



Pandemic and its effects on the environment

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Abstract

The rapid transmission in world was observed due to spread of newly emerged novel coronavirus in different environmental matrices, including water, air, and soil, has posed severe health, environmental, energy, and economic challenges worldwide. Despite the fact that around, 2.2 billion people of the human population does not have proper access to drinking water, they are asked to wash their hands regularly to fight the coronavirus pandemic. There has been a sharp decline in environmental noise, the amount of food waste is reduced, which ultimately reduces soil and water pollution.

This article represents perceptions of pupil teacher towards changes faced in water, air, and energy resources as the significant and interrelated components of the ecosystem.

Key words: Pandemic, Pollution, Environment

Introduction: -

On late December 2019 in Wuhan city, in China, an unusual pneumonia was noticed with a link to an animal market that sells poultry and other animals to the public. This event was soon reported to the World Health Organization (WHO). The casual micro-organism had been identified as a novel coronavirus that was named COVID-19. COVID-19 soon spread to other parts of the world. The World Health Organization has declared the situation a pandemic. The COVID-19 pandemic has impacted every aspect of human life including travel restrictions and lockdown to control the spread of the highly contagious virus.

Due to the unusual outbreak of COVID-19, almost every part in the world affected like China, Taiwan, Italy, USA, France, Spain, Turkey, Iran, Germany, S Korea, U.K., India, Australia and many more countries. The major sectors contributing to air pollution are transport, industries, power plants, construction activities, road dust resuspension and residential activities. Under the nationwide lockdown, all transport services – road, air and rail were suspended with exceptions for essential services. Educational institutions, industrial establishments and hospitality services were also suspended. As a result, air quality improvement has been noted in many towns and cities across the world.

As industries closed, industrial waste emission has decreased to a large extent. Vehicles are hardly found on the roads resulting in almost zero emission of green – house gases and toxic tiny suspended particles to the environment. Due to lesser demand of power in industries, use of fossil fuels have been lowered considerably. Ecosystems are being greatly recovered. The pollution level in tourist spots such as forests, sea beaches, hill areas, etc. is also shrinking largely. Water pollution is a common phenomenon of a developing country like India, and Bangladesh, where domestic and industrial wastes are dumped into rivers without treatment. For instance, the river Ganga and Yamuna have reached a significant level of purity due to the absence of industrial pollution on the days of lockdown in India. Noise pollution generated from different human activities (e.g., machines, vehicles, construction work) may lead to adverse effects in human and other living organisms. However, the lockdown measures mandate that people stay at home and reduced economic activities and communication worldwide, which ultimately reduced noise level in most cities. To protect from the viral infection, presently people are using face mask,

hand gloves and other safety equipment, which increase the amount of healthcare waste. Since, the outbreak of COVID-19, the production and use of plastic based PPE is increased worldwide.

The tangible improvements in nature have made us believe that the earth can be saved. It is assumed that due to the lockdown, the drainage of industrial waste into the river water has stopped and brought a significant change in the water quality. Due to the reduced pollution in water, Dolphins have been seen spotted at various Ganga Ghats of Kolkata. The birds normally migrate to the area every year, but due to COVID-19, there is massive increase in their numbers.

Due to lockdown, online purchase and food delivery are quite very high. This had led to more use of single-use-plastic as well as it has created more demand for the need of fossil fuel for individual transportation. The demand for mask during the pandemic has touched the sky but the elements required for this mask are highly dangerous for the environment as they are generally made up of Polyester, Polystyrene, polyethene and polycarbonate some common materials used for the surgical mask. As the recycling plants are on hold, the waste generated by different means is kept on increasing and creating risk related to air pollution. Similarly, the medical waste generated is also very high due to usage of single – use Medicare products like Gloves and PPE

Problem of the Study: -

A study of Environmental changes during Pandemic situation.

Objectives:

- To study perception of pupil teacher towards effect of pandemic on air pollution.
- To study perception of pupil teacher towards effect of pandemic on water pollution.
- To study perception of pupil teacher towards effect of pandemic on bio – medical waste.

Scope and Limitation: -

- The study includes data collection from students from College of Education.

- The study includes data collection from pupil teacher staying in Kalyan, Ulhasnagar region.
- The students are from Mumbai University
- The study includes data collection from English, Hindi and Marathi medium pupil teachers of B.Ed. degree.

Method: The investigator has selected “Pandemic and its effects on the environment” topic and in Survey method was selected to collect the data.

Sample size and Sampling: - For the current study, Random Sampling method was used. sample size is 50 B.Ed. pupil-teacher were selected from College of Education, Ulhasnagar & Kalyan region.

