EuropeanJournalofMolecular &ClinicalMedicine

ISSN2515-8260 Volume 09,Issue 06,2022

Original Research Article

Impact of online learning on student's physical and mental health amidst COVID-19 pandemic in school at UrunIslampur, Sangli, Maharashtra, India

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Abstract

Background: Lockdown due to COVID-19, forcibly moving educational activity to the online environment allows for flexibility in teaching and learning because courses are easily accessed. The online learning environment varies profoundly from the traditional classroom situation when it comes to learner's motivation, satisfaction, and interaction.Present study was aimed to study impact of online learning on student's physical and mental health amidst covid19 pandemic in school at UrunIslampur, Maharashtra, India.

Material and Methods: Present study was cross-sectional, observational study, conducted in students of 11-15 years age, learning in 5^{th} to 10^{th} standard, who are attending online classes & had usage of smart phones more than 4 hours.

Results: In present study, majority of children were from 14-15 years age group (33.5 %) & 13-14 years age group (32.5 %). Boys (53 %) were marginally more than girls (47 %).During study, common problems identified with online learning were poor connectivity (37.75 %), no supportive materials are provided (34 %), No opportunity for interaction (25.25 %), no guidance is given for online platform (23.75 %), lack of support (14.75 %), no clarification of doubts and queries (13.5 %). According to Patient Health Questionnaire 9, 356 children had no depression (89 %), 32 children had mild depression (8 %), 11 children had moderate depression (2.75 %) & 356 children had moderately severe depression (0%).Progressive increase in score of Modified Overt Aggression Scale (MOAS) was noted as increase in duration of online class from 4-5 hours to > 7 hours, MOAS was from 6.8 ± 2.6 to 11.8 ± 3.1.

Conclusion: Though, majority of students prefer actual school-classes over online classes, considering the impact of the pandemic, a collaborative approach involving teachers, students, and parents can be initiated to make online teaching more meaningful & less stressful.

Keywords: Online learning, students, online classes, mental health

Introduction

Among the most important challenges created by COVID-19 is how to adapt a system of education built around physical schools. At its peak, more than 188 countries, encompassing around 91% of enrolled learners worldwide, closed their schools to try to contain the spread of the virus[1].

UNESCO recommends distance learning programs and open educational applications during school closure caused by COVID-19 so that schools and teachers use to teach their pupils and bound the interruption of education[2]. School time also raises social skills and awareness besides being fun for the children. There are economic, social and psychological repercussions on the life of students while they are away from the normal schedule of schools.

Lockdown due to COVID-19, forcibly moving educational activity to the online environment allows for flexibility in teaching and learning because courses are easily accessed. Despite the crisis, courses were transferred online at an astonishing and unprecedented speed.

The online learning environment varies profoundly from the traditional classroom situation when it comes to learner's motivation, satisfaction, and interaction[3].Present study was aimed to study impact of online learning on students' physical and mental health amidst covid19 pandemic in school at Islampur, Maharashtra, India.

Material and Methods

Present study was cross-sectional, observational study, conducted in departments of Psychiatry, Pediatrics& Obstetrics-Gynaecology, at Prakash Institute of Medical Sciences & Research, UrunIslampur, Sangli, Maharashtra, India. Study duration was of 1 year (December 2020 to December 2021). Study approval was obtained from institutional ethical committee.

Inclusion criteria

- Students of 11-15 years age, learning in 5^{th} to 10^{th} standard, who are attending online classes & had usage of smart phones more than 4 hours, willing to participate in study.

Exclusion criteria

- Prior mental or physical illness.
- Parents not willing to participate

Study was discussed with school principal and parents. Risks and benefits were explained to the school management and parents. Study was explained to children & parents in local language & written consent was taken for participation & study. 400 students satisfying study criteria were evaluated from Prakash Public School, UrunIslampur, SangliMaharashtra India.

Children were evaluated using Modified Overt Aggression Scale (MOAS)[4, 5] and Patient Health Questionnaire 9 (PHQ 9)[6]. Modified Overt Aggression Scale (MOAS), was developed to assess four types of aggressive behaviour: verbal aggression, aggression against property, auto aggression, physical aggression. This is a widely used measure that has been validated for use in both children and adults. It has been used as an outcome measure in a variety of intervention studies and as such is sensitive to change over short intervals.

Data was collected and compiled using Microsoft Excel, analysed using SPSS 23.0 version. Statistical analysis was done using descriptive statistics.

Results

In present study, majority of children were from 14-15 years age group (33.5 %) & 13-14 years age group (32.5 %). Boys (53 %) were marginally more than girls (47 %).Device used for online learning were mobile Phones (85.75 %), Computers (PC) (6.75 %), Laptops (4.75 %) & Tablets (2.75 %). Duration of online classes was 4-5 hours (69.5 %), 5-6 hours (22.25 %), 6-7 hours (6 %) &> 7 hours (2.25 %).

Table 1: General characteristics

Characteristics	Frequency	Percentage
Age group		
11-12	82	20.50%
12-13	124	31.00%
13-14	130	32.50%
14-15	134	33.50%
Gender		
Boys	212	53.00%
Girls	188	47.00%
Digital Platforms		
Zoom	239	59.75%
Google Classroom	129	32.25%
Google Hangouts	18	4.50%
Others	14	3.50%
Device used		
Mobile Phones	343	85.75%
Computers (PC)	27	6.75%
Laptops	19	4.75%
Tablets	11	2.75%
Duration of online classes (Hours)		
4-5	278	69.50%
5-6	89	22.25%
6-7	24	6.00%
> 7	9	2.25%

During study, common problems identified with online learning were poor connectivity (37.75 %), no supportive materials are provided (34 %), no opportunity for interaction (25.25 %), no guidance is given for online platform (23.75 %), lack of support (14.75 %), no clarification of doubts and queries (13.5 %), learning is teacher directed only (11.25 %) & learning is one-sided (9.75 %).

