



A STUDY ON HEALTH ISSUES CAUSED BY ONLINE CLASSES AT CHENNAI REGION

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INTRODUCTION

An **online class** is a course conducted over the Internet. They are generally conducted through a learning management system, in which students can view their course syllabus and academic progress, as well as communicate with fellow students and their course instructor. **They** are generally self-paced, allowing for greater flexibility in completing coursework.

The year 2020 was hit by a deadly pandemic called COVID-19 and no one was prepared for it. Every sector in the entire world suffered major setbacks. In the education industry everyone resorted to online classes and online learning. This was the best solution as every educational institutions were closed.

Students began learning through online classes. The hours were limited at first and gradually increased as days went by. Everyone thought that online classes were the best alternate but it had some drawbacks to it. Both students and teachers suffered the impact of online classes mentally and physically. Of course, there is no denying the fact that online classes were the only means of teaching students during the pandemic.

Online classes had both up and downsides to it. Students began learning in the comfort of their own homes as well as teachers were comfortable too. But what if the downtrodden students had no smartphones or laptops or internet connections. This was one among the many difficulties faced by students and teachers.

OBJECTIVES

- 1.To study the impact online classes had on the physical health of students and teachers.
2. To study the impact online classes had on the mental health of students and teachers.

SCOPE OF STUDY

1. Online classes has a major contribution in the physical and mental health of students and teachers alike.
2. This study helps in studying the physical and mental difficulties faced by students and teachers.
3. This will help them cope with the new learning and teaching methods.

REVIEW OF LITERATURE

- The rise of online learning during the COVID-19 pandemic- www.webforum.org
- How effective is online learning? -www.edweek.org
- Online Learning- The medium of tomorrow- The Hindu dated 16 may 2020
- Online Learning- www.theguardian.com
- Online Teaching- Newspaper- DAWN.COM
- Issues facing online education- Hindustan times dated 17 august 2020
- Online Learning- A panacea in the time of COVID-19 crisis- journals.sagepub.com

RESEARCH METHODOLOGY

Research methodology simply refers to the practical “how” of any given piece of research. More specifically, it’s about **how** a researcher **systematically designs a study** to ensure valid and reliable results that address the research aims and objectives. In other words Research methodology is the specific procedures or techniques used to identify, select, process, and analyse information about a topic. In a research paper, the methodology section allows the reader to critically evaluate a study's overall validity and reliability

ANALYSIS USING KARL PEARSON’S CORRELATION:

Correlation analysis is the statistical tool used to measure the degree to which two variables are linearly related to each other. Correlation measures the degree of association between two variables. The Pearson product-moment correlation coefficient is a measure of the strength and direction of association that exists between two variables measured on at least an interval scale. It is denoted by the symbol r.

$$r = \frac{N\sum XY - \sum X\sum Y}{\sqrt{N\sum X^2 - (\sum X)^2}\sqrt{N\sum Y^2 - (\sum Y)^2}}$$



CHI- SQUARE TEST I – (Ψ²)

- It is a measure of the difference between the observed and expected frequencies of the outcomes of a set of events or variables.
• It depends on the size of the difference between actual and observed values, the degrees of freedom, and the samples size.
• It can be used to test whether two variables are related or independent from one another or to test the goodness-of-fit between an observed distribution and a theoretical distribution of frequencies.

χc^2 = Σ (Oi - Ei)^2 / Ei

c=Degrees of freedom

O=Observed value(s)

E=Expected value(s)

NULL HYPOTHESIS

The null hypothesis of the Chi-Square test is that no relationship exists on the categorical variables in the population; they are independent.

ALTERNATE HYPOTHESIS

Alternative hypothesis assumes that there is an association between the two variables. If the observed chi-square test statistic is greater than the critical value, the null hypothesis can be rejected.

