

Awareness of Environmental Pollution Among College Students in Cuddalore District - A Sociological Study

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Abstract

Man has been gifted with plenty of natural resources in the form of water, light, heat, soil, plants, animals, metals, minerals, fuels etc. These resources help us to lead a convenient life and urge us to invent different ways for their positive utilization. With the advent civilization our needs has got increased in its magnitude there by it has made us to over exploit the resources. This has resulted in the environmental degradation. The present study aims to find out the Awareness of Environmental Pollution among College Students in Cuddalore District - A Sociological Study. A samples of 100 students selected randomly were studied. An interview schedule method of survey was used to find out the level of Awareness of Environmental Pollution among College Students. Primary data were collected by using a structured interview scheduled and analysed with relevant interpretations. ANOVA, Independent Sample t-test, Correlation and regression analysis were applied to test the hypotheses. The findings and observations are the result and outcome of the analysis made during the research study.

Keywords: *Awareness, Environmental Pollution and Environmental Ethics*



Introduction

Environmental pollution could be termed as ecological crisis, which has paced threat to the properties of the basic amenities such as air, water and soil.

Earlier they were undisturbed un contaminated and supported every life to frame a joyful and peaceful life. But now due to man's activities the environment is no more pleasant. Rapid urbanization and industrialization accompanied with population explosion has resulted in polluted rivers, water less river beds, contaminated soil, exhausted natural resources and extinction of wildlife, animals and plants thus up setting the food chain, food web and in turn the whole living system. Man's activities have resulted in the following pollution of the basic amenities.

Pollution

Pollution is defined as the excessive concentration of foreign material which change the composition of Nature by physical or chemical methods and affects the health of man and also causes damage to the property. The word Pollution derived from the Latin word 'Pollutionem' meaning of to defile or make dirty. The term pollution is defined in various ways. Pollution is the unfavorable alteration of our environment, largely because of human activities. Pollution is defined as a deviation from the natural composition of a part of the environment, resulting in adverse effects on life. Pollution is an undesirable change in the physical, chemical or biological characteristics of our air, land and water causing harmful effect on our life or that of other desirable species and cultural assets. Pollution is the release of harmful substances or energy into the environment by man in quantity that damage health and resources.

Types of Pollution

Pollution can be classified either according to environment in which it occurs or according to pollutants by which pollution is caused.

Classification according to environment: when different spheres of the environment are affected by pollution, they can be categorized as (a) Air Pollution (b) Water Pollution (c) Soil or Land Pollution

Classification according to the pollutant: 1) Radio active pollution 2) Sewage pollution 3) Pesticide pollution or biocide pollution 4) Noise pollution 5) Thermal pollution 6) Plastic pollution 8) Marine pollution 9) Smoke pollution 10) Smog pollution 11) Chemical pollution 12) Industrial pollution 13) Metal toxicity pollution 14) Drug pollution 15) Estuarine or oceanic pollution 16) Biological pollution 17) Silt pollution 18) Soap and detergent pollution 19) Effluent pollution 20) Acid Rain 21) Oil pollution 22) Population pollution

The study of the interactions between the men, the natural and social environment is called Environmental Education. In recent years the word 'Environmental Education' has gained much popularity and the importance of the subject has been realised by researchers, scientists and educationists. Population, poverty and pollution are the three major problems now facing the country.

Chinese say about the need to educate: "If you plan for a year plant rice, if you plan for ten years, plant trees, but if you plan for a century educate the people". With this, we can say that educates the people about environment to protect the human race and the planet Earth.

According to North American association “Environmental education is a life long process that encourages people to explore, raise questions, investigate issues and seek solutions regarding environmental and related social problems”. Sharma R.C. has explained, “Environmental education is not an easy task, unlike other curriculum areas. It is universally accepted that environmental education should be interdisciplinary, drawing from biological, sociological, anthropological, economic, political and human resources”.

According to UNESCO “Environmental education is a way of implementing the goals of environmental protection. It is not a separate branch of science or field of study. It should be carried out according to the principles of life-long integral education”. Environmental Education is the education ‘about’ the environment ‘from’ the environment and ‘for’ the environment.

Ethics is a branch of philosophy. It deals with morals and values. It is a principle, which helps us to decide whether an action is good or bad. Humans are members of Earth’s living community in the same way and on the same terms as all other living things. Humans and other species are interdependent. Every human being has the right to decent life, but today there are elements in our environment that tend to militate against the attainment and enjoyment of such a life. The exacerbation of the pollution of environment can cause untold misery. Unhappiness and suffering to human beings crop up, simply because of our lack of concern for the common good and the absence of sense of responsibility and ethics for sustaining a balanced eco-system. “If we are to aspire to a better quality of life – one which will ensure freedom from want, from disease and from fear itself, then we must all join hands to stem the increasing toxification of earth”.

