
<td>15-24</td>
<td>12</td>
<td>6%</td>
</tr>
<tr>
<td>Severe Disability</td>
<td>25-34</td>
<td>2</td>
<td>1%</td>
</tr>
<tr>
<td>Total Disability</td>
<td>35-50</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

Graph 2: Graphical representation of frequency distribution of grades of neck disability index score
Interpretation: The graph and the table represent that out of total no. of participants 56% of population had no disability, 37% had mild disability, 6% had moderate disability, 1% had severe disability and 0% had total disability.

<table>
<thead>
<tr>
<th>Section of Neck Disability Index</th>
<th>Raw Score</th>
<th>Percentage points (out of 100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 3: Lifting</td>
<td>0-5</td>
<td>11.39 %</td>
</tr>
<tr>
<td>Section 4: Reading</td>
<td>0-5</td>
<td>18.92 %</td>
</tr>
<tr>
<td>Section 5: Headaches</td>
<td>0-5</td>
<td>20.64 %</td>
</tr>
<tr>
<td>Section 6: Concentration</td>
<td>0-5</td>
<td>14%</td>
</tr>
<tr>
<td>Section 8: Driving</td>
<td>0-5</td>
<td>16.77 %</td>
</tr>
</tbody>
</table>
Interpretation: The table and the graph represents the most affected sections of neck disability index were section 3: Lifting (11%), Section 4: Reading (19%), Section 5: Headaches (21%), Section 6: Concentration and Section 8: Driving (17%) out of all the 10 sections.

This paper intended to study the impact of online teaching learning on neck pain during COVID-19 pandemic. While everyone is trying to get accustomed to this new mode and varied perspectives on the challenges facing online teaching-learning today, the important aspect of physical durability should also be taken into consideration.

III. DISCUSSION:

This study was a simple cross-sectional survey done amongst students and teachers to find out how the neck pain has affected their ability to manage in everyday life post long hours onscreen when adapting to this new online teaching learning method during COVID-19.

In our study the age group was 18 to 51 years with mean age 23.95 ± 5.30 years. Working hours in front of computer (onscreen or any digital device) mean was 4.8 ±7.3 hours. The study showed that most of the participants were females 73% and males were 27% as depicted in table 1 and graph 1.

The Neck Disability Index scores were analyzed amongst 186 participants and it was found that individuals with no disability were n=104 (56% points), mild disability were n=68 (37% points), moderate disability were n=12 (6% points), severe disability were n=2 (1%) and total disability n=0 (0% points) as depicted in table 2 and graph 2.

A recent study done on Prevalence of Neck Pain and Back Pain in Computer Users Working from Home during COVID-19 Pandemic: A Web-Based Survey stated that 70.5% of their participants had pain or discomfort in body out of which 42.9% had pain in neck and upper back region, 36.3% had pain in the lower back region and legs whereas 16.5% had pain or discomfort in both region. [7]

Also we found the most affected section of Neck Disability Index amongst all the 10 sections which showed the section of lifting was affected to 11.39%, reading to 18.92%, headaches to 20.64%, concentration to 14% and driving to 16.77% depicted in table 3 and graph 3.
These findings can be supported by various studies, one of the study in which a survey of E- learning methods in nursing and medical education during COVID-19 pandemic in India was done. It stated very important points like there should be guidelines (number of classes/day, length of each class, break between classes, curriculum, etc) to improve the retention capacity in students and reduce health issues. Also they found that each Class duration >4 h/day (p < 0.0001), each class >40 min (p < 0.009) and pre-existing health issues (p < 0.0001) predicted the occurrence headache, eyestrain, anxiety, neck/back pain, and sleep disturbance. [8, 9, 10,11]

Neck pain particularly is going to result from the unnatural position we assume causing microtrauma and stress to the upper back and neck area, and leading to pain and discomfort. Most of the times we don’t think about the way we are sitting or take corrective action until we are in pain. Because it can take months to develop neck and or upper back pain, and even longer to really change one’s posture, it’s easy to form bad habits in our posture while using our digital devices.

There is a need to enhance feasibility and effectiveness of e-learning by taking into account the important aspect of physical durability. Continuous feedback and planning of the online teaching -learning schedule from teachers and students will be required to make e-learning effective and reduce health issues.

IV. CONCLUSION:

With this study we have found that mild disability due to neck pain does exist amongst the students and teachers during this pandemic and as online teaching- learning may remain for longer duration everyone must be making oneself aware of difficulties and implementing effective ways so that new education imparting is continued without compromising on physical fitness and increase efficiency of the whole new process.

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