A Study On Rising Environmental Pollution Post COVID with Reference to Chennai

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Abstract

Chennai, a coastal city in southern India, has been grappling with rising environmental pollution in recent years. However, the COVID-19 pandemic led to a temporary reduction in pollution levels due to the nationwide lockdown. As the city slowly opens up, there are concerns that pollution levels could rise again. Chennai's air quality has been a major concern in recent years, with high levels of particulate matter and nitrogen dioxide. This is mainly due to industrial activities, vehicular emissions, and construction activities. The lockdown led to a significant reduction in vehicular traffic and industrial activities, which resulted in improved air quality. However, as the city resumes its normal activities, there is a risk of pollution levels returning to their previous high levels. The main objective of this paper is to find the possible solution for environmental pollution after COVID lockdown. Due to this heavy increase in pollution there is an increased number of diseases in chennai related to breathing and skin diseases. From the findings of this research paper it is clear that due to high usage of vehicles for transportation, industrial activities, overpopulation, etc There is high concentration of Carbon and lead emissions from both vehicular emissions and industrial activities, accumulation of heavy elements such as sulphur, cadmium, chromium, in agricultural soil due to high usage of pesticides etc… The 'Respirable Suspended Particulate Matter' (RSPM) that measures pollution is much beyond the permissible limit within the city. In the first week of December 2015, Chennai had the best proportion of 'severe' days (17.7 per cent), and a 3rd of all days were either of severe, very poor or poor air quality, averaging across Chennai's three monitoring stations within the city. The research method followed here is a Descriptive research. A total of 204 samples have been collected out of which all samples have been collected through a convenient sampling method . The sample frame taken here is public areas in and around Chennai, Tamil Nadu like beaches, malls and parks.

Keywords: vehicles, transportation, air emissions, industrial activities, waste generation.

1. Introduction

In recent times there has been a big increase within the environmental pollution in chennai after the withdrawal of lockdown imposed by government thanks to corona pandemic, because of high usage of vehicles and transportation the emission of heavy elements like carbon monoxide gas and other effluents is intensive in number. The most reason for high pollution is because of exhaust from different quiet vehicles plying on the town roads. The ever-increasing number of vehicles is choking the roads and therefore the delay results in traffic jam and wastage of fuel, leading to higher emission and thus

contributing to pollution.The regime is trying to deal with the matter of pollution through better transport systems, increasing the quantity of city buses, constructing metro railways etc, but the pollution continues to extend as there's no check in reduction privately cars and two wheelers.It has been globally found that cities are combining good conveyance system with direct restraints on cars to cut back tie up and pollution. this is often being done so by effective travel demand management that reduces car usage and addresses the issues of congestion, air emissions and excess fuel use. However, this can not exhaust Chennai; while Delhi is implementing Odd- Even decide to reduce car usage. There's significant increase in industrial activities which causes one in all the key pollution in chennai like Air pollution and Water contamination As far because the sound pollution is anxious, the globe Health Organization has fixed 85 decibels as permissible limit. However, as per the estimates of the National Pollution control panel (CPCB), the background level in Chennai is over 129 decibels. This can be another alarming feature and lots of reasons are attributed to that. amplitude in Chennai is increasing thanks to the addition of various sorts of vehicles on town roads. The honking of vehicles, the burlington sound of generators and motors all raise the pollution in Chennai. The generous use of microphones during festivities is another source of sound pollution. The COVID-19 pandemic had a significant impact on the environment by reducing pollution levels as many industrial and transportation activities were shut down to prevent the spread of the virus. However, as the world emerges from the pandemic, there are concerns that pollution levels could rise again. One of the main reasons for the potential increase in pollution is the resumption of industrial and transportation activities that were halted during the pandemic. As economies reopen, there will be an increase in the use of fossil fuels, which could lead to a rise in air pollution levels. In addition, there is likely to be an increase in waste generation as people resume their normal activities. Another factor that could contribute to rising pollution levels is the use of personal protective equipment (PPE) such as masks and gloves. While PPE has been essential in controlling the spread of the virus, improper disposal of these items could lead to environmental pollution. Finally, there is also the issue of pent-up demand for goods and services that people were unable to access during the pandemic. As people start to travel and consume again, there could be an increase in pollution from transportation and manufacturing activities. Overall, it is essential that governments and individuals take steps to prevent a rise in pollution levels as the world recovers from the pandemic. This could include investing in clean energy and transportation, promoting sustainable waste management practices, and encouraging the responsible use and disposal of PPE. Water pollution is also a significant issue in Chennai, with many of the city's water bodies contaminated with sewage and industrial effluents. The lockdown led to a reduction in the discharge of untreated sewage into water bodies, which resulted in a temporary improvement in water quality. However, as the city resumes its activities, there is a risk of pollution levels increasing again. Waste management is another issue in Chennai, with improper waste disposal leading to pollution of land and water. The lockdown led to a reduction in waste generation due to reduced economic activity, but as the city resumes its activities, there could be an increase in waste generation and pollution. In conclusion, while the COVID-19 pandemic led to a temporary reduction in pollution levels in Chennai, there is a risk of pollution levels rising again as the city resumes its normal activities. It is essential for the government and individuals to take steps to address the issue of environmental pollution and promote sustainable practices to ensure a healthy environment for future generations. **The Main aim of this research paper is to determine effects Pollution Post Covid.**

OBJECTIVES

To find out The Most affecting Cause of Rising Pollution Post Covid

To find out The Most common health effects due to increased pollution

To find out the effective Preventive Methods to control the Rising Environmental Pollution

