



“A STUDY ON PERCEPTION AND IMPACT OF ONLINE CLASSES DURING COVID-19 PANDEMIC IN SCHOOL-GOING CHILDREN OF AGE 10 TO 15 YEARS AND THEIR PARENTS IN ELURU.”

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ABSTRACT **Background:** The World Health Organization (WHO) declared COVID-19 as a pandemic on 11 March 2020. Due to this outbreak, 191 countries have closed their schools, in order to prevent the spread of the virus. The prolonged shutdown of schools, transformed the conventional classrooms into online classes which helped in reducing the learning gap. Students can now get subject knowledge, clear their doubts, quickly share study material, discuss with their peers and observe their academic progress in online classes. On the other hand it has impact on physical, psychological health leading to behavioural changes in children. So our study aimed to find these changes in school children. **Objective:** To study the impact of online classes on physical, psychological and behavioural changes in school-going children. **Study design:** Online survey based cross-sectional observational study. **Participants:** Children between the ages 10 and 15 who are attending online classes at different schools. **Methodology:** A two staged simple random sampling was done. At first stage 4 schools were selected randomly. At second stage children from class 6-10th were selected randomly and a validated questionnaire was circulated through WhatsApp or messages. After collecting all the data, data was checked and analysed with the help of spreadsheet and Microsoft excel. **Results:** Out of 122 respondents, 74(60.7%) have subjective feeling of abnormal weight gain. 20% of students complained of frequent headaches and increase in power of refractory errors or newly diagnosed with refractory error, 62.3% parents feel there is increase screen time, 73% of parents and 63% of children feel offline classes are more preferable. 11.5% have sleep disturbances, 40.2% have disturbances in eating habits and 38.5% have behavioural alterations. **Conclusion:** Our study demonstrated significant proportion has impact on physical, psychological health leading to behavioural alterations and there is statistically significant increase in BMI. These findings highlight the importance of promoting child health and integration of movement behaviours along with control of pandemic.

KEYWORDS : Online classes, Covid-19, physical, psychological health and behavioural alterations.

INTRODUCTION:

COVID-19 was first recognized in December 2019 in Wuhan, China, and spread rapidly all over the world to become an economic and humanitarian crisis¹. On 11th March 2020, The World Health Organization (WHO) declared COVID-19 as a pandemic. Nearly every element of life has been impacted by the COVID-19 health crisis. The education sector is experiencing an astonishing double shock as a result of this outbreak. Interim school closures and also exposing the vulnerability of education systems around the world.

Globally, 191 countries have closed all their schools, affecting over 1.5 billion students from pre-primary to tertiary education 90 percent of the world's student population has been affected due to the pandemic. 247 million students enrolled in elementary and secondary schools in India have been impacted by the closure of 1.5 million school in this pandemic. In addition, there are over 6 million children were already out of school even before the COVID-19 crisis began.²

Due to contagious nature of disease, prolonged closure of schools forced students to take online classes instead of traditional classroom teaching. These were the only resources used in the continual learning processes during the pandemic. Information technology was used for both teaching and grading students, which reduced the learning gap that resulted from the lockdown. In digital learning, students can now learn about the subject, get help from mentors to clarify their doubts, instantly share study materials, get immediate feedback, be more adaptable, interact with their classmates, and track their academic progress.

On the other hand, it's unclear what impact the sudden shift to online education will have. Most of the already enrolled students don't have access to the necessary materials, which has a significant negative impact on their ability to participate in online classes. There are significant socioeconomic differences in who can access the Internet, Computer ownership ranges from 2 to 28 percent⁶. Unquestionably, the severe lockdown had a negative impact on many poor and marginalised families income and earning potential⁶. The undeniable effect of stringent lockdown has decreased the income and earning

capacity of many poor and marginalized families. Along with this economic burden, online classes & prolonged lockdown measures also have impact on physical, psychological health leading to behavioural changes in children. So our study aimed to find these changes in school children.

Aims:

- To study the impact of online classes on physical, psychological and behavioural changes in school-going children.

Objectives:

- To explore how students perceive online learning and the problems they encounter.
- To study the advantages and disadvantages of online classes and how it affects parents.

MATERIAL AND METHODS:

The study is an online survey based cross-sectional observational study conducted in schools belonging to Eluru town during the period of 16th August 2021 to 15th February 2022. Children between 10-15 years were selected during this study.

Inclusion criteria:

- Children between the ages 10 and 15 who are attending online classes at different schools.

Exclusion criteria:

- Children who have discontinued in the middle of academic year.
- Children with his or her sibling already enrolled in study

Methodology:

After obtaining ethical committee approval. A two staged simple random sampling was done. At first stage 4 schools were selected randomly. At second stage children from class 6-10th were selected randomly and expert committee validated questionnaire will be circulated through WhatsApp or messages. Responses will be checked for doubling of data or any missing data and after contacting participants, corrections will be done accordingly. The survey questionnaire was in English. Consent was taken from principal or

managing director of schools. The survey message clearly stated that the participants were free not to participate and participation in the survey indicates implied consent from participants.