ONE WAY ANOVA

The ANOVA tests the null hypothesis that samples in two or more groups are drawn from populations with the same mean values. To do this, two estimates are made of the population variance. The ANOVA produces an F-statistic, the ratio of the variance calculated among the means to the variance within the samples. If the group means are drawn from populations with the same mean values, the variance between the group means should be lower than the variance of the samples, following the central limit theorem. A higher ratio therefore implies that the samples were drawn from populations with different mean values.

DATA ANALYSIS AND INTERPRETATION

CHI- SQUARE TEST I – (ψ²)

Chi-square is the sum of the squared difference observed (o) and the expected (e) data (or the deviation, d), divided by the expected data in all possible categories.

Null hypothesis (Ho):

There is no relationship between online classes mentally frustrates and Online classes creates a sense of isolation.

Alternate hypothesis (H1):

There is relationship between online classes mentally frustrates and Online classes creates a sense of isolation.

Case Processing Summary

Table with 7 columns: Cases, Valid, Missing, Total, N, Percent. Row 1: Online classes mentally frustrate you * Online classes creates a sense of isolation. Values: Valid N=105, Percent=99.1%; Missing N=1, Percent=0.9%; Total N=106, Percent=100.0%.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	282.841 ^a	16	.000
Likelihood Ratio	225.357	16	.000
Linear-by-Linear Association	93.758	1	.000
N of Valid Cases	105		

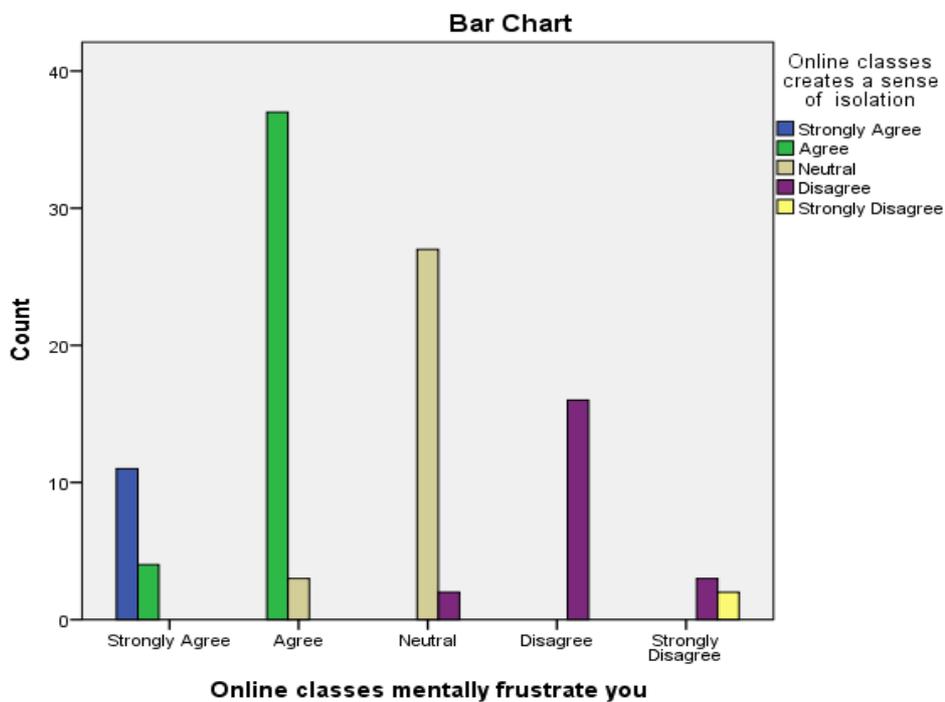
a. 17 cells (68.0%) have expected count less than 5. The minimum expected count is .10.