To determine the Level of Impact of pollution in Chennai

REVIEW OF LITRETURE

Jayanthi Vairavan (2006) a study has been conducted where Exposure to pollution is an inescapable part of our urban life. During this study, the interaction patterns of air pollutants, SO2, NO x, SPM and PM10 are investigated in a measured database of the study area in Manali, near Chennai. This study is important, since these pollutants violate the prescribed norms of the NAAQ Standards. it absolutely was found to be the moderate pollution category and this position is maintained. This study found that the inhabitants of Manali and surrounding villages were laid low with respiratory problems, asthma and premature death. Thus the environmental concerns prevailing in Manali are a significant issue.**Ramachandran and Prasanna Venkatesh (2015)** Research outcomes from epidemiological studies have found that the course (PM 10) and also the fine stuff (PM 2.5) are mainly accountable for various respiratory health effects for humans. Systematic sampling was administered at strategic locations of Chennai to estimate the assorted concentration levels of particulate pollution during November 2013–January 2014. The concentration of the pollutants was classified and supported the planet Health Organization interim target (IT) guidelines. Results supported human exposure analysis show the vulnerability is more towards the zones which are surrounded by prominent sources of pollution. **Duraisamy and Latha (2011)** This paper reports the impact of pollution on marine ecosystems; it analyses the factors chargeable for degradation and suggests suitable corrective measures. around the world, marine ecosystems are being threatened, degraded, damaged or destroyed by human activities, one in every which is pollution. Pollution reduces the aesthetic value and also the intrinsic value of the marine environment, whether the pollution is visual (such as oil pollution and plastic debris) or invisible (such as chemical compounds). Suggestions are offered, both invasive and non invasive which might definitely reduce the burden placed on our valuable resources which can soon vanish unless the counter measures are implemented effectively. **Lohat Taghavi and Mohammed Noori Mashiran (2018)** : The aim of this study was to research soil contamination by heavy metals chromium, manganese, cadmium, lead and mercury in soils irrigated with sewage directly in Meshginshahr city of Ardabil province using various indicators of pollution. To perform study 4 separate soil samples were taken from the world in spring and summer and heavy metal concentrations were measured employing a spectrophotometer. The results showed, mostly <0, so concentrations within the soil were linked to their natural origin. The results showed that pollution measures employed in this study could determine soil contamination with heavy metals. **M. Arul prakasa jothi, U. Chandrasekhar, D. Yuvarajan and Maradana Bhanu Teja (2018)** Recent reports from the coastal resource centre have shown that the air quality in Chennai is alarmingly toxic and pollution-linked deaths are increasing a day. Ambient air pollutants like PM10, PM2.5, O3, SO2 and NO2 are well-known for his or her toxic nature and talent to cause many respiratory disorders like bronchitis, emphysema and asthma. For maintaining a sustainable development and ecological balance, it's vital to optimise ambient air quality. Within the current research paper, we target the overview of ambient air quality in Manali, an industrial area in Chennai. **P. Aparnavi (2018)** According to a WHO study, 13 of the 20 most-polluted cities within the world are in India, which is over half the world's most polluted cities. Pollution in Delhi hit almost 30

times the WHO safe limit. Methodology: A community-based cross-sectional study, in seven localities of South Delhi district of Delhi using simple sampling. 384 adult members (>18 years) residing within the selected households for over 6 months and who volunteered for the study were recruited. Results: Among 384 participants, 57.6% believed that this air quality was worse than it absolutely was 5 years ago. More men (61%) perceived air quality to be worse, but women perceived symptoms of pollution more. **Harendra k. Sharma (2018)** Long term exposure of poor air quality is also the reason for severe health effects. In modern times air quality could be a major concern in India due to rapid urbanization, development and industrialization. This paper reports on the results of a questionnaire survey on health effects and awareness of local residents on ambient air quality of Gwalior city. Survey focuses on the extent of awareness about pollution, pollutants and health effects of pollution. The questionnaire was designed with the aim of capturing information about the constant changing air quality. The questionnaire survey was conducted in an outside urban Mediterranean area of Gwalior city Madhya Pradesh India. **Peter Bailey et al. (1999)** The central theme of this paper is that the assessment of environmental issues requires citizen participation for several reasons, including access to local knowledge, quality assurance and to reveal values and agendas. The study procedure of using citizen groups is described, and an analysis of the fabric from the groups is given. The ultimate section argues that group discussions is an appropriate methodology for involving the general public in environmental assessment, which the participants were ready to inquire into the validity and quality of such technical activities as continuous monitoring and computer modelling of pollution in an urban environment. **CA Pope (1995)** The central theme of this paper is that the assessment of environmental issues requires citizen participation for several reasons, including access to local knowledge, quality assurance and to reveal values and agendas. One methodology for involving the general public is presented, based round the case of pollution assessment in Sheffield. The study procedure of using citizen groups is described, and an analysis of the fabric from the groups is given. the ultimate section argues that group discussions will be an appropriate methodology for involving the general public in environmental assessment, which the participants were able to inquire into the validity and quality of such technical activities as continuous monitoring and computer modelling of pollution in an urban environment. **Jan C Semenza (2008)** To study the Changes in climate systems are increasing wave frequency and air stagnation, both conditions related to exacerbating poor air quality and of considerable public health concern. Heat and pollution advisory systems are in situ in many cities for early detection and response to cut back health consequences, or severity of adverse conditions. Elevated ambient temperatures were accurately recognized no matter air-con use; in Portland, respondents resorted to active cooling behavior (AC, fan, etc.), while in Houston no such change was observed. More heat-related symptoms were reported in Portland compared to Houston, probably thanks to low air con use within the northwest. Climatic forecasts are increasingly predictive but public agencies fail to mount an appropriate outreach response. **Maureen Cropper (2021)** We examine the health implications of electricity generation from the 2018 stock of coal-fired power plants in India. We estimate emissions of SO_2, NO_X, and material 2.5 μm ($PM_{2.5}$) for every plant and use a chemical transport model to estimate the impact of power station emissions on ambient $PM_{2.5}$. within the south of India, coal-fired power plants account for 20–25% of ambient $PM_{2.5}$. We estimate 112,000 deaths are attributable annually to current plus planned coal-fired power plants. Not building planned plants would avoid a minimum of 844,000 premature deaths over the lifetime of these plants. **Palak Balyan (2018)** This study evaluates scientific literature on pollution, and its health effects on the population of Delhi to spot the danger of exposure. This comprehensive review summarizes the constraints and gaps in recent studies and

