



Article Type: Research Article
Article Ref. No.: 20113000432TF
<https://doi.org/10.37948/ensemble-2021-sp1-a018>



THE IMPACT OF COVID-19 PANDEMIC ON EDUCATION SECTOR: A CASE STUDY FROM MIZORAM, INDIA

Brototi Biswas¹✉, Aneesah Rahaman²

Abstract:

The outbreak of COVID-19 has drastically disrupted the socio-economic fabric of human society. Not a single sector has been left unscathed from its impact. The education sector has been severely impacted by the same, though the significance level is not the same throughout India. Varied nature of repercussion from the educational sector has been reported based on several factors. Based on the primary survey, the present research paper is an attempt to empirically understand the level of influence of COVID -19 on the academic sector of a part of Mizoram state of India. The survey encompasses both the student (100 respondents) and teacher fraternity (100 respondents) of HS school level, Colleges, technical colleges, and the Central University of Mizoram.

Through its statistical analysis, the study finds out the effects of COVID-19 in the education sector and finds out the adaptive strategic measures to deal with this problem in the study area. Five hypotheses have been taken, and data has been analyzed on SPSS software (V.22) to fulfill the objective. This study's results reveal that the pandemic has severely hit the academic sector due to the lack of proficiency in online teaching mode due to the technological and infrastructural lacuna in remote mountainous locations.

However, the study also empirically proves that the pandemic has raised technological awareness levels among various levels of the academic sector, and with proper technological planning in the study area, the region and similar remote locations can access quality education through online-distant mode.

Article History: Submitted on 30 Nov 2020 | Accepted on 9 February 2021 | Published online on 18 April 2021

Keywords: Coronavirus, Lockdown, students, online platform, familiarity

1.0 Introduction:

The pandemic disease Corona Virus (COVID-19), first observed in the most populous country China in 2019, has now become a global health disaster, according to L.L. Ren et al. (2020) Zi et al. (2020). COVID-19 is comprised of three words and one number such as "CO" means corona, "VI" means a virus, "D" means disease, and "19" means the year of occurrence of this virus, i.e., 2019 as rendered by Shereen et al. (2020). The disease is a kind of pneumonia with a wide-reaching outbreak since the SARS (Severe Acute Respiratory Syndrome) outburst in 2003. As per WHO report (World Health Organization, 2019), the virus was found in the last of December

1 [Author] ✉ [Corresponding Author] Associate Professor, Department of Geography & RM, Mizoram University, Aizawl, INDIA. E-mail: brototibiswas@yahoo.co.in

2 [Author] Research Scholar, Department of Geography, University of Madras, Tamil Nadu, INDIA



2019 with the mass of pneumonia cases of unfamiliar causes related to the market of seafood and animals shop in the city of Wuhan, Hubei Province. The WHO (World Health Organization, 2019) proclaimed the outburst of COVID-19 as an international responsibility on 30 January 2020. Besides this, COVID-19 is a beta virus and almost similar to SARS, spread through the medium of bats to the human body, claimed by Kumar et al. (2020). As humankind is a social being, social interaction and social relationships are necessary to survive life. The novel coronavirus and its impacts threaten the whole community with the social distance and isolation measurements, as opined by Singh et al. (2020) and Bhat et al. (2020). According to Javid et al. (2020), COVID-19 affects mental and physical health while disrupting the economy and society as a whole.

In India, as in the rest of the world, the outspread has been declared as an epidemic. Due to the impact of the epidemic, all the states and Union Territories had to shut down their social and economic activities - educational institutions, transport, and communications, commercial field, etc. from 22 March 2020 to control the outspread of COVID-19. The complete lockdown was extended in several phases - 24 March to 14 April 2020, 15 April to 03 May 2020, 4th to 17 May, and 18th to 31 May 2020. Although the lockdown has affected all the sectors of the socio-economic sphere, albeit it was the children and senior citizen who were affected the most, especially senior citizens are having co-morbidity concerning several health issues claimed by UN Policy Report (2020), Bhattacharya et al. (2020), Chakraborty et al. (2020) and Jena et al. (2020). In a developing country like India, where the education system and technological reach in every corner are already in poor condition, the role of the virus has brought out the pitiful state in many regions; according to Nicola et al. (2020), it has been noticed that the entire education system from pre-school level to tertiary level got affected by the coronavirus. About 100 nations ordered the closure of their educational organizations, affecting almost 900 million students claimed by Catrin et al. (2020) and Haleem et al. (2020) have been affected due to this shutdown of educational organizations.

