Hazardous Health Impact of Virtual Education during COVID-19

Abhisek Mishra1,*, Byomakesh Debata2, Pooja Patnaik3, Bhawani Prasad Bag4 and Iswar Baitharu5

1School of Management, Gangadhar Meher University, India.
2Department of Economics & Finance, BITS, Pilani, India.
3School of Business and Management, CHRIST University, India.
4Department of Biotechnology and Bioinformatics, Sambalpur University, India.
5Department of Environmental Sciences, Sambalpur University, India.

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ABSTRACT
The rapid spread of COVID-19 compelled the infected nations to close down their educational institutions to check the rigor of spread. In such context, to provide uninterrupted education to the students, virtual education through internet was widely adopted. This paper throws a light on how the students engaged in virtual education are exposed to various unexpected health perils due to the use of internet and smartphones. Moreover, this paper suggests taking a holistic approach through the introduction of “Yoga” in the course curriculum to avoid the unexpected health hazards.

Keywords: COVID-19; virtual education; health hazards; mental health; yoga.

*Corresponding author: E-mail: abhisek.mishra@hotmail.com;
1. INTRODUCTION

The world health organisation declared COVID-19 as a pandemic due to its rapid transmission [1]. To check the rigor of its spread, infected nations wisely took decisions for closure of educational institutions. In such scenario, providing undisrupted education to the students was a monumental challenge. However, in mitigating the problem of providing continuous education to students, online or virtual classes through internet were introduced as the new line of teaching process. Cost-effectiveness and flexibility in conducting classes are the benefits of this format of teaching [2].

2. STUDENTS’ EXPOSURE TO POSSIBLE HEALTH HAZARDS THROUGH ONLINE CLASSES

Notwithstanding the above advantages, exposure of students to various health hazards due to frequent use of internet in this new format of teaching is a major concern which cannot be overlooked. Because, it is reported that mobile operators providing internet facility use radio frequency waves ranging from 2-3 GHz [3], which is several fold higher than the prescribed safe frequency of 300 Hz or 30 KHz or 0.2 mT.[3]. Moreover, disturbed sleep is known to be the common heath complaints among youths attributing to electromagnetic field (EMF) exposure [4]. Hyper tension, impaired immune system, cardiovascular disease, disorder of mood and loneliness are the resultant of inadequate sleep [5]. Further, enhancements in the blood glucose level, increment in the lipid level, and decline in the testosterone level are reported due to the augmented exposure to EMF [6]. In addition to the above health issues, different epidemiological studies have also established the association between exposure to electromagnetic field and risk of cancer, leukemia and tumors [7,3]. Computer vision syndrome (CVS, a spectrum of clinical vision related symptoms) is the resultant of prolonged use of visual display terminals (VDTs) like computers, smart phones and televisions. Students are engaged in the online classes either through computers or smart phones. In that case, they are also exposed to symptoms of CVS like dryness & irritation and blurred vision [8]. Along with the above health perils, online mode of teaching has several disadvantages like Ineffective teaching practices and lowered quality of interactions [9].

Empirical studies conducted in China [10], Japan [11], United States [12], Turkey [13], and India [14,15] report various vision related problems like dryness of eye, declined vision, eyes hurting and eyestrain due to frequent exposure to VDTs. Further, studies [16-18] report that use of smartphones for more than two hours daily increases the incidence of Digital-eye-strain among children. Moreover, association between use of internet and poor mental health and depression are also evident [19-21]. The above description depicts two scenarios; first, the use of internet is inevitable for educating the students in the present pandemic situation. Second, it will affect the mental health of students due to stress and disturbed sleeps caused by excessive use of internet and frequent exposure to VDTs for hours together, which may further damage their physical health [10].

3. IMPORTANCE OF PHYSICAL ACTIVITIES IN PROVIDING MENTAL AND PHYSICAL WELL-BEING

Physical activity and fitness (both mental and physical) of a student affect their cognitive function and academic performance [22]. Therefore, students’ engagement in various physical activities for specific hours in a week as a part of course curriculum is evident in developed countries like Germany, France, Ireland, Spain and United Kingdom [23]. During the ongoing pandemic situation, where the restrictions on movements are imposed, it becomes difficult for students being engaged in physical activities. Thus, considering the importance of mental and physical health in academic learning, educational institutions should adopt a holistic approach other than physical activity in the present pandemic situation.

4. YOGA: A HOLISTIC APPROACH IN PROVIDING MENTAL AND PHYSICAL WELL-BEING

Yoga is an ancient practice that provides an art of living in maintaining healthy and peaceful life. It has also been considered as a therapeutic intervention with many psychological and physiological benefits since early 20th century. Metaphorically, Yoga comprises eight aspects or limbs such as disciplined life (yama and niyama), physical posture (asana), breathing regulation (pranayama), sense control (pratyahara), concentration (dharana) and bliss (samadhi).

A term used to explain all aspects of eyesight problems aroused due to long term exposure to digital screen.
Amongst all, pranayama has been given more importance in ashtanga Yoga for maintaining good health [24]. Kapalabhati, anulomaviloma, bastrika, and bhramari are the mostly used yogic breathing practices. The yogic breathing practices are effectively helpful in stress reduction, cardiovascular and blood pressure related disorders [25,26]. Realising the importance of yogic practices in providing mental and physical wellness, ‘Yoga’ can be introduced in the course curriculum during the online classes to avoid the unexpected health perils. The next prime concern is how yoga can be implemented in the virtual education system? From a survey on students’ response on online classes it is evident that students’ prefer to have each online class with a duration less than 40 minutes and a break of 10-20 minutes between each class to make the online classes more interactive and informative [15]. Therefore, in the break time, students can be engaged in performing Kapalabhati, anulomaviloma, and bhramari are pranayama for 10 minutes (3 minutes each). Further, before introducing this practice, students should be well aware of the benefits of yoga and the objective of doing that; because awareness helps in learning and enhances the efficiency in performing a task.

5. CONCLUSION

Thus, in a nut-shell, this paper concludes with the suggestion of introducing yoga in the break time for addressing unexpected health threats faced by the students engaged in virtual education system.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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