“An environmental ethics is basically a human ethics based on social justice for all without discrimination of race, sex, religion, ideology, caste, region or nation. Most current environmental problems are essentially a result of people’s activities and their attitude towards the socio-cultural and natural environments”. Environmental ethics refers to the responsibility to understand the environmental consequences of our consumption, and need to recognise our individual and social responsibility to conserve natural resources and protect the earth for future generations.

Related Review of Studies

Justice Krishna Iyer’s (2015) The unconscionable industrialization, the unpardonable deforestation and the inhuman extermination of living species betray an exploitative brutality and anti-social appetite for profit and pleasure in compatible with humanism. To day a bath in Yamuna and Gange is a sin against bodily health, not a salvation of the soul so polluted and noxious is there holy waters now.

Momsen and Janet Heushall (2015) have published a research paper on “Gender differences in environmental concern and perception”. They have

concluded that woman have a special relationship with the environment and are more motivated than men to work for environmental sustainability.

Biswajit Mohanty (2016) has published an article in the magazine “Down to Earth”, “Why has not been imposed on shark hunting”. He has outlined that sharks have a vital role in the marine ecosystem since they are the apex predator at the top of the marine food chain. But today they are almost extinct, being a major target of the fish hunters. Their slow breeding process is another factor, contributing to the rapid decline in shark population. He has also pointed out that shark hunting may be stopped with close co-ordination with coast guards.

Kamath (2016) has presented a research topic in the magazine “Down to Earth” about “Clear as Air”. He revealed that the people in the cities are suffering from air pollution. He also stated that a very few Doctors and Scientists have studied the actual effect of air pollution on people’s health. He has pointed out that the per capita health costs due to air pollution in Chennai are 783 per annum. The economic costs due to mortality in Delhi amount to Rs. 100 crore per annum. The health cost of air pollution in Mumbai is now estimated to be at the range of Rs.600-700 crore per year and vehicle emissions are responsible for 60 percent of this.

Vetriselvi, P. (2016). She has conducted a study of the environmental awareness of XI standard pupils of Mayiladuthurai Educational District at M.Phil. level. It is concluded that the higher secondary XI standard pupils of Mayiladuthurai Educational District have higher level of environmental awareness.

Paige, Kathy, Chartres and Mike (2016) have published a research topic about “Using sensory trails to develop environmental awareness”. They have revealed that students use their senses when working and thinking scientifically. They have recommended setting up sensory trails as a field trip and presents activity ideas.

Koichiro Matsuura, (2017) Director-General for UNESCO, at the opening session of the UNESCO and South African Ministry of Education parallel event “Educating for a Sustainable Future: Action, Commitment and Partnerships”, told we have learnt that sustainable development requires us to acknowledge the interdependent relationship between human needs and the natural environment, which means that no single development or environmental objective should be pursued to the detriment of others. Thus, the environment cannot be protected in ways that leave half of humanity in poverty. Similarly, there can be no long-term development on a depleted planet. The eradication of poverty and its attendant tragedies, and finding ways of leaving Planet Earth in a sustainable condition for our children and grandchildren, are the key goals of this Summit.

Kadar Asmal (2017) Education Minister of South Africa, at a major symposium during the World Summit on Sustainable Development said “This new vision of education emphasizes a holistic, interdisciplinary approach to developing the knowledge and skills needed for a sustainable future, as well as the necessary changes in values, behavior, and lifestyles. This vision requires us to re-orient

education systems, policies and practices in order to empower everyone – women and men, young and old – to make decisions and act in ways that are culturally appropriate and locally relevant in order to redress the problems threatening our common future”

Kumarasamy, K. Allagappa Moses, A. and Vasanthi, M. (2018) on Environment and Development in Asia and the Pacific, in Seoul, the Republic of Korea, pointed out Asia and the Pacific are experiencing the fastest economic growth of any region in the world. This growth has been a significant contributor to environmental pressures within the region, with serious consequences for biological diversity, human health and long- term economic prosperity. The challenge is to find ways to ensure that the old paradigm “grow first, clean up later” is replaced by an integrated approach that enables economic growth to support and reinforce sustainability rather than undermine it.

Objective of the Study

- To find out the awareness of environmental pollution among college students in Cuddalore district.
- To analyse the relationship between environmental awareness and environmental ethics of college students in Cuddalore district.