The Online mode might be quite efficient in urban areas with proper infrastructural facilities and technology literate population; however, its efficiency in remote rural areas is debatable owing to lack of electricity, poor internet connection, lack of online portable devices, etc. The present study focuses on the difficulties generated by the COVID-19 in the study area's society, particularly the academic sector. The study delves into the academic sector's preparedness to deal with such kind of emergency in the study area. This study aims to find out the effects of COVID-19 in the education sector and find out the adaptive strategic measures to deal with this problem in the Serchhip Block of Mizoram.

2.0 Study Area:

The Indian state of Mizoram is situated in the northeastern part of the Himalayan Mountain. The state is a part of the Purvanchal region. Serchhip Rural Development Block (Fig. 1) is situated in the Serchhip district of Mizoram. Geographically the study area lies between 23°18'36" N to 92°51'00" E, and 23°31'01" N to 92°85'02" E. According to the Census of India, 2011 the total population is about 44242, of which 15825 is rural, and 28417 is urban population. The region is a hilly mountainous region. Due to the moist tropical location, the climate of the study area is moderate with long wet mild summer, short winter, and heavy precipitation.

3.0 Database and Methodology:

A sample size of 200 respondents was taken comprising of students (100), and teachers (100) to fulfill the aim of the present study. The respondents encompassed 4 specific faculties such as

Science, Arts, Commerce, and others (technical); and belonged to the different age group of 14-16, 17-19, 20-22, 23-25 for students, and 25-35, 35-45, 45-55, 55 and above of teachers. The respondents have been selected from various educational organizations - such as Higher Secondary School, colleges, technical colleges, and Mizoram University. All the institutions do not belong to the study area; however, the respondents attached to these institutes belong to the study area. The present research has been done based on primary data with the help of online modes such as WhatsApp, and Google form questionnaire survey. A stratified random sampling technique based on the type of respondents, their age group, and faculty was performed with the help of 16 types of questions. Various hypotheses, as detailed in the discussion, were based on the questions framed with a four-point scale, with 1 being the least, and 4 being extremely (based on the meaning of the question). The hypothesis taken helped in fulfilling the objectives of the study. ANOVA, Chi-square test, t-test, and frequency distribution has been done on the SPSS (v. 22) platform.

3.1 Research Hypothesis

Five hypotheses have been taken both for the students and teachers, which are -

Hypothesis 1:

H₀: There is no significant difference in the level of familiarity of software across gender.

H₁: There is a significant difference in the level of familiarity of software across gender.

Hypothesis 2:

H₀: There is no significant difference in the level of willingness between age groups.

H₁: There is a significant difference in the level of willingness between age groups.

Hypothesis 3:

H₀: There is no significant difference in the familiarity and age groups.

H₁: There is a significant difference in the familiarity and age groups.

Hypothesis 4:

H₀: There is no significant difference in the preference for mode of teaching across age groups.

H₁: There is a significant difference in the preference for mode of teaching across age groups.

Hypothesis 5:

H₀: There is no significant difference in the level of knowledge about online teaching before and after the pandemic.

H₁: There is a significant difference in the level of knowledge about online teaching before and after the pandemic.

As detailed in the discussion, various hypotheses were based on the questions framed with a four-point scale, with '1' being the least and '4' being extreme (based on the meaning of the question). The hypothesis taken helped in fulfilling the objectives of the study.