recommends some suggestions for future research. Suspended particulate (SPM), Nitrogen oxides (NOX) and various other pollutants were above the recommended standard. Adverse health effects (coughing, wheezing, Hypertension etc.) has shown positive association with air pollutants, specifically with stuff. A more comprehensive research construing the long run effect of pollution on human health is thus warranted for advocating policy or guidelines for measuring and understanding the harmful effects and also for the control of pollution. **Lalit Dandona (2018)** Air quality of Delhi was detrimental to human health and kept on deteriorating with time. Suspended stuff (SPM), Nitrogen oxides (NOX) and various other pollutants were above the recommended standard. The annual population-weighted mean exposure to ambient material PM2·5 in India was 89·9 μg/m3 in 2017. Most states, and 76·8% of the population of India, were exposed to annual population-weighted mean PM2·5 greater than 40 μg/m3, which is the limit recommended by the National Ambient Air Quality Standards in India. India contributed 18·1% of the worldwide population but had 26·2% of the worldwide pollution DALYs in 2017. We estimated that if the pollution level in India were but the minimum causing health loss, the typical expectancy in 2017 would are higher by 1·7 years (1·6–1·9), with this increase exceeding 2 years within the north Indian states of Rajasthan, state, and Haryana. **Sunil Gulia (2015)** This paper presents a comprehensive review on UAQMPs, being implemented worldwide at different scales e.g., national (macro), city (medium), and native (micro). Urban air quality management plan (UAQMP) is an efficient and efficient tool employed in managing acceptable urban air quality. However, developing countries are still working in formulating the effective and efficient UAQMPs to manage their deteriorating urban air environment. The primary step within the process of formulation of UAQMP is to spot the air internal control regions supported ambient air quality status and second, initiate a time bound program involving all stakeholders to develop UAQMPs. **Venkatesan (2018)** Experimental investigations were dispensed on industrial wastewater and groundwater to work out the physical and chemical parameters. Various physico-chemical parameters like pH, odour, turbidity, total dissolved solids (TDS), electrical conductivity (EC), alkalinity, total hardness (TH), calcium (Ca), sodium (Na), potassium (K), Iron (Fe) and phosphate (PO4) were determined to assess the suitability of water for drinking and agricultural and activities. The study infers that biological treatment is preferred for industrial wastewater and first treatment is required for bore H2O to use them for agricultural purposes effectively. 2018, National Institute of Science Communication and data Resources (NISCAIR). **John presin kumar et al (2019)** Plastics became a crucial commodity in everybody's life. Normal living would become difficult without plastics due to the needs it serves. Modern civilization needs these purposes, the plastic fulfills like bottles, chairs, containers etc. Suggestive plans are provided for better alternatives to beat plastics. Plastics became very essential and needed materials in everybody's life. Recycling of plastics is usually a welcome move and is additionally one among the much needed actions currently required so as to scale back these negative impacts. Anyhow, this can be generally powerless of completely eliminating the usage of plastics. **Thejas Gigy Thomas (2020)** This study uses an ecocritical approach to spot the environmental concerns facing the residents of Ranipet in Madras as a results of industrial development within the area. It's an empirical study that implies measures to minimise the matter employing a survey method. Information for the study was gathered from 50 residents each from Puliyankannu and Karai regions of Ranipet by employing the convenient sampling technique. to search out the end result, the knowledge was subjected to a simple percentage assessment. The paper also defines vulnerable regions and communities, and proposes fresh policy actions to cut back the results and after effects of environmental catastrophes. **Arun Kumar et al (2016)** This preliminary study involves collecting and quantifying of varied debris along the Marina beach in Chennai, India by conducting

surveys along the waterline as prescribed by the NOAA Marine Debris Program. The results indicate that the plastic, paper and wood debris occur within the greatest number followed by garbage and metal. These results reinforce that similar large scale projects, monitoring larger areas for considerably longer durations are to be undertaken for accurate quantification of obtainable debris and their impacts on coastal habitats. **T.Subramani et al (2016)** Noise maps may be wont to assess and monitor the influence of noise effects. Noise maps within GIS are developed in most of the eu Countries. European Commission has approved the Directive called 'Environmental Noise Directive 2002/49/EC' for noise mapping. it's therefore important to develop 3D noise maps which will show the influence of noise altogether. This research work developed a strategy to create 3D noise models to investigate the three dimensional effect of pollution within a GIS. The observation points selected in line with evenly spacing showed good visualization of acoustic situation. All the data has been implemented with gis and concluded.

METHODOLOGY

The research method followed here is an Empirical research. A total of 205 samples have been collected out of which all samples have been collected through a convenient sampling method. The sample frame taken here is public areas in and around Chennai, Tamil Nadu like beaches, malls and parks. The independent variables are gender, age, educational qualification and Place of living. The dependent variables are the Significant increase in pollution after COVID, The Most affecting Cause of Rising Pollution Post Covid, Most common health effects due to increased pollution, Preventive Methods to control the Rising Environmental Pollution, Agreeability on Post Covid period to have more health issues than Pre Covid, Rate the Intensity of impact due to pollution.