Methodology

There are different methods of educational research. The most commonly used, appropriate and scientific method, is known as descriptive research or normative research. In this method, the data related to the problems is collected from a large sample. This method helps to examine and analyze the various factors related to the problem with a view to arrive at certain conclusions and generalizations. The present study has been conducted as Descriptive survey method. The investigator administered the tools personally. The printed copies of the personal data sheet, along with the environmental awareness scale and environmental ethics scale were administered, with the permission of the Heads of the Institutions of the selected colleges of Cuddalore District.

The pupils were asked to assemble in a separate room; the instruction regarding the tool was clearly given. The pupils were properly motivated so as to enable them to participate sincerely, to give real response. The pupils were requested and persuaded to go through the instructions, read each statement carefully and indicate their responses in the booklets itself. The completed questionnaire were collected from the pupils and scored properly by using the key. The scores were tabulated and statistically treated so as to enable the investigator to draw the meaningful conclusion, generalization and to make suitable suggestion.

A samples of 100 students selected randomly were studied. An interview schedule method of survey was used to find out the level of Awareness of Environmental Pollution among College Students. Primary data were collected by using a structured interview scheduled and analysed with relevant interpretations.

ANOVA, Independent Sample t-test, Correlation and regression analysis were applied to test the hypotheses.

Results and Discussion

Table – 1
Analysis of the environmental pollution awareness of male and female students

Gender	N	Mean	Standard Deviation	t-value	Significant at 0.01 level
Male	50	32.06	3.89	4.65	Significant
Female	50	35.66	4.76		

Source : Field Survey

Regarding the environmental pollution awareness of the sub sample of male and female students of Cuddalore district, the mean and standard deviation value of male students score found to be 32.06 and 3.89 respectively. For female students the mean and standard deviation value have been calculated and were found to be 35.66 and 3.76. In order to find out if the difference in the scores of environmental pollution awareness of male and female students is significant or not, the t-value was calculated. It is found to be (4.65) and it is significant at 0.01 level. Hence it is concluded that there is evident in the present study to show that there is a significant difference between male and female students in respect of environmental pollution awareness. Female students have a higher level of awareness than the male students.

Table – 2
Analysis of the environmental pollution awareness of Science and Arts group students

Group	N	Mean	Standard Deviation	t-value	Significant at 0.01 level
Science	62	35.65	3.62	5.18	Significant
Arts	38	33.84	4.03		

Source : Field Survey

Regarding the environmental pollution awareness of the sub sample of science and arts group students of Cuddalore district, the mean and standard deviation value of science group students score found to be 35.65 and 3.62 respectively. For Arts group students the mean and standard deviation value have been found to be 33.84 and 4.03.

In order to find out if the difference in the scores of environmental pollution awareness of science group and arts group students is significant or not, the t-value was calculated. It is found to be (5.18) and it is significant at 0.01 level. Hence it is concluded that there is evident in the present study to show that there is a significant difference between science group and arts group students in respect of environmental pollution awareness. Science group students have a higher level of awareness than the Arts group students.

Table – 3
Analysis of the environmental pollution awareness community group college students

Community	N	Mean	Standard Deviation	F-ratio	Significant at 0.01 level
BC	29	35.63	3.92	5.73	Significant
SC	36	34.18	3.67		
MBC	20	34.19	4.04		
OC	15	35.44	2.73		
Total	100	34.86	3.90		

Source : Field Survey

Regarding the environmental pollution awareness of the sub sample of BC, SC, MBC and OC community students of Cuddalore district, the mean and standard deviation values of BC students score found to be 35.63 and 3.92 respectively, the mean and standard deviation value of SC students score found to be 34.18 and 3.67 respectively, the mean and standard deviation value of MBC students score found to be 34.19 and 4.04 respectively and the mean and standard deviation value of OC students score found to be 35.44 and 2.73 respectively.

It is inferred from the table that BC and OC community students scored higher mean values (35.63 and 35.44) than the other community students. This is also proved by the obtained F-ratio (5.73), which is significant at 0.01 level. Hence the stated hypothesis is rejected. So, students differ in their environmental pollution awareness on the basis of community. The result concluded that OC and BC community students have high level of environmental awareness than the other communities.

Table – 4
Analysis of the environmental pollution awareness of rural and urban college students

Locality	N	Mean	Standard Deviation	t-value	Significant at 0.01 level
Rural	39	33.82	4.06	5.87	Significant
Urban	61	35.82	3.50		

Source : Field Survey

Regarding the environmental pollution awareness of the sub sample of rural and urban college students of Cuddalore district, the mean and standard deviation value of rural college students score found to be 33.82 and 4.06 respectively. For urban college students the mean and standard deviation value have been calculated and were found to be 35.82 and 3.50.

