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Research article

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A comparative study to assess the knowledge regarding environmental pollution among rural and urban people in Bangalore with a view to develop information guide sheet.

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ABSTRACT

The environment is everything around us and the quality of our life depends heavily on the quality of our environment. Environmental pollution is one the biggest problem the world faces today. It is an issue that troubles and economic, physical of our lives. The contamination of environment is also being linked to some of the disease that are currently¹. The aim of the study is to assess the knowledge regarding environmental pollution among rural and urban people. A sample of 100 adults were conveniently selected out of that 50 from rural 50 from urban. An information guide sheet was developed emphasizing the various components like air pollution, water pollution, noise pollution, soil pollution was given to participants and their relatives.

Keywords: Knowledge, Environmental Pollution.

INTRODUCTION

The rapid growing population and economic development is leading to a number of environmental issues of the India rapid growth of urbanization and industrialization [1], expansion and massive intensification of agriculture, and the destruction of forests [2]. Nearly half the world's people are crowded into urban areas, often without adequate sanitation, and are exposed to epidemics of such diseases as measles and flu. With 1.2 billion people lacking clean water, water borne infections account for 80% of all infectious diseases. Increased water pollution creates breeding grounds for malaria-carrying mosquitoes, killing 1.2 million to 2.7 million people a year, and air pollution kills about 3 million people a year [4]. Unsanitary living conditions account for more than

5 million deaths each year, of which more than half are children. Air pollution from smoke and various chemicals kills 3 million people a year. Soil is contaminated by many chemicals and pathogens, which are passed on to humans through direct contact or via food and water. Increased soil erosion worldwide not only results in more soil being blown but spreading of disease microbes and various toxins [3]. The environmental pollution is the major health problem in the world. The knowledge regarding environmental pollution among the adults is very important in preventing the possible consequences of environmental pollution. Thus the researcher felt to assess and its association with selected demographic variables to update the knowledge of adults through health information guide sheet [5].

MATERIALS AND METHODS

Research design adopted for the study was non experimental research design. The information gathered from the adult at Ittamedu rural and channasandra urban under Bangalore district in Karnataka state using convenient sampling method 100 adults were selected 50 from rural and 50 from urban. The data collected by the interview schedule technique by using semi structured questionnaire consists of demographic variables and assessing the knowledge of environmental pollution. It consists of, air pollution, water pollution, noise pollution, soil pollution. The interpretations of score were like <50% in adequate, 51-75% moderately adequate, >76% adequate knowledge. The reliability of the tool was 0.8.

The period of data collection was extended till 4 weeks .The researcher initially established rapport with the study samples and assured confidentiality and the purpose of the study was explained to

samples. The data were collected from both rural and urban by interview schedule by using semi structured questionnaire to find out the knowledge of environmental pollution. An information guide sheet was developed emphasizing the various components like air pollution, water pollution, noise pollution, soil pollution was given to participants and their relatives.

Ethical consideration

The permission was obtained from the institutional ethics committee. Before collecting data, adults were explained and consent was taken. Confidentiality was assured.

Data analysis

Descriptive statistics- frequency, percentage mean, standard deviation used to assess the knowledge level. paired 't' test., chi-square test used to check the association between knowledge level and selected demographic variables.

Table I. Association between level of knowledge regarding environmental pollution among rural people and demographic variables (Rural)