HYPOTHESIS :

Null Hypothesis : There is no Relation between educational qualification and Preventive Methods to control the Rising Environmental Pollution

Alternate Hypothesis : There is Relation between educational qualification and Preventive Methods to control the Rising Environmental Pollution

ANALYSIS :

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	205.238[a]	12	.000
Likelihood Ratio	178.896	12	.000
Linear-by-Linear Association	9.691	1	.002
N of Valid Cases	205		

a. 10 cells (50.0%) have expected count less than 5. The minimum expected count is 1.40.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Educational qualification * Preventive Methods to control the Rising Environmental Pollution	205	67.2%	100	32.8%	305	100.0%

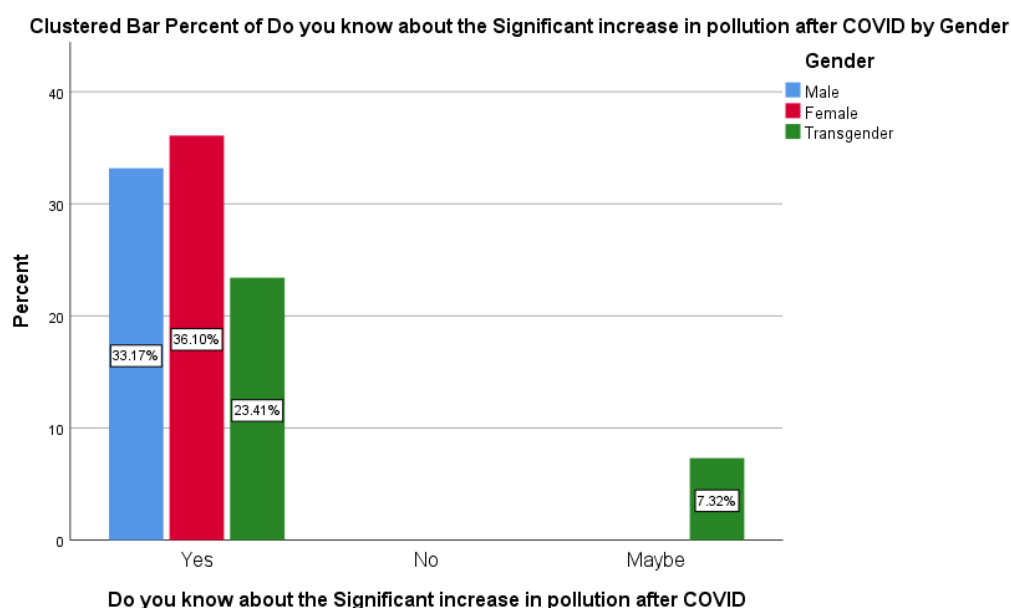### Educational qualification * Preventive Methods to control the Rising Environmental Pollution Crosstabulation

Count

|		Preventive Methods to control the Rising Environmental Pollution					
		Stricter rules for over Exploitation	Sustainable planing for Production	Methods to Restore the Damage to Environment	Alternate resource to meet the Demand	E-vehicles for Transportation	Total
Educational qualification	Undergraduate	27	37	14	14	16	108
	Postgraduate	0	0	12	0	0	12
	P.hd	0	12	0	49	13	74
	No formal education	11	0	0	0	0	11
Total		38	49	26	63	29	205

LEGEND:

This table shows the chi square test from sample survey regarding whether their is a relation between Edcuational Qualifiation and Preventive Methods to control the Rising Environmental Pollution.
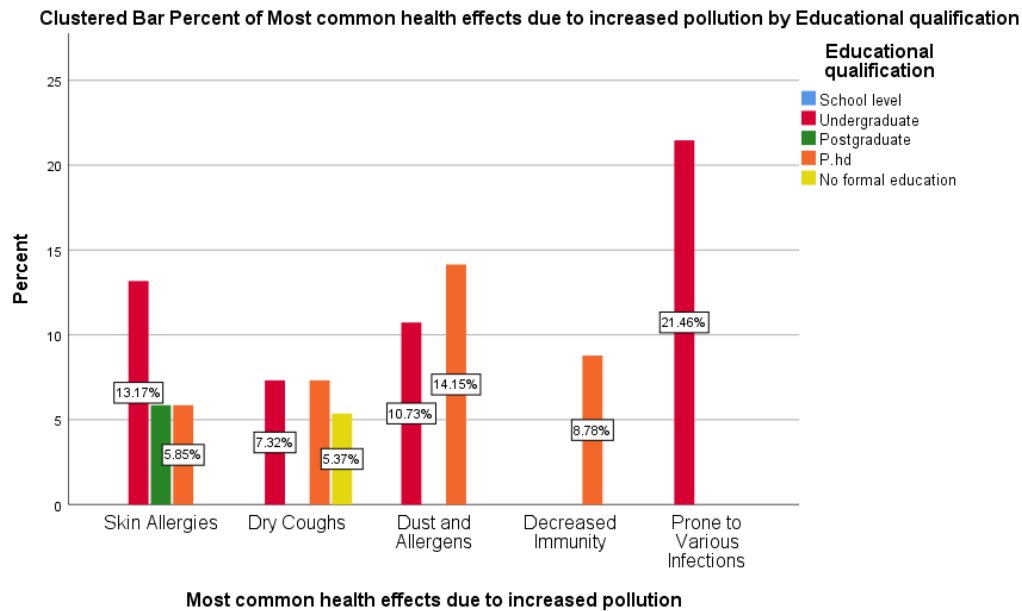
FIGURE 1:

LEGEND : Graph presentation showing the significant increase in pollution after pollution by gender