4.0 Results and Discussion:

As the study area is situated in a remote area, internet facility is the major problem which is faced by both the teachers and students. In general, the study area faced several problems owing to the online teaching mode as a mandatory step towards curtailing the spread of the deadly COVID-19 virus. The major problems faced were - poor internet connection, inability to attend practical classes, lack of interactive class, difficulty to access the class notes or materials for online teaching, and submission of assignments. Owing to lack of internet connectivity and a general lack of online teaching experience, it is challenging for both the teacher and students to attend the practical classes through online teaching. The study area is backward concerning

both technological and economic development lacks both the hardware (mobile phones/computers/laptops) and software (technological know-how and continuous power supply), which hinders access to uninterrupted online classes.

The present study has been classified into two different sections; the impact of COVID-19 on students and the impact of COVID-19 on teachers of the study area. In this study, it has been shown how the academic sector is dealing with this pandemic situation in the study area.

4.1 Impacts on Students

As mentioned in the methodology, the study was conducted with 100 students comprising of 45 male and 55 female students.

4.1.1 Testing of hypothesis 1

H₀: There is no significant difference in the level of familiarity of software across gender.

H₁: There is a significant difference in the level of familiarity of software across gender.

Table 1: Gender wise level of familiarity of software

	Male and Female	N	Mean	Std. Deviation	Std. Error Mean
Familiarity	Male	45	2.22	.951	.142
	Female	55	2.85	1.297	.175

Table 2: Level of familiarity of software across gender

Test →	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Assumptions ↓								Lower	Upper
Equal variances assumed	5.623	.020	-2.725	98	.008	-.632	.232	-1.093	-.172
Equal variances not assumed			-2.809	96.919	.006	-.632	.225	-1.079	-.186

An independent samples T-test was performed to understand whether there is any difference across gender regarding familiarity with the software used for online teaching. The result is shown in Table 1. Males are the least familiar with the software, with an average score of 2.22.

Table 2 shows the level of software familiarity across gender. The level of significance is 0.02, which is less than the 0.05 level of significance. Therefore, the null hypothesis has been rejected, and the alternative hypothesis has been accepted at the 5 percent level of significance. So there is a significant difference in the level of familiarity of software across gender.

4.1.2 Testing of hypothesis 2

H₀: There is no significant difference in the level of willingness between age groups.

H₁: There is a significant difference in the level of willingness between age groups.

Table 3: Level of willingness between age group

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.208	3	.736	.669	.573
Within Groups	105.552	96	1.100		
Total	107.760	99			

An ANOVA test has been performed to understand the level of willingness to shift to an online platform between age groups. Table 3 shows that level of significance among the age groups is 0.573, which is more than 0.05. Therefore, the null hypothesis has been accepted, and the alternative hypothesis has been rejected at the 5 percent level of significance. So there is no significant difference in the level of willingness between age groups.

