



Adolescents' Awareness on Environmental Issues

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ABSTRACT: Environmental issues have been elaborated as the harmful effects to earth and its natural systems due to the actions of humans. Although climate change can also occur from natural causes, human behaviour has led to an increase in greenhouse emissions. The last few decades have seen an exponential exacerbation in the human population in India generally, and particularly in Bangalore resulting in unprecedented, rapid spurt in urbanization and industrialization. The study was envisaged with the objectives to assess the environmental issues known to the adolescents, find out their knowledge regarding conservation of natural resources, ascertain their views of humans harming the environment, and determine their sources of information about environmental pollution. The survey method and questionnaire were the tools used. A sample of 625 adolescents, both boys and girls were selected for the study. Salient findings revealed that most of the adolescents were aware of environmental issues like air, water, soil, noise, radioactive and chemical pollutions. Majority of the adolescents knew that looking after the natural resources and protecting them from damage was termed as conservation. The primary source of information for the adolescents regarding environmental pollution was from newspaper and magazine articles, as well as from the school syllabi and textbooks.

KEYWORDS: Environmental pollution, Adolescents, Natural resources, Conservation, Global warming

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I. INTRODUCTION

Environmental pollution is not a new phenomenon, yet it remains the world's greatest problem facing humanity, and the leading environmental causes of morbidity and mortality. Man's activities through urbanization, industrialization, mining, and exploration are at the forefront of global environmental pollution. Both developed and developing nations share this burden together, though awareness and stricter laws in developed countries have contributed to a larger extent in protecting their environment. [1]

Pollution can take the form of chemical substances or energy, such as noise, heat, or light. Pollutants, the components of pollution, can be either foreign substances/energies or naturally occurring contaminants. [2] [3]

Environmental issues are harmful effects of human activity on the biophysical environment. Environmental protection is a practice of protecting the natural environment on the individual, organizational or governmental levels, for the benefit of both the environment and humans. Environmentalism, a social and environmental movement, addresses environmental issues through advocacy, education and activism. [4]

Degradation of the environment results in many problems; therefore, it is of utmost importance that remedial solutions be sought to handle these issues; hence Environmental Education is the panacea for combating these problems. The general public, especially the youth of today, must be made aware of these issues to help resolve this constantly deteriorating predicament.

Therefore, this study was taken up with the following objectives:

- Assess the awareness of environmental issues by the adolescents.
- Find out the adolescents' knowledge regarding conservation of natural resources.
- Ascertain the adolescents' views of humans harming the environment.
- Determine the adolescents' sources of information regarding environmental pollution.

II. METHODOLOGY

The study was limited to 625 adolescents, both boys and girls within 12-16 years from selected high schools in Bangalore city, studying in SSLC, ICSE and CBSE syllabi. The research design comprised of the survey method, and the questionnaire was the tool utilized.

SALIENT FINDINGS OF THE STUDY

Characteristics of the Adolescents' Age, Gender and School Syllabus. The age range of the adolescents was found to be between 12 to 16 years, with 54 percent of boys and 46 percent girls. Forty percent of the adolescents were from SSLC and ICSE schools with 20 percent being from CBSE schools. Majority of them were from nuclear families, and most of the adolescents' parents were degree holders.

TABLE – 1: Adolescents' Awareness on Pollution Issues

N=625

No.	Type of Pollution	Degree of Awareness					
		Fully		Partially		Not at all	
		N	%	N	%	N	%
1	Air pollution	318	50.9	307	49.1	0	0.0
2	Water pollution	328	52.5	297	47.5	0	0.0
3	Soil pollution	218	34.9	407	65.1	0	0.0
4	Noise pollution	281	45.0	344	55.0	0	0.0
5	Radioactive pollution	47	7.5	248	39.7	330	52.8
6	Chemical pollution	79	12.7	322	51.5	224	35.8
7	Vehicular pollution	228	36.5	285	45.6	112	17.9

From table 1, it was observed that 50.9 percent of the adolescents were fully aware of air pollution with 49.1 percent being partially aware. None of the adolescents were completely unaware of air pollution, water pollution, soil pollution or noise pollution. A higher percentage (52.5% and 45%) of the adolescents was fully aware of water and noise pollution respectively. Regarding soil, radioactive, chemical and vehicular pollution; 34.9 percent, 37.7 percent, 12.6 and 36.5 percent were fully aware respectively.

TABLE –2: Adolescents' Knowledge regarding Conservation of Natural Resources

n=625

Characteristics	Adolescents	
	Number	Percentage
Looking after natural resources and protecting them from damage		
Protection	206	33.0
Conservation	376	60.2
Development	26	4.1
Sustainability	17	2.7
Things which decompose naturally		
Non-biodegradable	22	3.5
Biodegradable	535	85.6
Renewable	51	8.2
Non-renewable	17	2.7
Total	625	100.0

It was ascertained from Table 2 that majority of the adolescents (60.2%) knew that looking after the natural resources and protecting them from damage was termed conservation. Majority (85.6%) of the adolescents elucidated that things which decompose naturally were called biodegradable. Almost all the adolescents (93.1%) knew that the environmentalist is a person who is interested in the conservation of the total ecosystem. Most of the students were aware of the importance and benefit of the trees toward society, the environment and oneself, according to the study by Thathong et al. (2014) [5] which correlates with the adolescents' perception that looking after the natural resources and protecting them from damage is termed 'conservation'.