FIGURE 2 :
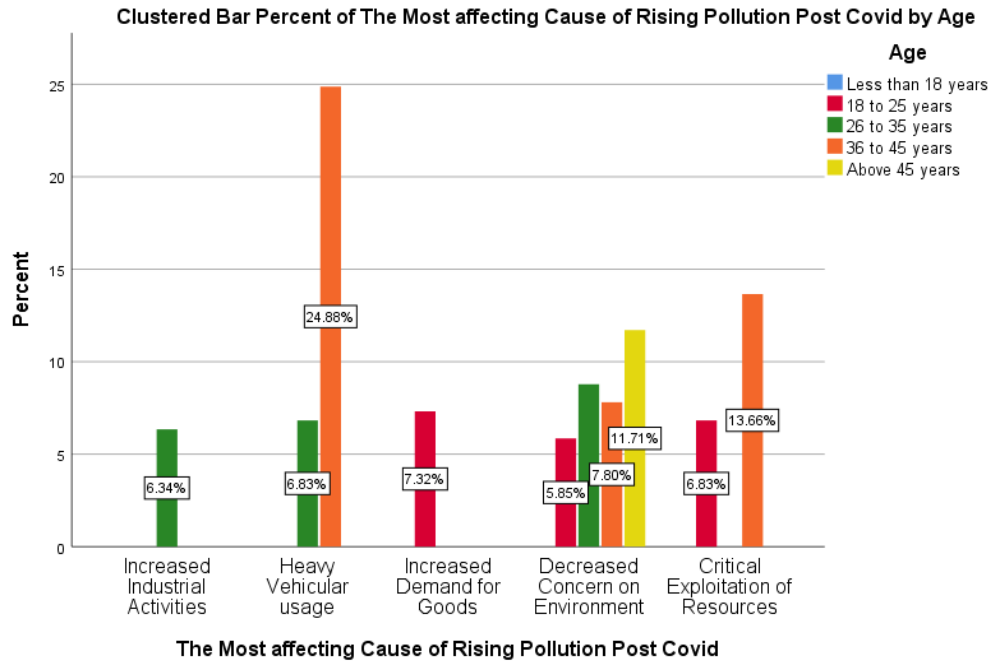
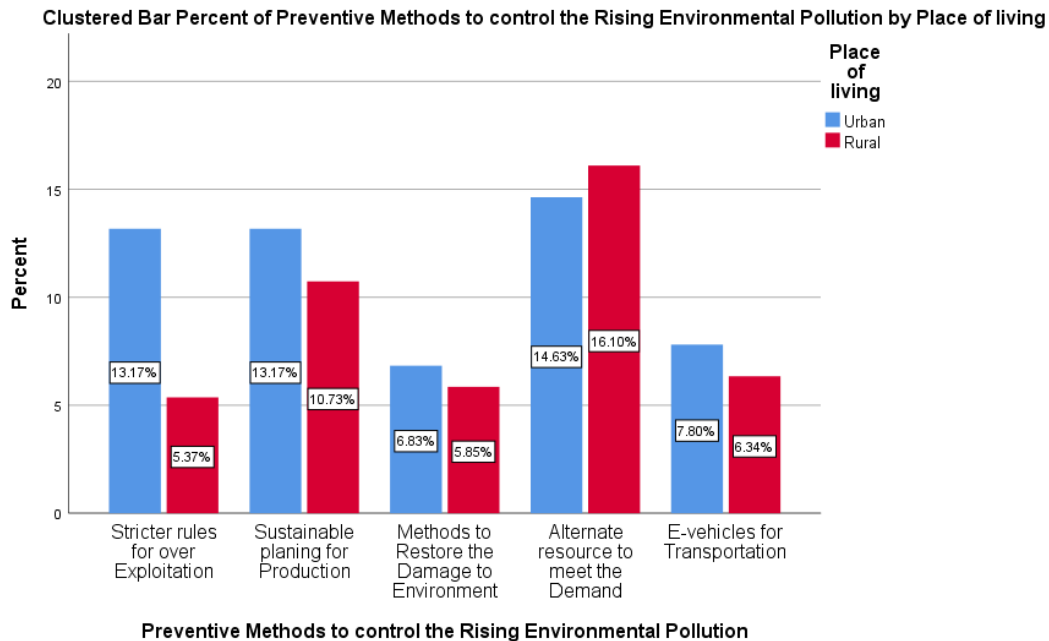**LEGEND :** Graph showing the Most affecting cause of rising pollution post covid by age.