Fig 1: Study area

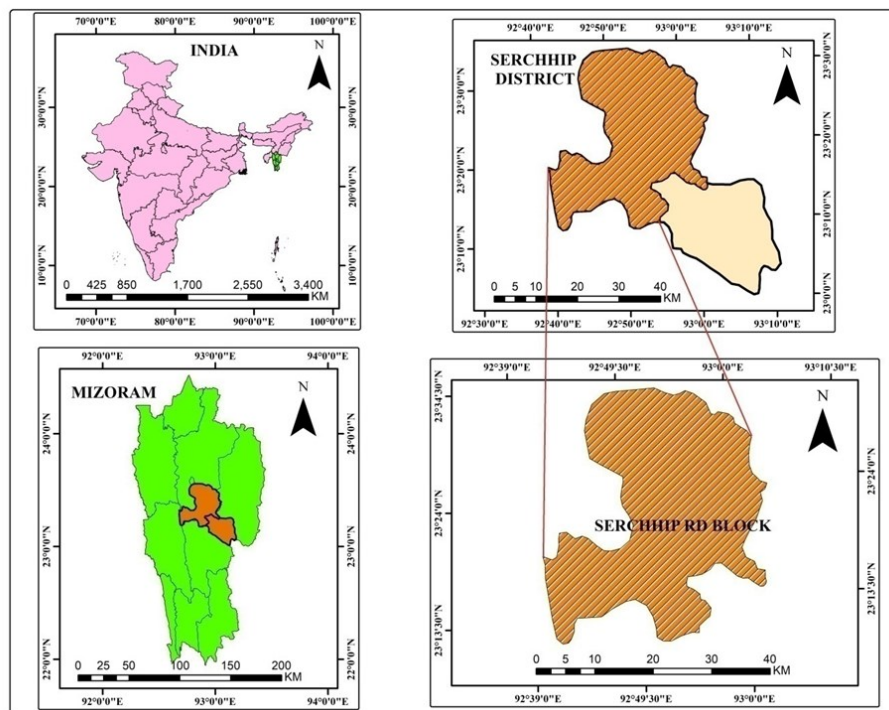


Fig 2: Age group-wise willingness to shift

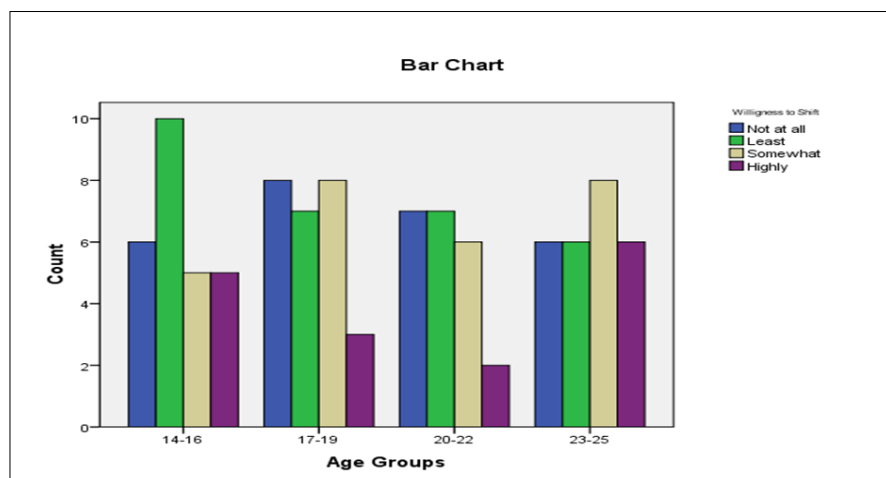


Fig 2 shows the nature of willingness to shift to online mode among each age group. It is seen that the 23-25 year age group is the most willing among other age groups to shift to the online platforms.

4.1.3 Testing of hypothesis 3

H₀: There is no significant difference in the familiarity of software and age groups.

H₁: There is a significant difference in the familiarity of software and age groups.

Table 4: Familiarity of software across age group

Familiarity	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.248	3	.416	.287	.835
Within Groups	139.262	96	1.451		
Total	140.510	99			

An ANOVA test has been performed to understand the level of familiarity of software across age groups. Table 4 shows that level of significance is 0.835, which is more than a 0.05 level of significance. Therefore, the null hypothesis has been accepted, and the alternative hypothesis has been rejected at the 5 percent level of significance. So there is no significant difference in the level of familiarity of software across age groups since there has been a sudden shift to online mode. This only reiterates the fact that more training on online mode of teaching is required for the study area along with technological and infrastructural up-gradation for its smooth utilization.

4.1.1 Testing of hypothesis 4

H₀: There is no significant difference in the level of knowledge about online teaching before and after the pandemic.

H₁: There is a significant difference in the level of knowledge about online teaching before and after the pandemic.

Table 5: Mean of online knowledge before and after COVID-19

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Online knowledge before COVID	1.91	100	.753	.075
	Online	3.33	100	1.035	.104

Since online teaching is very much new to the study area, the respondents were questioned regarding their knowledge of the same before, and after COVID -19 situations. Table 5 displays the level of knowledge regarding online before and after COVID-19. The mean value of online knowledge before COVID-19 is 1.91, and the mean value of online knowledge after COVID-19 is 3.33. Thus statistical analysis proves a substantial increase of knowledge concerning online education after the pandemic. The reason for this may be attributed to the regular online mode of teaching owing to the closure of academic institutions while at the same time ensuring no loss in academic sessions through regular online mode.