Demographic variables	Rural people Level of knowledge							Total	Chi square test
	Inadequate		Moderate		Adequate				
	n	%	n	%	n	%			
Age	25 - 35 yrs	9	34.6%	16	61.5%	1	3.9%	26	$\chi^2=14.37$ P=0.01** DF= 2 significant
	35 - 45 yrs	5	31.2%	10	62.5%	1	6.3%	16	
	45 - 55 yrs	0	0.0%	4	50.0%	4	50.0%	8	
Sex	Male	6	30.0%	11	55.0%	3	15.0%	20	$\chi^2=0.44$ P=0.80 DF= 2 notsignificant
	Female	8	26.7%	19	63.3%	3	10.0%	30	
Religion	Hindu	14	28.0%	30	60.0%	6	12.0%	50	$\chi^2=0.0$ P=1.00 DF= 2 notsignificant
	Christian	0	0.0%	0	0.0%	0	0.0%	0	
	Muslim	0	0.0%	0	0.0%	0	0.0%	0	
Education qualification	Primary	9	75.0%	2	16.7%	1	8.3%	12	$\chi^2=23.32$ P=0.001*** DF= 2 significant
	Secondary	5	14.7%	26	76.5%	3	8.8%	34	
	Collegiate	0	0.0%	2	50.0%	2	50.0%	4	
Occupation status	Employees	2	28.6%	4	57.1%	1	14.3%	7	$\chi^2=5.49$ P=0.48 DF= 2 not significant
	Business	1	10.0%	6	60.0%	3	30.0%	10	
	Agriculture	6	37.5%	9	56.3%	1	6.3%	16	
	Housewife	5	29.4%	11	64.7%	1	5.9%	17	
Source of information	Family / Friends / Relatives	5	35.7%	8	57.1%	1	7.1%	14	$\chi^2=2.89$ P=0.58 DF= 2 not significant
	Health care visitors	2	14.3%	9	64.3%	3	21.4%	14	
	Newspapers / Books / Medias	7	31.8%	13	59.1%	2	9.1%	22	

Table II: Association between level of knowledge regarding environmental pollution among urban people and demographic variables (Urban)

Demographic variables		Urban people Level of knowledge						Total	Chi square test
		Inadequate		Moderate		Adequate			
		n	%	n	%	n	%		
Age	25 - 35 yrs	3	16.7%	11	61.1%	4	22.2%	18	$\chi^2=9.41$ P=0.05* DF= 2 significant
	35 - 45 yrs	1	7.7%	5	38.5%	7	53.8%	13	
	45 - 55 yrs	0	0.0%	6	31.6%	13	68.4%	19	
Sex	Male	0	0.0%	8	38.1%	13	61.9%	21	$\chi^2=4.64$ P=0.10 DF= 2 notsignificant
	Female	4	13.8%	14	48.3%	11	37.9%	29	
Religion	Hindu	3	8.1%	17	45.9%	17	45.9%	37	$\chi^2=5.67$ P=0.22 DF= 2 notsignificant
	Christian	1	20.0%	0	0.0%	4	80.0%	5	
	Muslim	0	0.0%	5	62.5%	3	37.5%	8	
Education qualification	Primary	3	37.5%	4	50.0%	1	12.5%	8	$\chi^2=13.24$ P=0.01** DF= 2 significant
	Secondary	1	4.5%	9	36.4%	12	54.5%	22	
	Collegiate	0	0.0%	9	45.0%	11	55.0%	20	
Occupation status	Employees	0	0.0%	7	35.0%	13	65.0%	20	$\chi^2=9.29$ P=0.05* DF= 2 significant
	Business	0	0.0%	5	50.0%	5	50.0%	10	
	Housewife	4	20.0%	10	50.0%	6	30.0%	20	
Source of information	Family /Friends / Relatives	0	0.0%	8	38.1%	13	61.9%	21	$\chi^2=5.52$ P=0.24 DF= 2 not significant
	Health care visitors	1	20.0%	3	60.0%	1	20.0%	5	
	Newspapers / Books / Medias	3	12.5%	11	45.8%	10	41.7%	24	

RESULTS

- Over all rural people mean 17.74 SD 3.50 and mean percentage is 59.1%
- Over all urban people mean 22.62 SD 2.40 and mean percentage is 75.4%
- Paired t test analysis used to test the rural and urban score of knowledge. The 't' value is 8.13% (P < 0.001) shows that there is significant

difference between the knowledge regarding environmental pollution among rural and urban people. The percentage effectiveness is 16.3%

- The chi-square value shows that there will be a significant association between the knowledge regarding environmental pollution with their selected demographic variables.