FIGURE 3

LEGEND : Graph presentation showing the most common health effects due to increased pollution by educational qualification.
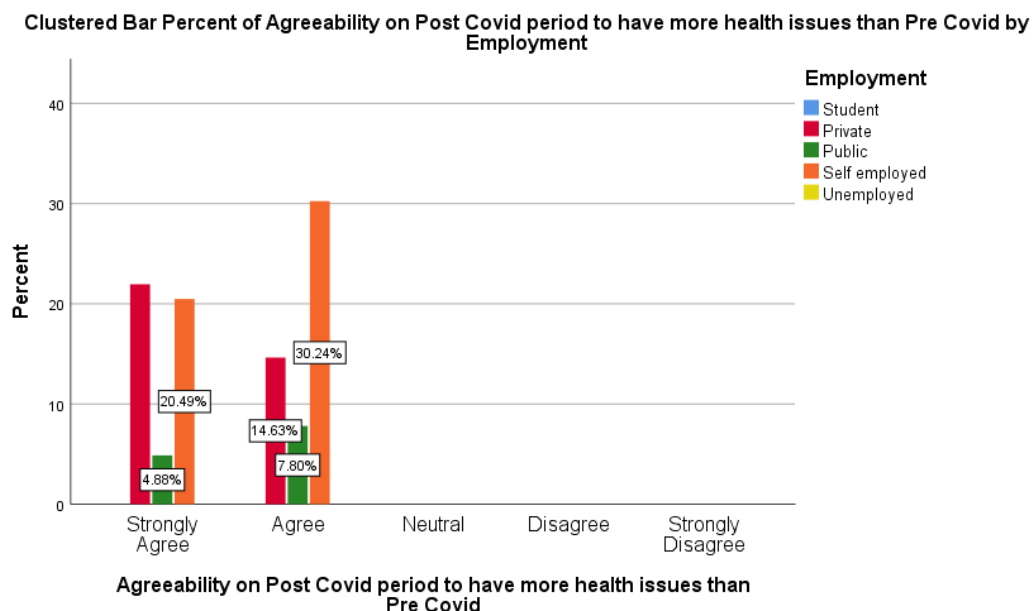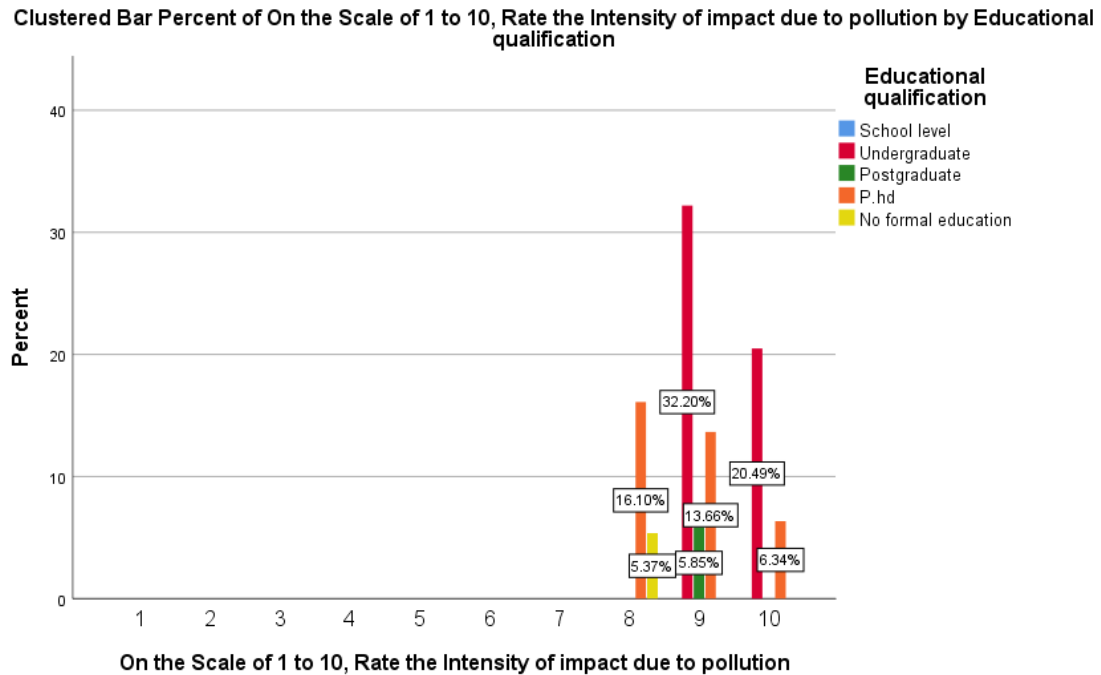
FIGURE 4

Clustered Bar Percent of Preventive Methods to control the Rising Environmental Pollution by Place of living

LEGEND : Graph presentation showing the preventive methods to control the rising environmental pollution by place of living.

FIGURE 5

Clustered Bar Percent of Agreeability on Post Covid period to have more health issues than Pre Covid by Employment
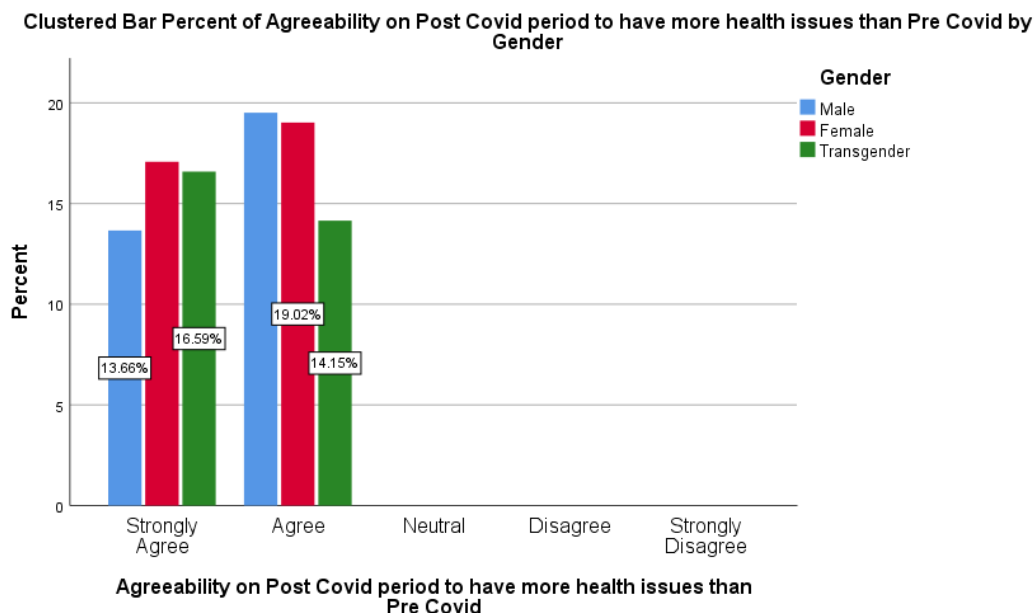
LEGEND : Graph presentation showing the agreeability on post covid period to have more health issues than pre-covid by employment.
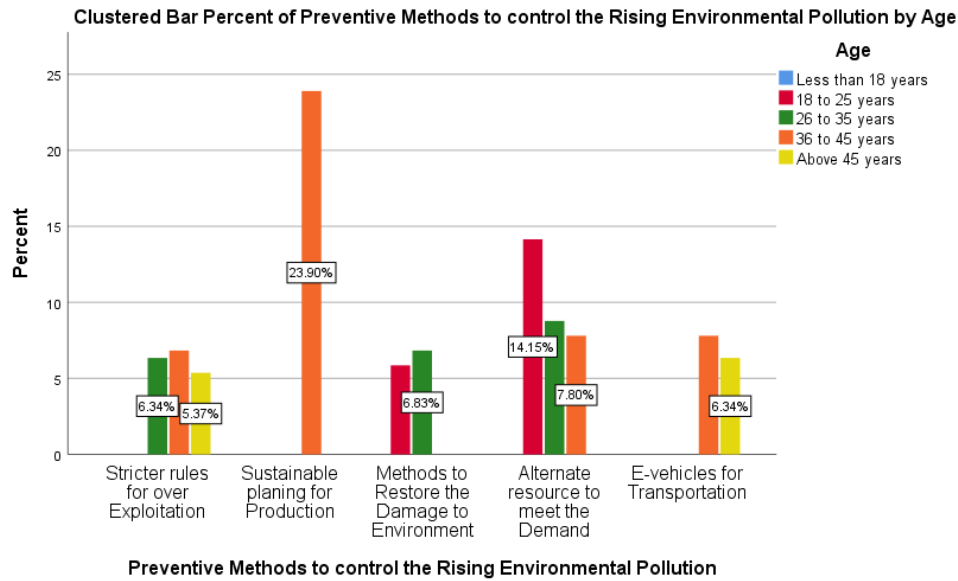
FIGURE 6