Table 6: Level of knowledge about online teaching before and after the pandemic.

		N	Correlation	Sig.
Pair 1	Online knowledge before COVID & after	100	.544	.000

An ANOVA test has been performed to understand the level of knowledge about online teaching before and after the pandemic. Table 6 shows that level of significance is 0.000, which is less than the 0.05 level of significance. Therefore, the null hypothesis has been rejected, and the alternative hypothesis has been accepted at the 5 percent level of significance. So there is a significant difference in the knowledge about online teaching before and after the pandemic.

4.2 Impact on Teacher

In this study, a total of 100 respondents of teacher, among them 45 male and 55 female students have been taken from the 4 types of various age groups (in years) such as 25-35, 35-45, 45-55, and 55 and above, along with various faculties such as arts, science, commerce, and others (technical).

4.2.1 Testing of hypothesis 1

H₀: There is no significant difference in the level of familiarity of software across gender.

H₁: There is a significant difference in the level of familiarity of software across gender.

Table 7: Familiarity of Software across Gender

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Familiarity	Male	45	2.58	1.438	.214
	Female	55	2.05	.989	.133

An independent samples t-test was performed to understand whether there is any difference across gender (male and female) of teachers regarding familiarity with the software used for online teaching. The test result is shown in Table 7. Females are the least familiar with software than the male with an average score of 2.05.

Table 8: Level of familiarity of software across gender

Test →	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Assumptions ↓								Lower	Upper
Equal variances assumed	14.704	.000	2.149	98	.034	.523	.244	.040	1.006
Equal variances not assumed			2.072	75.451	.042	.523	.252	.020	1.026

Table 8 shows the level of significance of software familiarity across gender. The significance level of 0.034, which is less than the 0.05 level of significance, rejects the null hypothesis, and the alternative hypothesis has been accepted at the 5 percent level of significance. So there is a significant difference in the level of familiarity of software across gender.

4.2.2 Testing of hypothesis 2

H₀: There is no significant difference in the level of willingness between age groups.

H₁: There is a significant difference in the level of willingness between age groups.



Table 9: Level of willingness to shift to online platform between age group

Willingness to shift	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	128.960	3	42.987	.	.003
Within Groups	.000	96	.000		
Total	128.960	99			

A t-test has been performed to understand the level of willingness between age groups. Table 9 represents the level of significance of willingness among the age group is 0.003, which is less than 0.05 level of significance. Therefore, the null hypothesis has been rejected, and the alternative hypothesis has been accepted at the 5 percent level of significance. So there is a significant difference in the level of willingness between age groups.

4.2.3 Testing of hypothesis 3

H₀: There is no significant difference in the familiarity of software and age groups.

H₁: There is a significant difference in the familiarity of software and age groups.

Table 10: Software familiarity and age groups

Familiarity	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	96.635	3	32.212	57.314	.000
Within Groups	53.955	96	.562		
Total	150.590	99			

A t-test has been performed to understand the level of familiarity of software and age groups. Table 10 represents the level of significance is 0.000, which is less than the 0.05 level of significance. Therefore, the null hypothesis has been rejected, and the alternative hypothesis has been accepted at the 5 percent level of significance. So there is a significant difference in the familiarity and age groups.

4.2.4 Testing of hypothesis 4

H₀: There is no significant difference in the preference for mode of teaching across age groups.

H₁: There is a significant difference in the preference for mode of teaching across age groups.

Table 11: Mode of teaching across age groups

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	33.347 ^a	3	.000
Likelihood Ratio	35.635	3	.000
Linear-by-Linear Association	19.719	1	.000
N of Valid Cases	100		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.58.