Table III: Mean, standard deviation and student's independent-test comparison of knowledge score regarding environmental pollution among rural and urban people

various knowledge aspects	Urban (n=50)				Student's independent t-test
	Rural (n=50)		Urban (n=50)		
	Mean	SD	Mean	SD	
General information	3.58	0.99	4.24	0.72	t=3.81 , P=0.001*** DF=98, significant
Air pollution	4.64	1.29	6.04	0.90	t=6.29 , P=0.001*** DF=98, significant
Water pollution	2.54	0.61	3.18	0.56	t=5.45 , P=0.001*** DF=98, significant
Noise pollution	3.38	1.18	4.44	0.99	t=4.86 , P=0.001*** DF=98, significant
Soil pollution	3.60	1.03	4.72	0.76	t=6.19 , P=0.001*** DF=98, significant

Table IV: Comparison of overall knowledge score between urban and rural people.

Areas	Max score	Mean score	Percentage Difference in knowledge with 95% Confidence interval	Mean Difference in knowledge with 95% Confidence interval
Rural	30	17.74	16.3 % (3.8% -36.4%)	4.88(3.69 – 6.07)
Urban	30	22.62		

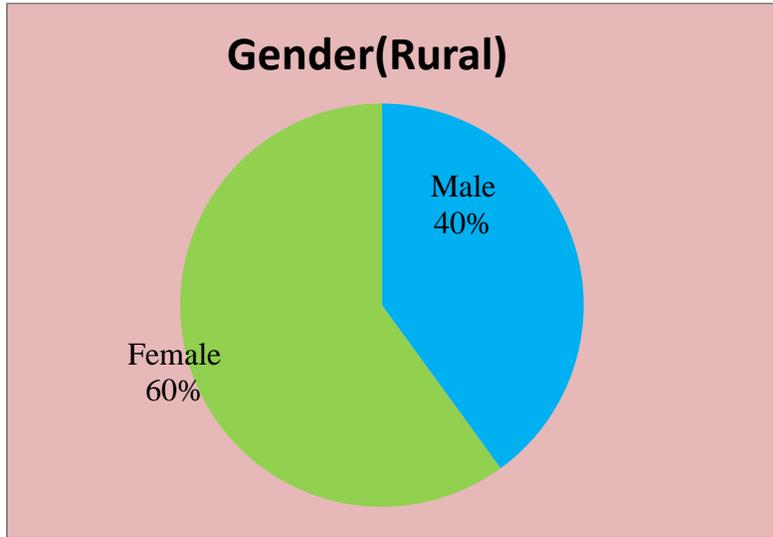


Figure 1 Percentage distribution of gender among rural people.

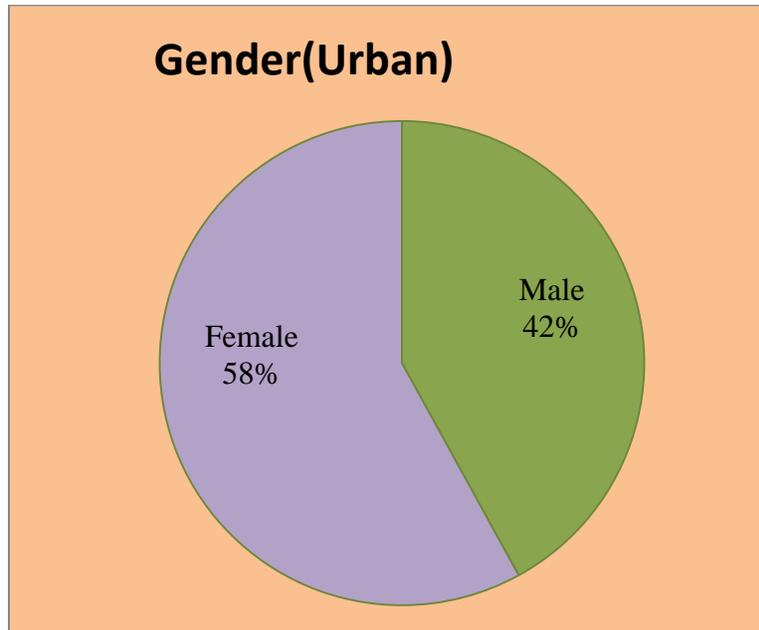


Figure 2 Percentage distribution of gender among urban people.