Online classes mentally frustrate you * Online classes creates a sense of isolation Crosstabulation

			Online classes create a sense of isolation					Total
			Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Online classes mentally frustrate you	Strongly Agree	Count	11	4	0	0	0	15
		% within Online classes mentally frustrate you	73.3%	26.7%	0.0%	0.0%	0.0%	100.0%
		% within Online classes creates a sense of isolation	100.0%	9.8%	0.0%	0.0%	0.0%	14.3%
		% of Total	10.5%	3.8%	0.0%	0.0%	0.0%	14.3%
	Agree	Count	0	37	3	0	0	40
		% within Online classes mentally frustrate you	0.0%	92.5%	7.5%	0.0%	0.0%	100.0%
		% within Online classes creates a sense of isolation	0.0%	90.2%	10.0%	0.0%	0.0%	38.1%
		% of Total	0.0%	35.2%	2.9%	0.0%	0.0%	38.1%
	Neutral	Count	0	0	27	2	0	29
		% within Online classes mentally frustrate you	0.0%	0.0%	93.1%	6.9%	0.0%	100.0%
		% within Online classes creates a sense of isolation	0.0%	0.0%	90.0%	9.5%	0.0%	27.6%
		% of Total	0.0%	0.0%	25.7%	1.9%	0.0%	27.6%
	Disagree	Count	0	0	0	16	0	16
		% within Online classes mentally frustrate you	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
		% within Online classes creates a sense of isolation	0.0%	0.0%	0.0%	76.2%	0.0%	15.2%
		% of Total	0.0%	0.0%	0.0%	15.2%	0.0%	15.2%
	Strongly Disagree	Count	0	0	0	3	2	5
		% within Online classes mentally frustrate you	0.0%	0.0%	0.0%	60.0%	40.0%	100.0%
% within Online classes creates a sense of isolation		0.0%	0.0%	0.0%	14.3%	100.0%	4.8%	



	% of Total	0.0%	0.0%	0.0%	2.9%	1.9%	4.8%
Total	Count	11	41	30	21	2	105
	% within Online classes mentally frustrate you	10.5%	39.0%	28.6%	20.0%	1.9%	100.0%
	% within Online classes creates a sense of isolation	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	% of Total	10.5%	39.0%	28.6%	20.0%	1.9%	100.0%



$$\text{Degree of Freedom} = (5-1) * (5-1) = 4*4 = 16$$

Calculated value = 282.84

Tabulated value = 26.296

Z = Z cal > Z tab

Z = 282.84 > 26.296

Hence, the Alternate hypothesis [H1] is accepted.

INFERENCE: Since the calculated value is greater than the tabulated value, we accept the alternate hypothesis and hence there is a relationship between online classes mentally frustrates and online classes creates a sense of isolation.



ONE-WAY ANOVA CLASSIFICATION

Null hypothesis (Ho): There is a significance difference between number of online classes hours in a day and online classes leads to obesity due to lack of physical activities.

Alternate hypothesis (H1): There is no significance difference between number of online classes hours in a day and online classes leads to obesity due to lack of physical activities.

Descriptives

How many hours in a day do you take online classes?

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Strongly Agree	13	1.00	.000	.000	1.00	1.00	1	1
Agree	53	1.64	.484	.067	1.51	1.77	1	2
Neutral	26	2.31	.471	.092	2.12	2.50	2	3
Disagree	13	3.00	.000	.000	3.00	3.00	3	3
Total	105	1.90	.706	.069	1.76	2.03	1	3

Test of Homogeneity of Variances

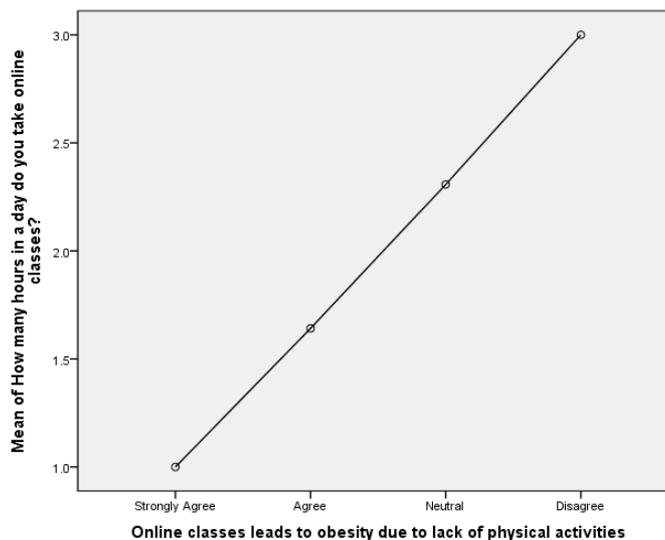
How many hours in a day do you take online classes?