Data Collection And Analysis:

After selecting schools by simple random sampling. I have done my field work and contacted the corresponding principal and managing director of school. I explained the objective of my research with the respondents very clearly and honestly. After taking consent from respective authorities, I have contacted participants through WhatsApp groups or via phone call and explained regarding the research and circulated a validated questionnaire to the participants. Questionnaire consists of two sections. First section to be filled by parent, In first section I have collected data evaluating demographic information; impact of online classes on physical, psychological and behavioural changes in children; perception of online classes by parent. Second section to be filled by children or by parent after asking children. After collecting all the data, data was checked and analysed with descriptive statistics the help of spreadsheet, Microsoft excel 2013 and for mean BMI with paired t test with help of SPSS version 20.0.

RESULTS:

A total of 122 students from 4 schools have responded for the study. In this section, we have analysed their demographic data, impact on physical, psychological and behavioural changes in children and also perception of online classes by both parents and children

Demographic profile of respondent students: (Table.1)

Out of 122 respondents, 34(27.8%) children were aged 11 years, 18(14.8%) children were aged 12 and 13 years in each group, 14(11.4%) children were aged 10 years, 12(9.8%) children were aged 15 years, 2(1.7%) children were aged 16 years. Around 62(50.8%) were males and 60(49.2%) were females. Around 82(67.2%) were belonging to Hindu religion, 29(23.8%) were belonging to Christians, 8(6.5%) were belonging to Muslims and 3 students belong to other religion. Among 122 respondents 91(74.6%) belonging to Eluru town and 31 (25.4%) were from nearby villages.

Table1: Demographic data of respondents

Demographic data		
Age, n (%)	11 years	34(27.8%)
	12 years	18(14.8%)
	13 years	18(14.8%)
	14 years	14(11.4%)
	15 years	12(9.8%)
	16 years	2(1.7%)
Gender, n (%)	Male	62(50.8%)
	Female	60(49.2%)
Religion, n (%)	Hindu	82(67.2%)
	Christians	29(23.8%)
	Muslims	8(6.5%)
	Others	3(2.4%)
Location, n (%)	Eluru	91(74.6%)
	Dendulru	11(9%)
	Somavarappadu	14(11.5%)
	Gopannapalem	4(3.3%)
	Others	2(1.7%)
Education, n (%)	6 th class	27(22.1%)
	7 th class	29(23.8%)
	8 th class	22(18%)
	9 th class	21(17.2%)
	10 th class	23(18.9%)

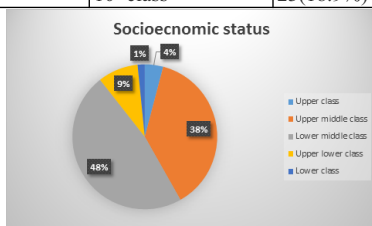


Figure 1: Socioeconomic status of respondents

Socio-economic status of family of respondent students: (Figure 1)

Out of 122 families, 58(47.6%) belonging to lower middle class,

46(37.7%) belonging to upper middle class, 11(9%) belonging to upper lower class, 5(4.1%) belonging to upper class and only 2(1.6%) belonging to lower class according to modified Kuppuswamy scale 2019. Only 12(9.8%) of fathers and 8(6.5%) of mothers were educated less than 10th standard.

Impact on physical, psychological and behavioural changes in children Table2

Out of 122 respondents, 74(60.7%) have subjective feeling of abnormal weight gain, 32(26.2%) have felt there may be abnormal weight gain and 16(13.1%) have not observed any weight gain. Out of 122 respondents only 54 students responded to both documented height and weight before and during covid-19 pandemic. In those 54 students, Mean Body mass index (BMI) before covid-19 pandemic is 19.01 and mean BMI at present is 20.83, p value of 0.00236(<0.05) using paired t test.

Out of 122 respondents, 24 students complained of frequent headaches, 24 students complained of headache occasionally and 74 students have no complaints of headache. 26 students have observed increase in power of refractory errors or newly diagnosed with refractory error and 96 students have no complaints of refractory errors. 74 students have physical activity less than 30 minutes, 16 students have 30-60 minutes, and only 28 students have physical activity more than one hour. Out of which only 28 students play outdoor sports regularly and 56 students have physical activity inside house regularly.

When compared to before covid-19 pandemic, 76 parents observed there is increase screen time even in free time apart from online classes, 20 parents observed there is increase in screen time sometimes. 43 observed there is increase in screen time during night time before sleep, 19 observed there is increase in screen time during night time before sleep sometimes.

