

Learning is screwing Up the Students During Covid-19

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Abstract: Covid-19 has changed the life of all people irrespective of state, country rather entire world. We are consuming toxicity of sodium hypochlorite, methanol etc. in the name of sanitizer and our future generation (students of all age groups) are taking lot of radiation and harmful visual exposure in the name of online classes. The main objective of our study is to aware the parents regarding a comprehensive critical review of the bad effects of online classes and suggest them some remedies. In the near future those students who are spending lots of time in mobile, laptop, Wi-Fi etc. throughout the day for doing online classes are closer to the probabilistic health diseases like vanquishing brain glucose metabolism, reduction of the volume of thyroid cells, decreasing the number of sperm count which in near future will tend to infertility, eyesight damages, skin problems and different ear infection with a chance to deafness because of different frequencies they are consuming. On the other hand, students are mentally not well, sick and depressed. In reality, we are unable to prioritize a student's mental health which makes his own signature. As a result, the uniqueness of the students is in an endanger phase. But we are not against of teaching. This is the high time to teach students ethics and values along with their courses and give them tasks so that they can create their own signature.

Keywords: Online classes, Covid-19, radiation, depression, health hazards

Introduction: Presently, Covid-19 is such a word which is creating a threat throughout the world. We all the global villagers are suffering from various unique individuals' problems. As a result, this pandemic situation not only creating physical disturbance to us but also it has a great impact on our mental status which is really vulnerable among all group of people. Here we are considering the students of different age groups which is the most important part of every country. Students are our future assets. But now are days because of pandemic the technology is playing a vital role in slow poisoning the student's mental and physical health. In true sense, though the teachers are taking online classes for the future betterment of the students at the cost of their health. Firstly, if we consider the basic level of student from KG to class V and another from Class VI to class XII who are mostly yet to achieve their adulthood, we are throwing them in the high risk zone of radiation in the name of online classes.

Radiation has comparatively more impacts on developing cells compared to completely developed cells. That's why effect of radiation is much more in developing child compared to adult. Below 16 years a child's brain is not completely developed. So radiation has a great impact in their body including brains. On the other hand, growing habit of using mobiles creating mental distance from their parents and attacking their mental growth. In some cases, that leads to depression. Not only that students' eyes are also going towards a threatening situation (different eye related problem and blindness) because of eye to mobile contact for a long duration at a stretch but also the chances of ear infection that can leads towards deafness. Those students who are doing online classes for a long duration consuming radiation of two different frequencies, one from electronic devices (27 MHz) and other from internet and Wifi (2.4 GHz). From different research work it is evident that radiofrequency can

easily passes through human body and during that time human body absorbs some frequency abundantly and kills or damage surrounding cells. When Radiofrequency passes through brain it vanquishes brain glucose metabolism and relative cerebral metabolic rate of glucose is decreased. Brain region demonstrating decrease in flurodeoxyglucose (FDG) uptake rate in presence of mobile phone radiation. Radiation from mobile phone influence amyloid precursor protein (which cleaved by many enzymes) and α -synuclein metabolism in SH-SY5Y cells that can increase the possibility of diseases like Parkinson's and Alzheimer's. Oxidative stress and cytotoxicity are introduced from the radiation. Those radiations have impacts on brain where mitochondrial injury can take place. Radiation has also impact on thyroid cells (T3, T4, TSH) and hormones which can minimize the volume of thyroid cells by changing the thyroid glands follicles and it can reduce the diameter of thyroid follicles that have a potential link with radiation. Another side effect of radiation on skin which can be seen externally such as dermatitis, wrinkled neck etc. We can easily feel the heat after having a long conversation on mobile. So that heat can easily cause harm to our external parts of body as well as internal parts. Another most important impact of radiation on human psychology (different activities of brain) that creates sleep disturbances, fatigue and headache which can lead towards depression along with minimization of melatonin production. It is already established in the literature that there is a strong correlation between mobile phone radiation and DNA-fragmentation level which decreases sperm count, the main cause for male infertility.

In the year 1999, The Royal Society of Canada reported the potential health risks of radiofrequency fields from wireless telecommunications devices. Schirmacher et al. (2000) proved that electromagnetic fields (1.8 GHz) increase the permeability to sucrose of the blood-brain barrier in vitro. Nerve cell damages in mammalian brain after exposure to microwaves from GSM mobile phones (Salford et al., 2003).

Several researchers have studied the effect of electromagnetic field on human body and other animals and found some significance resultant effects of several diseases (Caprani et al., 2004; Iorio et al., 2006; Hardell L and Sage C, 2008; Johansson, 2009; Abdel et al., 2010; Bilgici et al., 2013; Sadetzki et al., 2014).