Levene Statistic	df1	df2	Sig.
74.249	3	101	.000

ANOVA

How many hours in a day do you take online classes?

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	34.120	3	11.373	64.800	.000
Within Groups	17.727	101	.176		
Total	51.848	104			



Tabulated value = 2.70

Calculated value= 64.800



F = F cal > F tab F = 64.800 > 2.70

Hence, the alternative hypothesis [H1] is accepted.

INFERENCE:

Since the calculated value is greater than the tabulated value, we accept the alternate hypothesis and hence there is no significance difference between number of online classes hours in a day and online classes leads to obesity due to lack of physical activities.

ANALYSIS USING KARL PEARSON’S CORRELATION

Correlation analysis is the statistical tool used to measure the degree to which two variables are linearly related to each other. Correlation measures the degree of association between two variables.

Null hypothesis (H0): There is positive relationship between prolonged use of computers in online classes causes muscle and joint pains & online classes causes back problems due to continuous sitting for long periods of time.

Alternate hypothesis (H1): There is negative relationship between prolonged use of computers in online classes causes muscle and joint pains & online classes causes back problems due to continuous sitting for long periods of time.

Correlations			
		Prolonged use of computers in online classes causes muscle and joint pains	Online classes cause back problems due to continuous sitting for long periods of time
Prolonged use of computers in online classes causes muscle and joint pains	Pearson Correlation	1	.931**
	Sig. (2-tailed)		.000
	N	105	105
Online classes cause back problems due to continuous sitting for long periods of time	Pearson Correlation	.931**	1
	Sig. (2-tailed)	.000	
	N	105	105

** . Correlation is significant at the 0.01 level (2-tailed).

$$r = \frac{N\sum XY - \sum X\sum Y}{\sqrt{N\sum X^2 - (\sum X)^2} \sqrt{N\sum Y^2 - (\sum Y)^2}}$$

r = 0.931

INFERENCE: Since r is positive, there is positive relationship between prolonged use of computers in online classes causes muscle and joint pains & online classes causes back problems due to continuous sitting for long periods of time.

FINDINGS

1. Most of the respondents are between the age group 30-40 years.
2. Most of the respondents are male.
3. Most of the respondents take 3-4 hours of online classes
4. Most of the respondents agree that online classes mentally frustrate them.
5. Most of the respondents agree that online classes created a sense of isolation.
6. Most of the respondents agree that online classes led to digital eye strain.
7. Most of the respondents agree that online classes caused virtual learning fatigue.
8. Most of the respondents agree that online classes had a negative impact on their sleep.
9. Most of the respondents agree that online classes increased stress and anxiety.
10. Most of the respondents agree that online classes divert to other websites.
11. Most of the respondents agree that online classes caused chronic headaches and back problems.



SUGGESTIONS

1. The duration of the online classes can be revised.
2. Online classes can be held in alternate days instead of every day.
3. It is quintessential that everyone has a nice and peaceful family time to reduce stress.

CONCLUSION

It is observed that though online classes are the only alternative during the pandemic it has adverse effects on both the students and teachers. Parents should support and help their children in coping with this new method of learning. Similarly, the teacher's families should also support them so that they don't feel stressed or isolated. In short, when hard times like these change the normal ways, we operate it is important that we stick together as a family and provide the necessary mental and emotional support to our loved ones.

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