Tools and Techniques: -

For this study the investigator has selected Questionnaire as a tool, which consists of 25 items and survey method was used to collect data.

Analysis and Interpretation: -

After the collection of data, it is to be analyzed and interpreted. This collection presented in tabular forms and graphs.

Sr No	Variables	yes	Percentage
1	Positive environmental changes	46	92
2	Cleanliness	45	90
3	CO2 emissions dropped	40	80
4	Use of Plastic	30	60
5	Reduction in recycling process	39	78
6	Changes in bird population	37	74
7	Food to animals	43	86
8	Disinfectants	37	74
9	Air quality	43	86
10	Biomedical waste generation	41	82
11	Petrol consumption	43	86
12	Noise levels	44	88
13	Water quality	44	88
14	Mask and hand gloves	45	90
15	Global coal Consumption	39	78
16	Industrial Sources of Pollution	39	78
17	Biomedical Waste	40	80
18	Use of Plastic	15	30

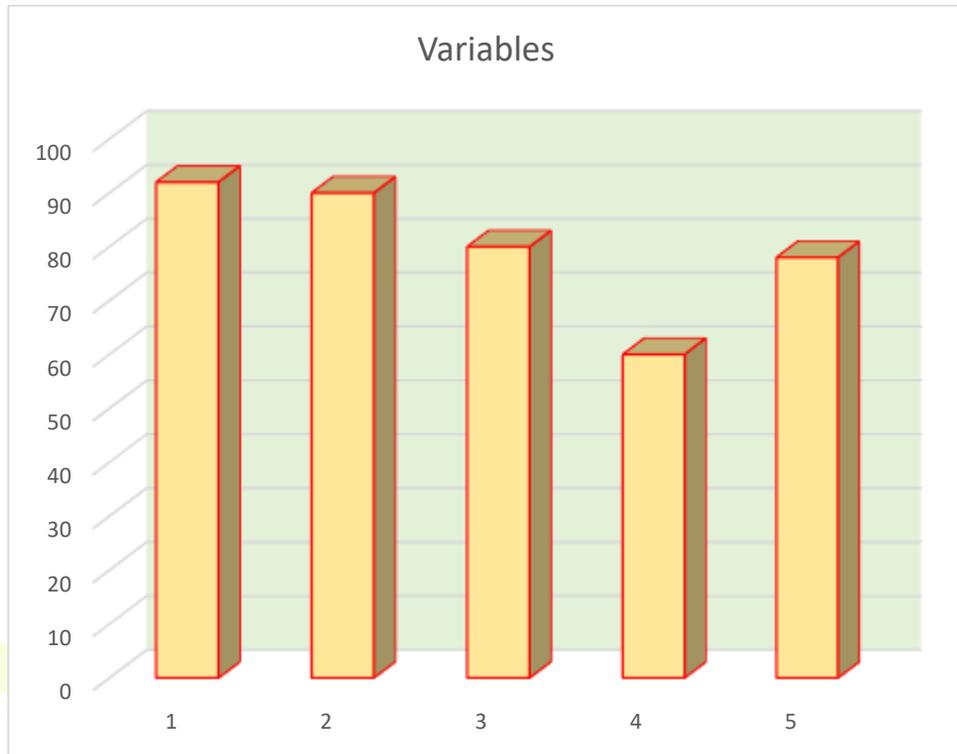
19	Risk of Asthma	43	86
20	Tourist places	45	90
21	Aqua pollution	20	40
22	Fisheries and aquaculture.	09	18
23	Air and noise pollution	46	92
24	Bird Population	25	50
25	Online education	45	90

Major Findings:

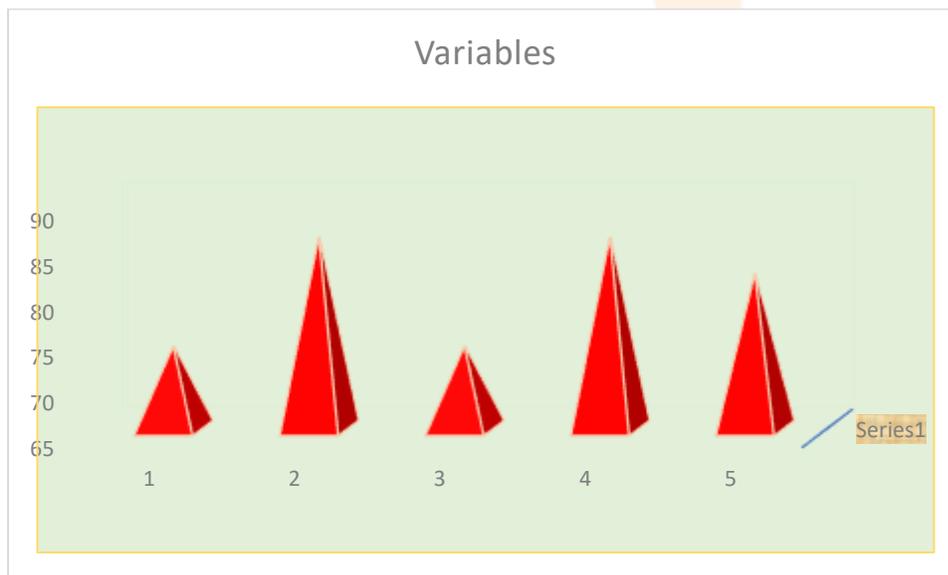
- 92% pupil teacher think that they have observed positive environmental changes due to covid-19 situation.
- 90% pupil teacher have observed more cleanliness in their surroundings.
 - 80% pupil teacher think that CO2 emissions have dropped because of pandemic situation.
 - 60% Pupil teacher things that during this pandemic, use of “single use plastic” increased.
 - 78% pupil-teacher think that there was reduction in recycling process.
 - 74% Pupil teacher think that they found changes in bird population around them during lockdown.
 - 86% Pupil teacher have feed food to birds or domestic animals during lockdown.
 - 74% pupil-teacher feel that huge amount of disinfectants applied into roads, commercial and residential areas.
 - 86% Pupil teacher have heard that during pandemic air quality index improved.
 - 82% Pupil teacher think that biomedical waste generation was more during this pandemic situation.
 - 86% pupil teacher think that less petrol were used during the pandemic situation.
 - 88% pupil-teacher feel that there was a change in in noise levels in city e during covid-19 pandemic.

- 86% pupil-teacher I have heard that the Ganga water quality improved remarkably during the lockdown period.
- 90% Pupil teacher think that increased use of face mask and hand gloves has negative impacts on the environment.
- 78% Pupil teacher have heard that global coal consumption also reduced because of less energy demand during the lockdown period.
- 78% pupil-teacher think that major industrial sources of pollution have shrunk.
- 80% of the Pupil teacher said that biomedical waste increased during pandemic which has negative impact on environment.
- 30% pupil teacher said that plastic use was more during pandemic situation.
- 86% of the pupil teacher said that because of less air pollution after pandemic, it reduced the risk of asthma and hence has good impact on human health.
- 90% of the pupil teacher said that tourist places were closed during pandemic and hence has positive impact on environment.
- 40% of the pupil teacher said that aqua pollution decreased and hence aquaculture grows ultimately well.
- 18% people teacher said that covid-19 haven't affected fisheries and aquaculture.
- 92% of the pupil teacher said that there was less air and noise pollution.
- 50% pupil teacher said that bird population increased during pandemic.
- 90% pupil teacher thinks Online education does not develop positive perception with environment

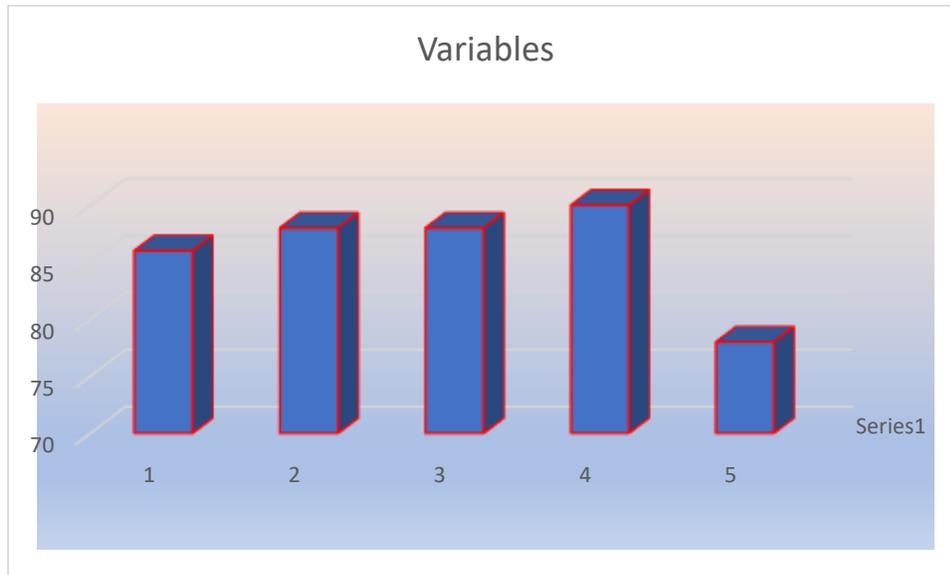
The following table represents Percentage of yes responses of Q1 to Q5.