Ashraf et al. (2009) reviewed the biological effect of cell phone radiation on human. Volkow et al. (2011) studied the effects of cell phone radiofrequency signal exposure on brain glucose metabolism.

Next, Konstantin and Korotkov (2012) measured energy field and studied the effect of exposure to electromagnetic fields and Soderqvist et al. (2012) studied the impact of cell phone on sleep. They indicated to the lower concentrations of b-trace protein which is due to the uses of cell phone causes sleeping disorder.

International Agency for Research on Cancer (IARC) at the World Health Organization (WHO) in May 2011 observed the brain is the major target organ of RF radiation. Longer period of this type of radiation increases risk for brain tumors. Radiation from radio frequency (30 kHz–300 GHz) is a Group 2B possible human carcinogen (IARC 2013).

From the works of Hardell et al. (2013), Coureau et al (2014) and Hardell&Carlberg (2015) it was clear that radiation causes brain tumors, that is, glioma and acoustic neuroma. Spitzer, M. (2014) highlighted the risks and side effects of Information technology in education.

In the year 2016, The National Institutes of Health in the United States released a report on the largest ever animal study on cell phone RF radiation and cancer (Wyde et al., 2016). Carlberg&Hardell (2017) established the relation between the uses of mobile phone and glioma risk.

Problem Statements: The physical and mental impact of online classes during Covid-19 and related problems due to radiation on different age groups of students. In reality, because of online classes students are actually facing two types of radiation one

which are generating from the devices itself and another through Wifi connection. Now our problem is the assessment of risk of affecting students' health (specifically eye, ear, skin and some other specific organ like reproductive organs, thyroid gland, and brain) during online classes which is going on throughout the world in this Covid-19 situation. That will be an important input for setting strong strategies to promote the health risks of students which is highly associated with online classes.

Conceptual frame work: A small experiment can develop a hypothesis on impact of online classes on students' health. During online classes if we fix the headphone in our ear by tape for more than two hours we will find some kind of uneasiness in our head-neck zone. From the knowledge of Physics, we can come to a conclusion that heat can be generated from conversion of sound energy to thermal energy but which can't be always measured from outer surface.

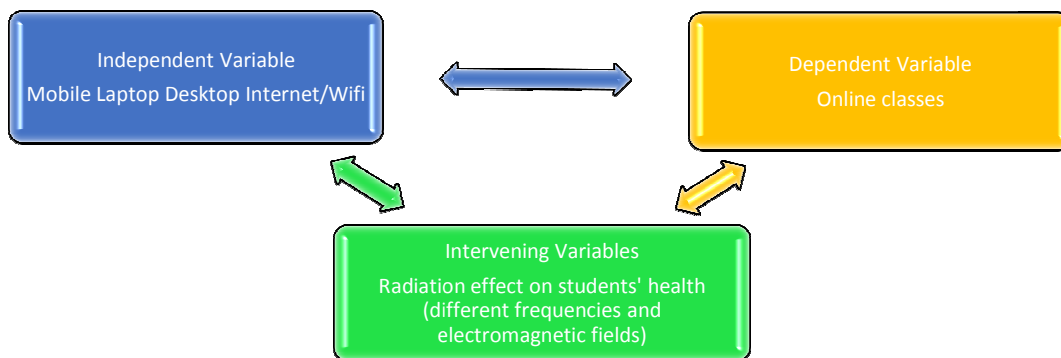


Fig. Correlation among the variables

Objectives: The main objective of our study is to make parents aware of the effects of radiation on students' physical and mental health at the time of online classes and minimize the probability of consuming radiation and study the stochastic effect of the same on students irrespective of their age groups during online classes.

In association with primary objectives there are some secondary objectives which are

- a) To generate awareness among all the parents throughout the world about the future adverse effects on the health of students due to penetration of radiation at the time of online classes.
- b) To find out the alternative to traditional online classes.
- c) To protect our future generation from blindness, deafness, infertility, and other different potential health diseases along with cancer.
- d) To reduce some non-stochastic effects of radiation which mainly effect skins and eyes.
- e) To promote justified optimized use of online classes to limit the consumption of radiation

Methodology: Here we have gone through an online questionnaire survey. we are mainly considering on primary data that has been collected either directly from the students or from the parents (KG to class V). We have also collected some secondary supportive data from different previous and ongoing research work. Then we divided the entire students into three different clusters. First group belongs to KG to class V, second group from class VI to class XII, and third group consists of Graduation and Masters students. Among those 500 students, 150 students belong to first group, 100 students belong to second group and

rest 250 are in the third group. We have critically tested the impact of radiation on ear and head neck zone through ear phone and head phone which can be easily tested. Data thus obtained from the respondents have been subjected to simple statistical analyses using descriptive statistics, t-test etc.