Table 11 represents the mode of teaching such as online and offline with the different age groups of teachers from different faculties. Results show with cross-tabulation that the relatively younger faculty (25-35 age groups) prefer the online teaching mode to the offline mode.

Table 12: The preference for mode of teaching across age groups

		Mode of teaching		Total
		Online	Offline	
Age groups	25-35	22	4	26
	35-45	8	18	26
	45-55	2	20	22
	55 and above	7	19	26
Total		39	61	100

A Chi-square test has been performed to understand the level preference for mode of teaching across age groups. Table 12 shows that level of significance is 0.000, which is less than the 0.05 level of significance. Therefore, the null hypothesis has been rejected, and the alternative hypothesis has been accepted at the 5 percent level of significance. So there is a significant difference in the preference for mode of teaching across age groups.

4.2.5 Testing of hypothesis 5

H₀: There is no significant difference in the level of knowledge about online teaching before and after the pandemic.

H₁: There is a significant difference in the level of knowledge about online teaching before and after the pandemic.

Table 13: Mean of online knowledge before and after COVID-19

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Online before	1.80	100	.853	.085
	Online after	3.60	100	1.064	.106

Table 13 displays the level of knowledge regarding online before and after COVID-19. The mean value of online knowledge before COVID-19 is 1.8 and, the mean value of online knowledge after COVID-19 is 3.6. Thus statistical analysis proves a substantial increase of knowledge concerning online education after the pandemic. This may be attributed to regular online mode of teaching due to the closure of academic institutions, while at the same time training support of teachers by their respective institutions.

Table 14: Level of online teaching knowledge before and after the pandemic

Test topic	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Online before - Online after	-1.800	.910	.091	-1.981	-1.619	-19.778	99	.000

A Chi-square test has been performed to understand the level of online teaching knowledge before and after the pandemic. Table 25 shows that level of significance is 0.000, which is less than the 0.05 level of significance. Therefore, the null hypothesis has been rejected, and the alternative hypothesis has been accepted at the 5 percent level of significance. So there is a significant difference in the level of knowledge about online teaching before and after the pandemic.

Table 15: Summary of hypotheses tests

Null Hypothesis	Test	Sig	Decision
Willingness to shift to online platforms across gender.	t-test	0.855	Null hypothesis accepted
Familiarity of software across gender	t-test	0.034	Null hypothesis rejected
Willingness between age groups	ANOVA	0.003	Null hypothesis rejected
Familiarity and age groups	ANOVA	0.000	Null hypothesis rejected
Preference for mode of teaching across gender	Chi-square	0.333	Null hypothesis accepted
Preference for mode of teaching across age groups	Chi-square	0.000	Null hypothesis rejected
Knowledge about online teaching before and after the pandemic	Chi-square	0.000	Null hypothesis rejected

5.0 Conclusion:

The present study was focused on the impact of lockdown on the education system due to the pandemic situation of COVID-19 in Mizoram. This pandemic situation allowed changing the way of teaching and has introduced the virtual education system all over the country.

As the virtual mood of education is new to both the learners and teachers, it is difficult to get tuned to the system. Various online modes are still being tested and tried in the study area. However, owing to the remote location of the study area; the economic condition of the inhabitants; technological, and infrastructural lacuna; the dearth of prior experience in the online mode of teaching, both the teacher and students are in a disadvantageous position. In general, lack of willingness to shift to online mode both by the teachers and students was noticed. The level and ease of online mode were found to be more among the science students and among the 23-25 year age group, while the younger teachers were found to be more eager in the online mode than their senior colleagues.

The present study draws attention to the lack of technical facilities in villages and remote locations having high literacy levels.

It is very uncertain that how long this pandemic situation will last. The virtual system of education is one of the most effective techniques during any emergency/crisis. Thus studies like this will aid the planning authorities in proper planning procedures by pointing out the loopholes towards digital India – the much-awaited dream of every Indian.