Table2: Impact of online classes on

Impact of online classes on	n value	Percentage
Physical health		
Subjective feeling of obesity	74	60.7%
Mean BMI before pandemic	54	19.01*
Mean BMI during pandemic	54	20.83*
Mean BMI	1.459***	0.002362**
Frequent headaches	24	19.67%
Refractory errors	26	21.3%
Physical activity		
<30 minutes	64	52.46%
30-60 minutes	30	24.59%
>60 minutes	28	22.95%
Increased Screen time(>1 hour)		
During free time	76	62.29%
During night time	43	35.24%
Psychological		
Feeling angry/ irritable	33	27.04%
Feeling stubbornness	30	24.59%
Feeling sad/ bored	39	31.97%
Behavioural alterations		
Sleep disturbances		
Everyday	14	11.48%
Occasionally	40	32.79%
No disturbances	68	55.73%
Eating habit disturbances		
Over eating	25	20.49%
Eats less	24	19.68%
No change	73	59.83%

(* = Value; ** = P-value; *** = Standard Deviation)

Parent perception of online classes: 89(73%) feel offline classes are more preferable, of which 42.7% prefer offline classes with help of audio-visual aids. Only 33(27%) want to continue online classes. (Shown in Figure2)

When parents were asked about advantages and disadvantages of online classes (Shown in Figure3&4). They mentioned Advantages like no need to meet others, do not have to travel, equal chance of participation in discussion, no chance of bullying, can go back to

recording again, cost effective way of learning.

They also mentioned various disadvantages like strain on eyes, headache, extra expenses to gadgets and internet, poor interaction with peers, poor learning of practical aspects, and face difficulties with internet connectivity.

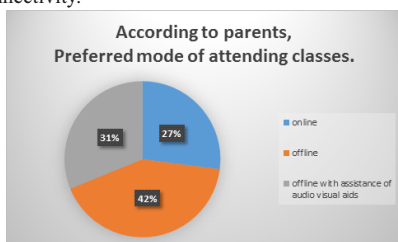


Figure 2: Preferred mode of attending classes according to parents

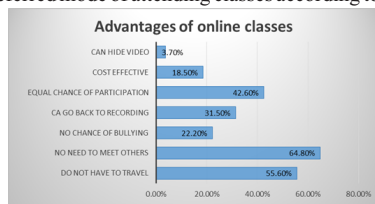


Figure3: Advantages of online classes.

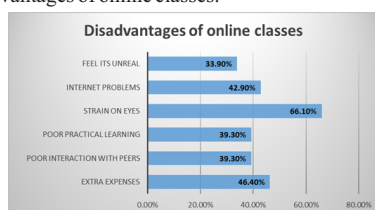


Figure4: Disadvantages of online classes.

Children perception for online classes

45(36.9%) children want to continue with online classes. 77(63.1%) feel offline classes are more preferable, of which 39% want offline classes with help of audio visual aids. 41(33.6%) children not able to understand better through online classes. 89 (72.35%) children able to feel online classes as good to very good.

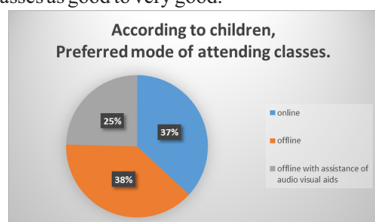


Figure5: Preferred mode of attending classes according to children

DISCUSSION:

The present study is a survey based cross sectional observational study we evaluated socio-demographic factors along with impact of online classes on physical psychological behavioural changes in children and perception of online classes by parents and their children

Our present study respondents where almost 50% where males and females each whereas in a similar study by Khan, M.A et al.,³ there were 75.3% males and 24.7% females. In the same study there were 29.1 % Hindus 70.1 % Muslims and 0.3% Christian. Whereas in our study 67.2% were Hindus 23.8% were Christians 6.5% were Muslims and 2.5% were from other religions.

In our study during covid-19 pandemic period, 52.5% of children were having physical activity of less than 30 minutes. A larger study by Francisco et al.,⁹ also have similar finding i.e., almost 53% of children are experiencing physical activity of less than 30 minutes.

In our study around 60.7% respondents have subjective feeling of obesity, 19.6% children have complaints of frequent headache. In a study by Shivi Pathak¹⁰, reported that about 90% of children have experienced obesity and 60-80% children were irritable and

restlessness.

In present study about 11.4% have sleeping disturbances, 40.1% have disturbances in eating habits and around 24-32% children are having behavioural abnormalities like feeling bored, irritable, stubbornness, arguing with family members frequently, sad, lonely, frustrating. Similarly in a study by Francisco et al., have observed 11.4-17.1% have sleeping disturbances, around 9.3-23.2% children are having disturbances in eating habits and 10.7-40.4% of children are having behavioural abnormalities.

In a study by Sandeep grover et. al.,² have mentioned various advantages like, do not have to travel(43.9%), do not have dress up(31.5%), no need to meet others(27.7%), equal chance of participation in discussion(22.5%) and various disadvantages like strain on eyes(69.9%), poor interaction with peers(36.7%), poor learning of practical aspects(45.0%).

Limitations:

As the most of respondents were from middle and upper class socioeconomic status, lower class children may have additional responsibilities, especially adolescent girls who have to involve in household chores.

CONCLUSION:

We know that because of covid-19 pandemic, nations have applied various changes in education system like changing convectional class room teaching into conducting online classes. This study analysed the perceptions and impact on children because of online classes and lockdown restrictions due to COVID-19 pandemic, demonstrating significant proportion has impact on physical, psychological health leading to behavioural alterations. These findings highlight the importance of promoting child health and integration of movement behaviours along with control of pandemic. Government also should focus on informing strategies to mitigate potential harm during pandemic.

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