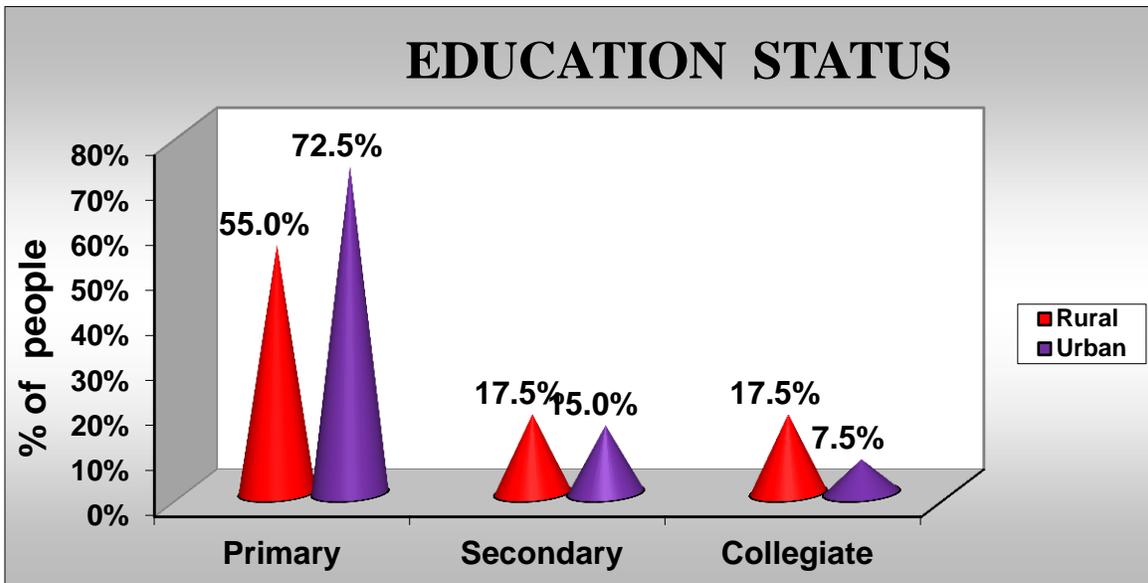


Figure 3 Percentage distribution of educational status among rural and urban people.