Table 2: Problems of online learning (n=408)

Problems	Frequency	Percentage
Poor connectivity	151	37.75%
No supportive materials are provided	136	34.00%
No opportunity for interaction	101	25.25%
No guidance is given for online platform	95	23.75%
Lack of support	59	14.75%
No clarification of doubts and queries	54	13.50%
Learning is teacher directed only	45	11.25%
Learning is one-sided	39	9.75%

According to Patient Health Questionnaire 9, 356 children had no depression (89 %), 32

children had mild depression (8 %), 11 children had moderate depression (2.75 %) 1child had moderately severe depression (0.25%)&none had Severe Depression (0%)

Table 3: Patient Health Questionnaire 9 (PHQ 9).

Total Raw Score	Severity of depressive disorder or episode	Frequency	Percentage
0-4	None	356	89.00%
5-9	Mild	32	8.00%
10-14	Moderate	11	2.75%
15-19	Moderately severe	1	0.25%
20-27	Severe	0	0.00%

Progressive increase in score of Modified Overt Aggression Scale (MOAS) was noted as increase in duration of online class from 4-5 hours to > 7 hours, MOAS was from 6.8 ± 2.6 to 11.8 ± 3.1.

Table 4: Modified Overt Aggression Scale (MOAS)

Duration of online classes (Hours)	Modified Overt Aggression Scale (MOAS)
4-5	6.8 ± 2.6
5-6	8.5 ± 2.8
6-7	10.1 ± 2.9
> 7	11.8 ± 3.1

Discussion

During the global outbreak of COVID-19, great emphasis has been laid to ensure continuity of educational instruction to prevent students from losing an academic year. As a result, education through digital means or online education has become the norm of the day. The use of suitable and relevant pedagogy for online education may depend on the expertise and exposure to information and communications technology (ICT) for both educators and the learners. Broadly identified challenges with e-learning are accessibility, affordability, flexibility, learning pedagogy, life-long learning and educational policy[7].

Even among the general negative feedback, few students reported they were more attentive in online classes, probably owing to favourable situations at home. This highlights how learning environments can influence the quality of online learning and teaching[8].

Almahasees Z *et al.*,[9] scrutinized the perception of the faculty and students on online learning. The study showed that online education is less effective than online classes. The students of online learning face several challenges due to the struggle to complete adaptation to online courses and the lack of interaction between students and their tutors. E-learning platforms motivate student-centered learning, and they are easily adjustable during abrupt crises, such as COVID-19.

In study by Sharma M *et al.*,[10] significant effect of online classes was found on the mental and physical health of students, 57.3% of population had moderate stress, 32% of population had mild depression, 48% of population had mild neck pain, and 41.3% of population moderate back pain. Students' mental and physical health has been affected as a result of longer duration spent online on laptops and phones for classes.

The global outbreak of COVID-19 resulted in closures of sports complexes and venues, limiting active participation in sports activities subjecting individuals to be less physically active with more screen time, and consuming unhealthy diets, which may lead to a health issue. The home confinement of children and adolescents is associated with uncertainty and anxiety which is attributable to disruption in their education, physical activities and opportunities for socialization[11].

Absence of structured setting of the school for a long duration result in disruption in routine, boredom and lack of innovative ideas for engaging in various academic and extracurricular activities. Some children have expressed lower levels of affect for not being able to play outdoors, not meeting friends and not engaging in the in-person school activities[12, 13].

Routine classroom activities provide a central role in helping students acquire social skills that have important implications for their future personal and professional growth[14]. The interaction with teachers and other students is found to be essential for the development of positive self-esteem, self-confidence, and a sense of identity. It also improves students' ability to work in groups in collaborative and productive ways. There is significant evidence showing that social skills are positively associated with cognitive skills and school achievement[15].

The lesson learnt from the COVID-19 pandemic is that teachers and students/ learners should be oriented on use of different online educational tools. Further exploration and investigation on effective pedagogy for online teaching and learning is an area for research. Need for developing tools for authentic assessments and timely feedback is found to be another area of study[16].

Proper training of educators for the digital skills and improved student-teacher interaction must be conducted. Necessary steps must be taken to train all stakeholders of education on online learning platform. For disadvantaged students, availability of digital infrastructure with proper internet availability and access to gadgets must be ensured to avoid any disruption to their study. Due to the situation in Covid-19, many students are likely to suffer from stress, anxiety, and depression, so it is necessary to provide emotional support to students[17].

The longer duration of using laptops and phones to attend online classes is affecting their mental and physical health. Maintaining proper posture and understanding the impact of the long duration exposure to electronic devices is the need of the hour. Although it may not be possible to avoid the exposure completely in the current times, incorporating simple exercises and postural advices in the daily routine can prevent from long-term adverse effects.

Conclusion

Online learning is considered as future learning process and this platform has a potential of overall change in pedagogy of teaching learning in the modern world. Though, majority of students prefer actual school-classes over online classes, considering the impact of the pandemic, a collaborative approach involving teachers, students, and parents can be initiated to make online teaching more meaningful & less stressful.

Parental support & constant reassurance to the students can be of great help for their mental wellbeing.

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