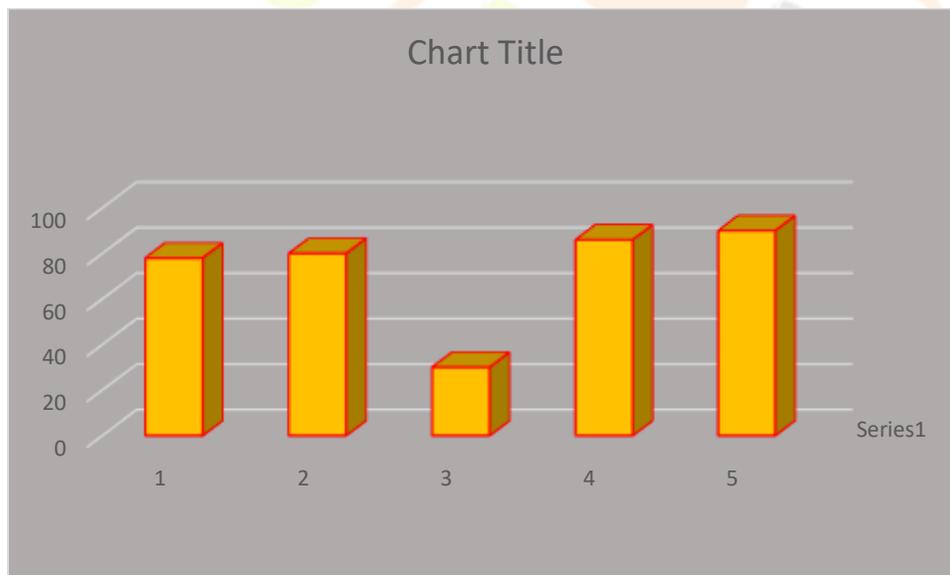
The following table represents Percentage of yes responses of Q6 to Q10



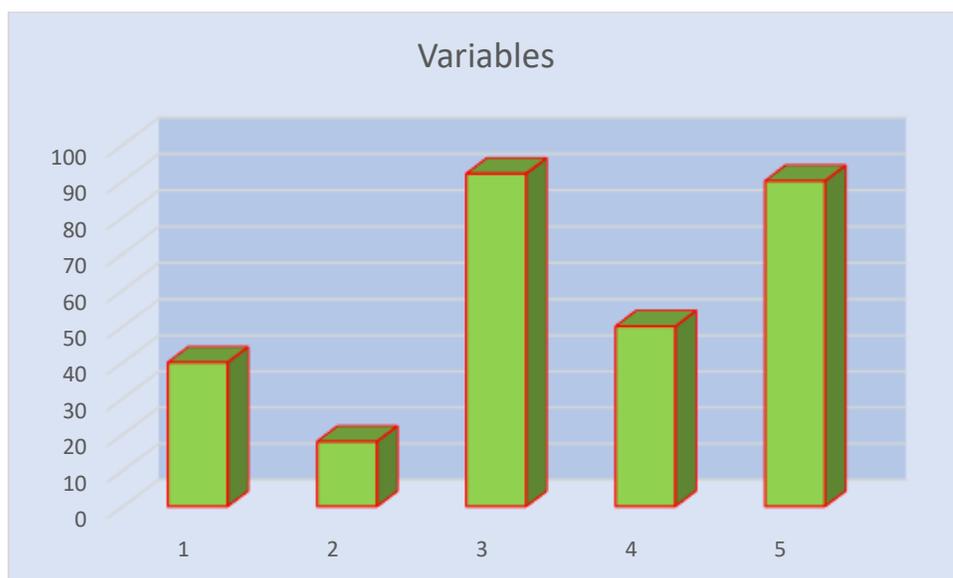
The following table represents Percentage of yes responses of Q11 to Q15



The following table represents Percentage of yes responses of Q16 to Q20



The following table represents Percentage of yes responses of Q21 to Q25



Conclusion: -

Covid-19 and its associated lockdown has given us opportunity to step back and assess our impact on the environment, contrary it has helped repair some environmental damage. As the human activities are restricted in most of the areas, the natural environment of country has starting healing itself. From this study pupil teachers said that transport, vehicles, etc. have all ground to a halt. Carbon emissions have decreased and the quality of air shows improvement. Likewise, pollution in beaches reduced drastically and the water has become clear due to low number of tourists, so the rivers of India like Ganga have become clean and clear and marine life is visible. Since the lockdown restricted the movement of public transport and halted industrial activities completely resulting in a significant reduction of noise pollution worldwide. However, covid-19 pandemic also has negative consequences to the environment due to the increasing amount of domestic and medical waste that can be harmful and potentially transmit diseases to others and less appropriately treated.

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