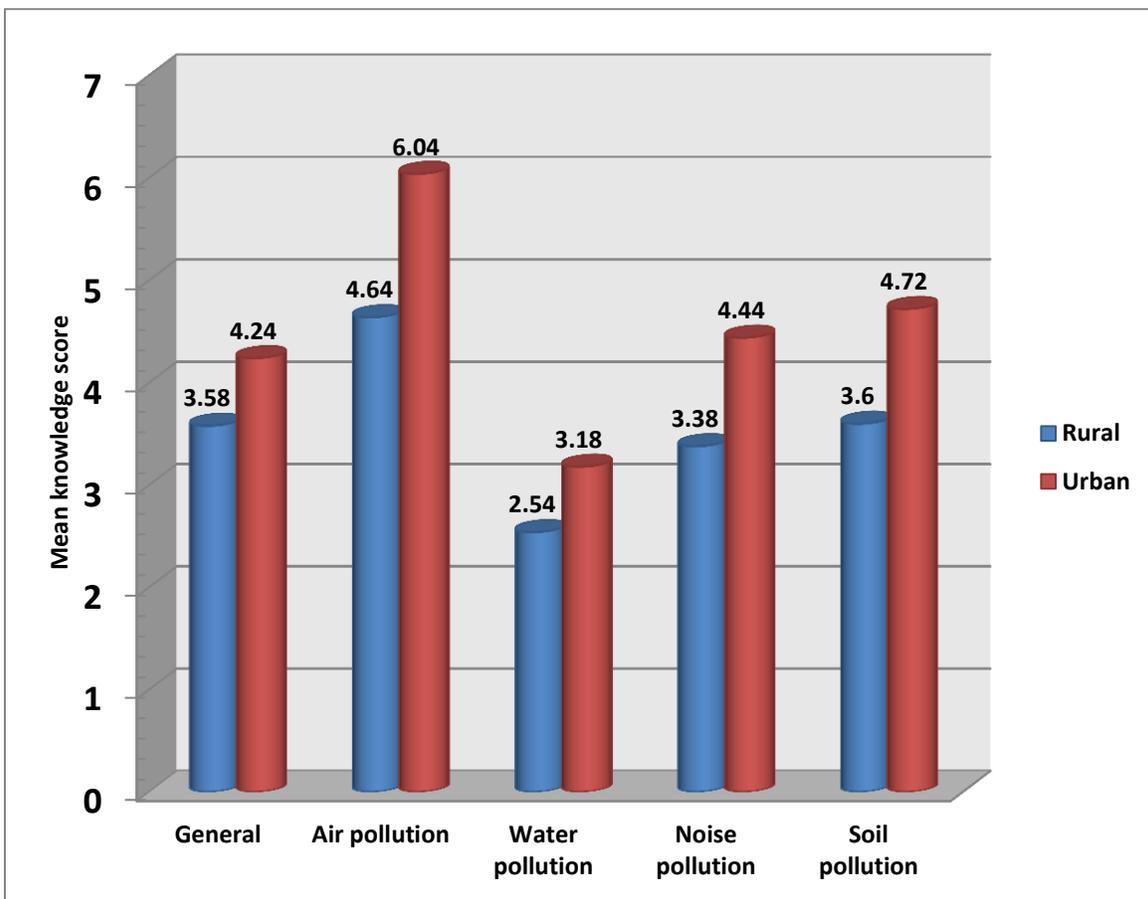


Figure 4 Mean value of comparison of environmental pollution knowledge score among rural and urban people.