In order to find out if the difference in the scores of environmental awareness of rural college and urban college students is significant or not, the t-value was calculated. It is found to be (5.87) and it is significant at 0.01 level. Hence it is concluded that there is evident in the present study to show that there is a

significant difference between rural and urban students in respect of environmental pollution awareness. Urban students have a higher level of environmental pollution awareness than the rural students.

Table – 5
Analysis of the environmental pollution awareness of the college students of Cuddalore district with reference to their religion

Religion	N	Mean	Standard Deviation	F-value	Significant at 0.01 level
Hindu	68	34.89	3.86	5.487	Significant
Islam	15	31.33	4.06		
Christian	17	35.88	3.74		
Total	100	34.86	3.90		

Regarding the environmental pollution awareness of the sub sample of various religion students of Cuddalore district, the mean and standard deviation value of Hindu religion students score found to be 34.89 and 3.86 respectively, the mean and standard deviation value of Islam religion group students score found to be 31.33 and 4.06 respectively, the mean and standard deviation value of Christian religion students score found to be 35.88 and 3.74 respectively.

It is inferred from the table that Christian and Hindu religion students scored higher mean values (35.88 and 34.89) than the other religion students. This is also proved by the obtained F-ratio (5.487), which is significant at 0.01 level. Hence the stated hypothesis is rejected. So, students differ in their environmental pollution awareness on the basis of religion. The result reveals that Christian and Hindu religion students have high level of environmental pollution awareness.

Table – 6
Showing the correlation between students demographic characters and their level of environmental pollution awareness and environmental ethics.

Demographic variable	Environmental Pollution Awareness	Environmental Ethics
Gender	.20**	.21**
Group	-.23**	-.29**
Parents Education	.25**	.14**
Locality	.26**	.15**
Community	-.13**	-.07
Religion	.04	-.06
Parents Occupation	.09*	.05

Source : Field Survey

** Significant at 0.01 levels

* Significant at 0.05 levels

The above table shows that the inter-correlation between students demographic Variables and environmental pollution awareness and environmental ethics. The result shows that Students Gender, Group, Parents Education, Locality

and community are significantly correlated with environmental pollution awareness and environmental ethics.

Table – 7
Stepwise regression analysis predicting awareness of environmental pollution and student demographic variables

Sl.No	Step/Source	Cumulative R ²	ΔR ²	Step t	P
1.	Parents Education	0.035	0.022*	3.242	0.01
2.	Gender	0.039	0.034*	2.664	0.01
3.	Parents Occupation	0.045	0.026*	2.772	0.01

Source : Field Survey

* P < 0.01

Constant value = 21.614

Three variables namely parents education, gender and parents occupation have significantly contributed for predicting the awareness of environmental pollution. The variable parents education predictive value of awareness of environmental pollution seems to be 0.035, when paired with the variable gender it is 0.039 and with parents occupation 0.045. The predictive value of these variables separately is 0.01.

Implications and Conclusion

The present investigation has clearly indicated and thrown much light on environmental pollution awareness of college of Cuddalore District. There should be a strong need for the introduction of environmental education in all levels of Educational system. The main source of environmental pollution awareness is Television. Measures should be taken to provide environmental awareness through other sources such as newspaper Radio and Textbook etc. Cleanliness is next to Godliness, motivate the students to develop a higher education of awareness about health, hygiene, cleanliness of themselves and about environment. To ensure students participation and co-operation, it is essential that special workshops are arranged through which students are apprised, consulted and their views and co-operation sought in keeping their environment clean. For a healthy life of citizen, clean environment is must. In this critical phase, plants offer a handy tool to solve this problem with low cost. Pupils should aware of this above fact. Plants vary in their sensitivity to various types of pollution. Some plants are very sensitive to a specific pollutant and develop characteristic symptoms. Some plants are resistant to pollutants.

Terrace gardens enriched by garbage turned into vermi-compost will help pollution free environment should be taught. By conducting workshops, seminars and campaigning through mass media will create an environmental awareness among students. The following recommendations are furnished by the researcher for the students of Cuddalore District. The rural students have low level of environmental awareness. So the teachers, Government and Voluntary Organizations try to conduct some training programs and seminars to create awareness among those students. Further Government college students have less

environmental awareness than Private college students. Therefore the Government college authorities take steps and provide opportunities to create environmental awareness among the students.

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