LEGEND : Graph showing the rating on the intensity of impact due to pollution by educational qualification.
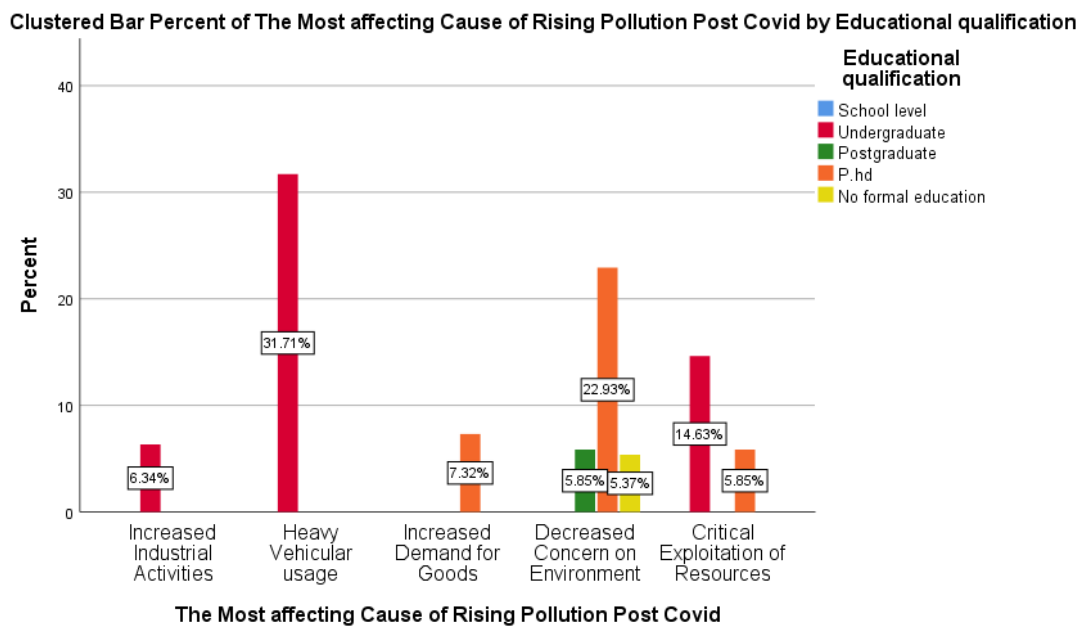
FIGURE 7

LEGEND : Graph presentation showing the agreeability on post covid period to have more health issues than pre covid by gender.
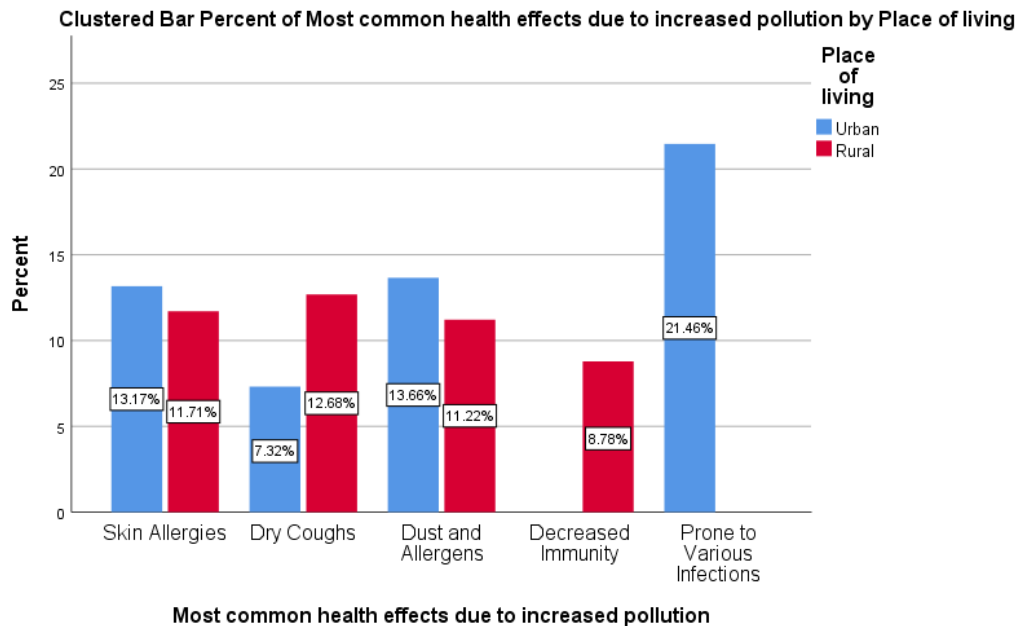
FIGURE 8

LEGEND : Graph showing the Preventive methods to control the rising environmental pollution by age.

FIGURE 9

LEGEND : Graph presentation showing the Most affecting cause of rising pollution post covid by educational qualification.

FIGURE 10

Clustered Bar Percent of Most common health effects due to increased pollution by Place of living

LEGEND: Graph showing the most common health effects due to increased pollution by place of living.