Research Design and Analysis:

In order to study whether the radiation is having any significant effect on the age of the students, we have taken into consideration two groups of students (First group and Third group) on the basis of their age. Now for each of the parameters associated with health hazards the average of the score (out of 10) given by the members of first group (Say Group A) is calculated. So basically, the respondents of group A is the students as well as the parents of those students from KG to class V. The same is done for each parameter by taking the scores given by the member of third group (say Group B). So Group B consists of graduation and master students. These average score of both the groups are presented in Table -1. Then by applying matched paired t-test a comparison has been done between the average score (out of 10) given by the members of group A and Group B.

H₀: There is no relation between the age of students and effect of radiation.

H₁: There is a relation between the age of students and effect of radiation.

Patterns of Health hazards	Class KG – Class V students and their parents(Group A)	Graduation and master students (Group B)
Visual distortion	6.89	4.1
Several ear related problems	7.63	7.1
Blinking eyes and eye water drops	7.15	5.31
Head neck back pain	3.59	4.1
Skin irritation and redness/ toned	2.75	1.62
Sleeping disorder/ insomnia	3.85	3.31
Stressed eyes	7.81	6.77

Table -1

Here the calculated $t = 2.647893$. Degree of freedom = $7-1 = 6$. Tabulated t at 5% level of significance = 2.447

Therefore, the calculated $t >$ tabulated t . So, there is a strong reason to reject H₀. And H₁ is accepted.

So there is a relation between the age of students and effect of radiation.

Findings: After going through all the questionnaire the answers we are getting is really shocking and also threatening for our future generation. The students after spending a lots of time in mobile are suffering from headache and vision related problem. Students from KG to class V are new users so either they are unable to identify or they don't want to identify the health problem happening, for that reason the data has been collected from their parents. The second group who are very interested in internet, they are not at all willing to recognize any health problem because of radiation. So its very difficult to collect data from them. The third group who are already accustomed with different online applications, they can easily recognised different health related problems associated with long duration online classes and provided the actual data. From different authentic sources we already know that radiation is more harmful to the children below 16 years as because their brain is not completely developed.

1. Most of the students are not enjoying online classes irrespective of all age groups.

2. Though some students are enjoying their stay at home, but some are feeling mental stress, and agony for their staying at home specially those students whose both parents are working.
3. From KG to class V students who are doing online classes regularly which make them more mobile addicted (for gaming). As a result, some students are facing various vision related eye problem along with Myopia.
4. From class VI to XII students are just at the very crucial age of adulteration are not only enjoying online classes but also engaging themselves in various online gaming and different adult contents as because at the beginning of online classes some apps divert the students to some restricted contents or sites which misguide them and demoralized their lifestyle before adulthood.
5. For graduation and masters group, they are doing online classes for their study purpose because they are adult enough to access the mobile and internet but they are really feeling some physical and mental problems because of long duration online classes. It is very unlikely that because of online classes a few students are losing their interest in popular apps.
6. Some students irrespective of all age groups are learning many ethical and cultural values from their family members during their long stay at home with their senior family members. Along with that they are engaging themselves in some creative activity and revitalizing their old talents which was suppressed in their regular busy schedule.
7. Students who have a habit of doing classes by taking laptops in their laps can feel the heat generating from laptop which has a direct impact in their reproductive organs specially for male students.
8. After long hour of online classes, most of the students are facing some sort of uneasiness in their head neck zone.
9. Most parents and students are not aware of mental depression during covid-19.

Limitations of the study:

1. It is very difficult to develop awareness among parents regarding the harmful effects of online classes.
2. Now days, Indian parents are always willing to make their child as a player of educational rat race without caring for their future health.
3. The teachers are fulfilling their duties just by taking some educational classes without concerning about the health hazard of students due to radiation.
4. In India most people are not aware of the health hazards happening due to internet radiation.
5. As mass online study is a very new concept due to Covid-19 situation, it is to early to predict the long run effect of this kind of study.

Suggestions:

1. Switched off WiFi: Whenever we are not using internet, WiFi router should be switched off. Unnecessary why will you suffer radiation even when you are not working. Here guardian have to take active steps regarding router turn off.
2. Never use laptop placing on the lap: Using laptop by placing it on lap is not a heathy practice. It is not safe. To gar rid of the EMF radiation one can use lap-sized desk or cool pad to rest laptop on. It reduces radiation and heat generated from laptop.