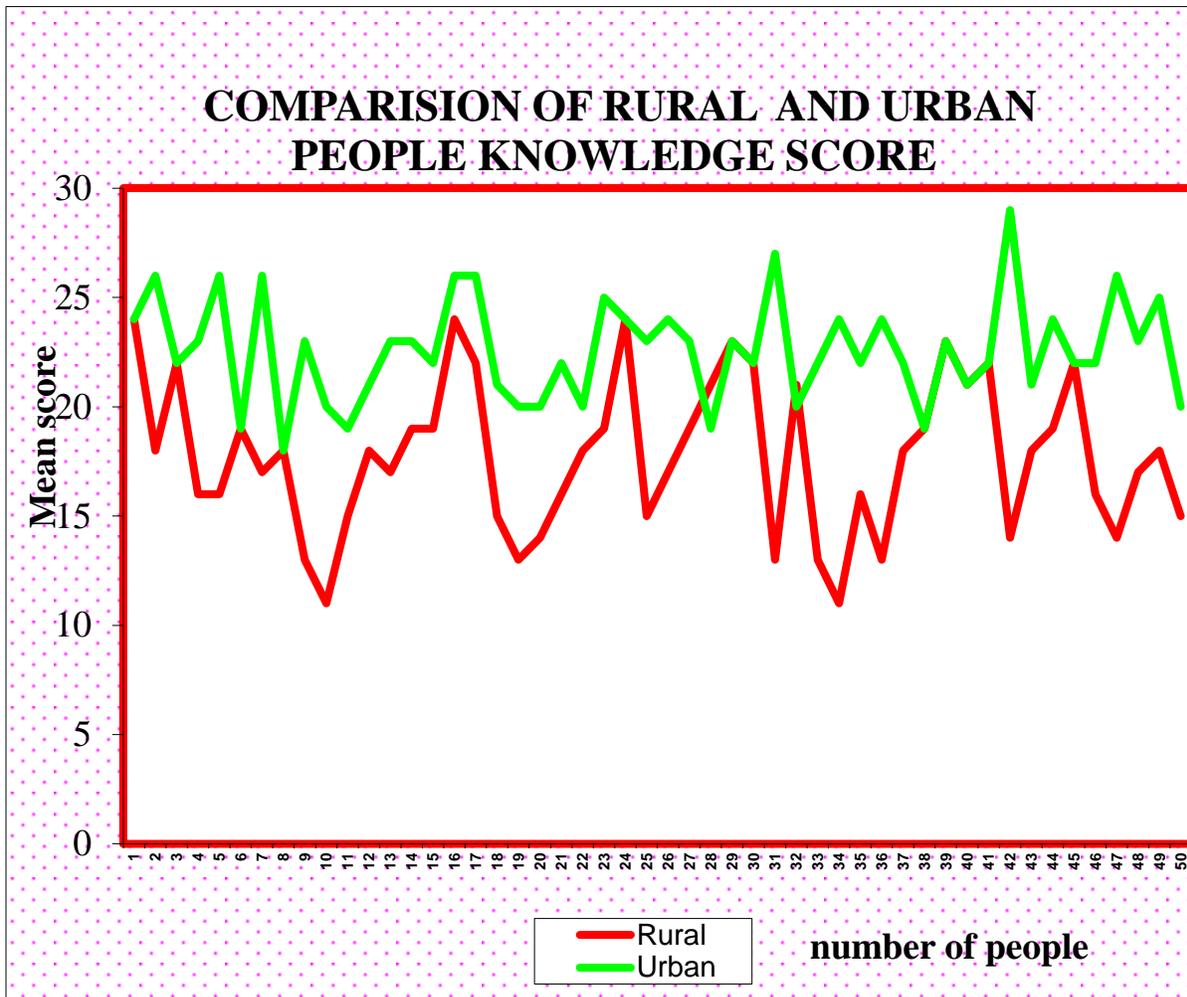


Figure 5 Line graph showing the distribution of the comparison of rural and urban people knowledge score among rural and urban people

DISCUSSION

The mean value of comparison of environmental pollution related knowledge among rural and urban people shows that, urban people are having 22.62 score and rural people are having 17.74 score. Difference is 4.88 score, it is statistically significant. Differences between urban and rural area score was analyzed using independent t-test. Urban people are having 16.3% more knowledge than rural people on environment pollution. Compares the urban and rural adults level of knowledge in Urban 8.0% of people are having inadequate knowledge and 44.0% of them having moderate knowledge and 48% of them having adequate knowledge. In Rural 28.0% of people are having inadequate knowledge and 60.0% of them having moderate knowledge and 12% of them having adequate knowledge. Statistical significance

was calculated using Pearson chi square test each domain wise percentage of knowledge on environmental pollution among rural people and urban people. They are having maximum knowledge difference in soil pollution (18.7%) and minimum knowledge difference in general information on environmental pollution (11.0%) the association between demographic variables and their level of knowledge among rural urban people. Age and Education are significantly associated with their level of knowledge. There is no association between their level of knowledge and selected demographic variables sex, religion, occupational status, source of information

Nursing implication

The nurse working in the community setting will be able to find opportunities to conduct mass

health awareness programme on prevention of environmental pollution through camps, rallies and mass health awareness programmes. Nursing administrator should recommend school and college authorities to include preventive programmes on environmental pollution as a part of the co-curricular activities. Nursing researchers are to be undertaken to assess the adults who are at risk of developing health illness due to environmental pollution.

Recommendations for further research

Recommendations for the further study include:

1. A similar study can be replicated on a large sample to generalize the findings
2. An experimental study can be undertaken with control group for effective comparison
3. A study can be conducted to find out the practices on observation check list on control of Environmental pollution.

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CONCLUSION

The environmental pollution is the major health problem in the world. The findings of the study recommended that further interventional approaches regarding the environmental pollution. Special information guide sheet related to the environmental pollution improves their knowledge in preventing the possible consequences of environmental pollution among the adults

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