TABLE – 3: Adolescents' Views of Humans Harming the Environment

N=625

No.	Impact of Human behaviour on Environment	Adolescents (percent) Ranking						Average	Preferential Ranking
		1 st	2 nd	3 rd	4 th	5 th	6 th		
1	Destruction of rainforests and other natural areas	34.2	19.8	12.8	13.4	9.6	10.1	2.75	I
2	Erosion of topsoil by wind and water	5.1	14.4	15.7	23.4	19.8	21.6	4.03	VI
3	Increase of global warming	31.5	22.6	15.5	8.5	7.2	14.7	2.81	II
4	Acid precipitation changed the soil and water PH in many countries	9.6	14.4	18.6	18.2	21.6	17.6	3.81	IV
5	Depletion of groundwater sources	7.2	11.8	24.0	21.9	21.0	14.1	3.80	V
6	Human health impacts due to smog and poisonous emissions	12.3	17.0	13.4	14.6	20.8	21.9	3.80	III

** Significant at 1% level

NOTE: $W = 0.0193$, $\chi^2_{cal} = 285.31$ **, $\chi^2(0.01, 5 \text{ df}) = 15.086$

In Table 3, it was evident that the preferential ranking indicates that destruction of the rainforests and other natural areas showed first ranking; followed by increase in global warming as second ranking; human health impacts due to smog and poisonous emissions, third ranking; acid precipitation changing the soil and water PH in many countries as fourth ranking; depletion of groundwater sources, fifth ranking; and erosion of topsoil by wind and water given the last ranking.

The preferential rankings subjected for statistical test reveals there exists a significant difference in the components of human behaviour on the environment ($p < 0.01$). These results could be corroborated with the study by Kilinc et al. (2013) [6] who cited that environmental degradation stemming from anthropocentric causes threatened the biodiversity more than ever before. Results showed that school students most commonly preferred species-focused definitions of biodiversity and understood biodiversity loss through such various conceptual patterns as 'balance of nature', 'forest', 'global warming', 'hunting' and 'indirect conservation'; which was consistent with the results of the study that adolescents held strong views of humans harming the environment in diverse ways.

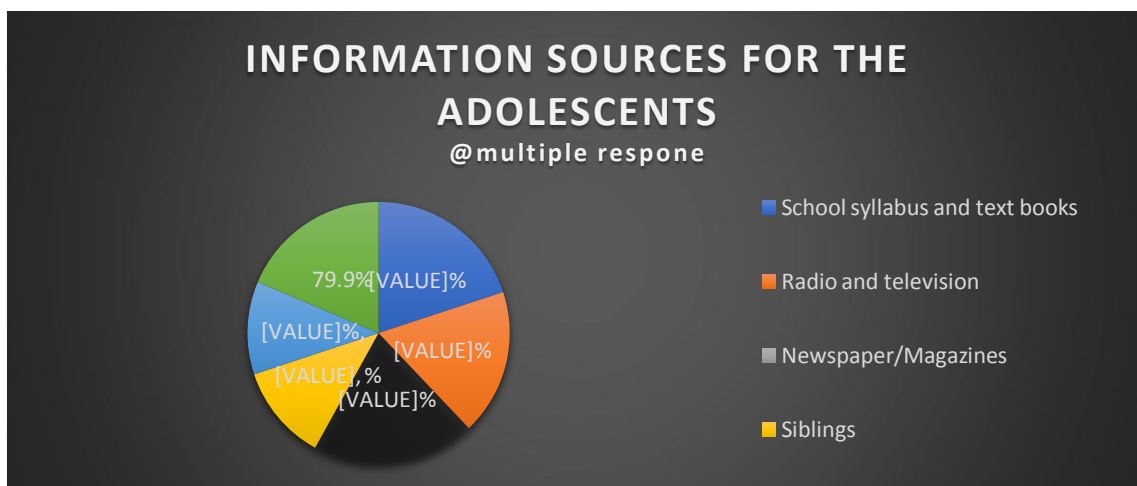
TABLE – 4: Sources of Information on Environmental Pollution

N=625

No.	Source of Information @	Adolescents	
		Number	Percentage
1	School syllabus and text books	533	85.3
2	Radio and television	480	76.8
3	Newspaper/Magazines	538	86.1
4	Siblings	317	50.7
5	Friends	306	49.0
6	From the Internet/Other reference books	498	79.7

@ Multiple Response

Results of Table 4 and Fig. 1 indicated that majority of the adolescents conveyed that their primary source of information regarding environmental pollution was from newspaper and magazine articles (86.1%), as well as from the school syllabi and textbooks respectively (85.3%). Chan (2000) [7] stated that results indicated that appropriate content, updated information, attractiveness to students and inclusion of a teachers' guide were considered important criteria in deciding the use of the teaching kits/materials on environmental aspects in schools. The study validates the adolescents' viewpoint that school syllabi and textbooks were one of their primary sources of information regarding environmental pollution.



III. CONCLUSION

- Most of the adolescents were aware of environmental issues like air, water, soil, noise, radioactive and chemical pollutions.
- Majority of the adolescents knew that looking after the natural resources and protecting them from damage was termed as conservation.
- The adolescents' views of humans harming the environment ranked destruction of the rainforests and other natural areas firstly, followed by increase in global warming and human health impacts due to smog and poisonous emissions.
- Majority of the adolescents conveyed that their primary source of information regarding environmental pollution was from newspaper and magazine articles, as well as from the school syllabi and textbooks.

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