References:

- Bhat, B. A., Khan, S., & Manzoor, S. (2020). Study on Impact of COVID-19 Lockdown on Psychological Health! Economy and Social Life of People in Kashmir, 5 (2), 36–46.
- Bhattacharyya, R., Kohli, S., Bendigeri, S. R., & Mehta, N. (2020). No Time for Old Men – Effect of Corona Lockdown on Elders! *Int. Journal of Advanced Science and Technology*, 29 (11), 1798–1806.
- Brief Industrial Profile of Serchhip District, Mizoram, Ministry of MSME, Govt. of Mizoram. Retrieved from <http://dcmsme.gov.in/dips/Aizawl.pdf>
- Catrin, Sohrabi, Zaid, Alsafi, Niamh, O'Neill, Mehdi, Khan, Ahmed, Kerwan, Ahmed, Al-Jabir, Christos, Iosifidis, & Riaz, Agha. (2020). Corrigendum to World Health Organization declares Global Emergency: A review of the 2019 Novel Coronavirus (COVID-19)! *Int J Surg*, 77 (217). <https://doi.org/10.1016/j.ijsu.2020.03.036>.
- Cavenagh, N., & Ramadurai, R. (2017). On the distances between Latin squares and the smallest defining set size. *Journal of Combinatorial Designs*, 25(4), 147–158. <https://doi.org/10.1002/jcd.21529>
- Census of India. (2011). District Census Handbook: Serchhip (Part X11 B). Directorate of Census operation, Mizoram: India
- Chakraborty, I. & Maity, P. (2020). COVID 19 outbreak: Migration, effects on society, global environment and prevention! *Science of the Total Environment*, 728. <https://doi.org/10.1016/j.scitotenv.2020.138882>.
- Haleem, A., Javaid, M., & Vaishya, Raju. (2020). Effect of COVID-19 pandemic in daily life! *Current Medicine Research and Practice*, 10 (2), 78–79.
- Jena, K, Pravat. (2020). Impact of Pandemic COVID-19 on Education in India! *International Journal of Current Research*, 12(7), 12582–12586.
- Kumar, Rahul. (2020). Covid-19 Pandemic Impact in India! *Social Science Research Network (SSRN)*. <https://dx.doi.org/10.2139/ssrn.3637437>.
- Li, LiRen, Wang, Ye, Ming, Wu, Xiang, Z, Qiang, & Zi, Chun. (2020). Identification of a novel corona virus causing severe pneumonia in human: a descriptive study! *Chinese Medical Journal*, 133 (9), 1015–1024.
- Nicola, Maria, Alsafi, Zaid, & Sohrabi, Catrin. (2020). The socio-economic implications of the corona virus pandemic (COVID - 19): A review! *Elsevier Public Health Emergency Collection*, 78, 185–193.
- Shereen, M, A., Suliman, K., Abeer, K., Nadia, B., & Rabeea, S. (2020). COVID 19 infection: Origin, transmission, and characteristics of human corona viruses 2020. *Journal of Advanced Research*, 24, 91–98.
- Singh, Jaspreet, Singh, Jagandeep, & Hasan, Ali. (2020). COVID - 19's Impact on the Society! *Electronic Research Journal of Social Sciences and Humanities*, 2(1), 168–172.
- United Nation (UN) Policy Brief: The Impact of COVID-19 on older persons. Retrieve from <https://unsdg.un.org/sites/default/files/2020-05/Policy-Brief-The-Impact-of-COVID-19-on-Older-Persons.pdf>.
- World Health Organization (WHO) Corona virus disease 2019 (COVID-19) Situation Report – 72. Retrieved from https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200401-sitrep-72-covid-9.pdf?sfvrsn=3dd8971b_2
- ZiYueZu, Meng, Di, Jiang, Peng, Peng, Xu, Wen, Chen, Qian, Qian, Ni, Guang, Ming, Lu, & Long, Jiang, Zhang. (2020). Corona virus Disease 2019 (COVID-19): A Perspective from China! *Radiology*, 296, 15–25. <https://doi.org/10.1148/radiol.2020200490>.