3. Use EMF meter: use of the EMF meter can make us aware about the actual amount of radiation someone is facing and from that a general awareness can developed.
4. Choose correct headphones: Use Airtube headphones. A quality pair of Airtube headphones keep the speakers away from head and reduces radiation.
5. Step away from computer: take breaks whenever possible and never be on computer for more than an hour. This will relief our body as well as eyes.
6. Get some radiation absorber: Keep some material in your surrounding that can absorb radiation. Aloe Vera and cactus plant help to absorb and dissolve some EMF Radiation. They also work on toxins and reduce indoor pollution. Himalayan salt lamps maintain an ionic balance in home by giving off negative ions into and cancel out some of the EMF exposure.
7. Keep distance from the monitor: Try to maintain at least 3-4 feet distance from monitor.
8. Avoid Wireless Accessories: Wireless peripherals emit harmful small radiofrequency. So it's always better to use separate wired keyboard and mouse.
9. Practice eye exercise: Guardians have to take active part in making a habit of eye exercise (looking at far after each hour of screen-eye interaction) of their kids. Adults have to set the eye exercise with the class routine.
10. Protective gear: Use protective eye glasses that filter UV and blue light emitted from the technology. Use of technology like Apple's nights shift and Samsung's blue light filter are advisable. Along with this they can wear some protective throat belt to avoid radiation in thyroid gland.
11. The dark factor: Avoid using electronic devices in the dark.
12. Skin care: Revitalize your skin by maintaining proper healthy food habits and lifestyle modification.
13. Obsolesce of Ethics: Teacher can ask their students(up to school level) to write some letters to their family members which will contain the role of the family members in their lives, how they can return their parents' effort behind making them and gradually at least some students can identify the value of family in their lives.

Along with the above suggestions there are some additional suggestions which may create significant difference in some distinguished cases:

- (i) For KG to class V group of students, teachers can give them some tasks of making something from their home waste materials. Along with this teacher can ask them to do something of their own choice such as painting, writing, reciting etc.
- (ii) For class VI – XII group, parents can ask them to cook something under their guidance and make a video during cooking and send all those things to their respective educational institution because cooking is such a quality which must be known by all of us.
- (iii) For the graduation and master's students' teacher can give them a task to plant some trees of easily available vegetables in their own places and take care of them like parents. They can also give a particular name each tree planted by them and after sometime when they can see their own plantation that will make them feel good which automatically minimize their depression to certain extent. They can also go for their own write up on different issues and go for some innovative relevant business on this present economically unstable Covid-19 situation.
- (iv) To reduce the effects of radiation we can follow by minimizing the duration of online classes.

Conclusion:It is very clear that the radiation from electronic gadgets (desktop, laptop, tab, mobile) and WiFi are disrupting the physical and mental health of the students.From our observation we can say that the impact of radiation is maximum for kids

and gradually the impact decreases as the age increases. But radiation has an overall impact on different parts of the body among all the student from KG to PG as they are bounded to attend the online classes for a long duration. So radiation has direct and indirect impact on students' overall body parts like eyes, ears, skin (three out of five sense organs), brain, thyroid glands (cells and hormones), and reproductive organs (because of electromagnetic radiation, sperm count is decreasing gradually in case of adult male students which is really threatening for their future fertility as 60% sperm count is essential for fertilization of eggs). From the literature it is evident that impact of radiation is more on developing cell rather than completely developed cells. So child who are yet to develop are at high risk zone because of attending online classes for long duration.

Why we are thinking that if our little one (student from KG to class V) do not attend online classes to maintain the conventional ways of studying during Covid-19 period then it will be a great loss for him or her. Rather according to us it may be an opportunity for them to learn something ethical and value added morals by listening stories from their elders, reading different types of books, planting (to know the value of a tree), creatively make something from household waste materials etc., in a word, learning by going out of the box. Similarly, for the second group (students from class VI to class XII) teachers can assign particular task for the students every week over email and students will learn those from their text books along with some reference book (if they have) and enhance their skills of mathematics and science by practicing in their own way. There will be different doubts clearance session for an hour in each week for each subject. Teachers can also give them some moral ethical topic for the enhancement of their writing skills and parents can engage them in traditional or general cooking which they can use as a profession or for survival in future. The students from graduation and master degree i.e. the third group can easily identify their task and take help from respective teacher's according to their needs. But this Covid-19 may be an opportunistic situation for them also. They can take preparation for different service examinations, higher studies along with thinking about their own start up. So overall a small step of parents and teachers may lead towards a great benefit for the students i.e., minimization of duration of class. After class and necessary work parents must switch off potential radiating gadgets. The parents have to encourage the next generation regarding their physical activity along with compulsory eye exercises. Particularly for this groups students have to take a good care of themselves by ensuring that their mental health should be in such a state so that they will be out of depression. Parents have to play a crucial role by sharing their next generations' problems and dilemma. Parents also have to ensure adequate environment in home so that their next generation can spend quality time without boredom. So overall conclusion is less the age more the risk of health hazard caused by radiation, so age is inversely proportional to the effect of radiation. So on line class duration should be directly proportional to the age of the students.

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