RESULTS

Tab 1, P value is lesser than 0.05, i.e., over 001. if the alternate hypothesis is accepted. Thus we can conclude that there is a significant relation between Edcuational Qualifiation and Preventive Methods to control the Rising Environmental Pollution**. Fig 1,** Most of the people belonging to the option male, female and transgender i.e., over 33.17%, 36.10% and 23.41%. **Fig 2,** Most of the people belonging to the option of 36 to 45 years have mostly chose the option of heavy vehicular usage and critical exploitation of resources i.e, over 24.08% and 13.66%. **Fig 3,** Most of the people belonging to the option of UG have mostly chose the option of prone to various infections i.e., over 21.46%. **Fig 4,** Most of the people belonging to both the option have mostly chose the option of Alternate sources to meet the demand and Sustainable planning for production i.e., over 14.63% and 13.17%. **Fig 5,** Most of the people belonging to the option of self employed and private have mostly chose the option of strongly agree and agree i.e., over 30.24% and 21.24% . **Fig 6,** Most of the people of belonging to the option of undergraduate have mostly chose the option of 9 i.e., over 32.20%. **Fig 7,** Most of the people belonging to all the option have mostly chose the option of strongly agree and agree i.e., over 15.59% and 19.02% **Fig 8,** Most of people belonging to the option of 36 to 45 years have mostly chose the option of sustainable planning for production i.e., over 23.90%.**Fig 9,** Most of the people belonging to the option of Undergraduate have mostly chose the option of heavy vehicular usage i.e., over 31.71%. **Fig 10,** Most of the people belong to the option of urban have mostly chose the options of prone to various infections i.e., over 21.46%.

DISCUSSION

Tab 1, From the chi Square test it is evident the more qualified you are, the more you are aware of Preventive Methods to control the Rising Environmental Pollution**.** Like people who are working in professions like doctors, engineers, lawyers, Scientists etc., are highly aware of the society and also about the Preventive Methods to control the Rising Environmental Pollution**. Fig 1,** Most of the people belonging to the option

male, female and transgender i.e., over 33.17%, 36.10% and 23.41%. This is because in recent days there is a significant increase in pollution levels due to high vehicular emissions, increased industrial effluents leading to atmospheric pollution and water contamination in high levels. **Fig 2,** Most of the people belonging to the option of 36 to 45 years have mostly chose the option of heavy vehicular usage and critical exploitation of resources i.e, over 24.08% and 13.66%. This is because most of the people belonging to the option 36 to 45 years are mostly prone to various health effects such as pollution related diseases such as lung related infections such as Emphesyma, Chronic obstructive Lung dieseases, etc. **Fig 3,** Most of the people belonging to the option of UG have mostly chose the option of prone to various infections i.e., over 21.46%. This is because most of the people are mostly affected due to prolonged exposure to such hazardous conditions would have weakened the immune system of people making them prone to various infections. **Fig 4,** Most of the people belonging to both the option have mostly chose the option of Alternate sources to meet the demand and Sustainable planning for production i.e., over 14.63% and 13.17%. This is because needs for the people and to protect the environment from the needs of the people is the major task for preventive such pollutions. Seeking to alternate methods to meet the demand would reduce the stress on the ongoing methods on the name of development. **Fig 5,** Most of the people belonging to the option of self employed and private have mostly chose the option of strongly agree and agree i.e., over 30.24% and 21.24% . This is because increased industrial activities and other activities which affects surroundings to an intolerable level, which causes various health conditions and environmental degradation. **Fig 6,** Most of the people of belonging to the option of undergraduate have mostly chose the option of 9 i.e., over 32.20%. This is because the impacts of such industrial activities takes a heavy toll on residents living under such conditions the cause may be minor such as dust allergies etc, but prolonged exposure to such conditions may lead to long term health complications. **Fig 7,** Most of the people belonging to all the option have mostly chose the option of strongly agree and agree i.e., over 15.59% and 19.02%. This is because the industrial activities have doubled comparing it to the precovid period which results in environmental damage and health conditions. **Fig 8,** Most of people belonging to the option of 36 to 45 years have mostly chose the option of sustainable planning for production i.e., over 23.90%. This is because the environmental concern have been less after post covid so as to meet the demand of the people in various aspects which lead to a huge increase in the indutrial activities. **Fig 9,** Most of the people belonging to the option of Undergraduate have mostly chose the option of heavy vehicular usage i.e., over 31.71%. This is because vehicles are the main source of transportation so as to carry goods and other industrial related activities. **Fig 10,** Most of the people belong to the option of urban have mostly chose the options of prone to various infections i.e., over 21.46%. This is because of decreased immune system which leads to easily affecting of diseases which may lead to various medical complications.

LIMITATION

The Major limitation of the study is the sample frame. The sample frame Collected through online platforms like sending mail, sending links via WhatsApp is the limitation of the study, most of the respondents have refused to give their response. Collection of data via online platforms is limiting the researcher to collect data from the field.

SUGGESTION

To enact stricter rules for the prevention of over exploitation, To have sustainable planing for production, To devise methods to restore the damage to the environment, To rely on Alternate resources to meet the demand, To planting trees as maximum as possible.

CONCLUSION

The increase in Environmental pollution in chennai after the lockdown, imposed due to corona pandemic have various effects in the life of chennaites, such as increased medical complications such as asthma, bronchitis, Chronic obstructive lung disease and various other diseases. The major objective of this research paper was to find the possible solution to reduce the increase in environmental pollution in chennai. from the findings of this research paper it is clear that due to high usage of vehicles for transportation, industrial activities, overpopulation, etc., there is high concentration of Carbon and lead emissions from both vehicular emissions and industrial activities, accumulation of heavy elements such as sulphur, cadmium, chromium, in agricultural soil due to high usage of pesticides etc… to prevent this the possible solutions are planting trees as maximum as possible, relying on alternate resources such as renewable energy, proper waste management or proper disposal of degradable and biodegradable waste. So to conclude, it is not only the responsibility of the government but also the responsibility of each and every citizen to safeguard nature and it's biosphere.

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