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A Study to Assess the Knowledge of Adults Regarding the Health Hazards of Global Warming In Selected Urban Areas of Mangaluru: A Descriptive Study

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Abstract: Introduction: *Global warming is one of the most discussed topics in present world. Global warming is increasing day by day because of the changing climate and human malpractices against the environment. Industrial revolution has increased the amount of green house gases in atmosphere leading to increased radioactive forces from carbon dioxide, methane, troposphere ozone, chlorofluorocarbons and Nitrous oxide. Global warming is all about adverse climate change caused by the trapping of green house gases (like carbon dioxide) in the earth's atmosphere that affects biodiversity and poses a serious health hazard many deadly diseases such as malaria and those that cause diarrhea, which are particularly sensitive to climate change.*

Objectives: *This study attempts to assess the knowledge of adults regarding the health hazards of global warming. To find the association and knowledge of adults regarding the health hazards of global warming and selected demographic variables.*

Method: *this is a descriptive design with purposive sampling was used to collect the data from 100 adults regarding the health hazards of global warming. Data was collected using a structured knowledge questionnaire. Results were described by using descriptive and inferential statistics. The data was analyzed using SPSS version 13 and the results expressed as proportions.The theoretical framework for the study was modified and adopted from general system theory.*

Results: *Out of 100 respondents, majority 76% had showed moderate knowledge level regarding the health hazards of global warming, 16% of the samples had inadequate knowledge and only 8% of them had adequate knowledge. Overall Mean Knowledge score obtained by the respondents was 15.38 and SD was 4.271.*

Conclusion: *The overall findings of the study clearly 76% had showed moderate knowledge level regarding the health hazards of global warming. Thus to conclude the investigator has achieved the objective for assessing knowledge of adults regarding the health hazards of global warming*
Key words*: knowledge, adults, health hazards of global warming, SD: Standard deviation*

I. INTRODUCTION

Climate change is the biggest threat to nature and humanity in the 21st century. Climate change is everywhere. Today we are seeing the impacts of climate change around the globe - melting glaciers, rising sea levels, stronger storms, and higher floods, less snow north and more droughts south. Currently malaria, diarrhea, malnutrition flows related to climate change cause about 150,000world death annually, according to WHO. Global warming also increases the chance of air pollution. Higher temperature, increases ozone concentrations, the major component of "smog" changing weather pattern may also result premature mortality and cardio pulmonary diseases. Ozone is a particular concern because of its association with the following even for short exposure; they are air way irritation, coughing, reduction in lung function, aggravation of asthma and worsening of emphysema and bronchitis. Prolonged exposure may lead to permanent structural and cellular damage to the respiratory tract. Many diseases- carrying insects have time for additional reproductive cycles and have become more efficient at spreading diseases. A survey was carried out in Australia to assess the public's knowledge of global warming. The data were collected from a randomly recruited national sample of 810 Australian adults

via telephone using a CATI (computer assisted telephone interviewing) system and IQCA accredited (interview quality control Australia) interviewers. The results revealed that 51% of the samples had average knowledge regarding global warming. 37%of the samples had poor knowledge and 3% of the samples had very poor knowledge regarding global warming. This suggested the importance of giving education regarding global warming to those populations.

An epidemiological study was carried out in east Siberia to assess the relationship with extreme temperature and mortality. The long-term distributions of daily mean temperatures and daily mortality rate from all non-accidental causes, coronary heart diseases and cerebrovascular causes were analyzed during the study period of 2002 to 2010. Coronary heart disease mortality increased more than two-fold during the period of temperature waves, while non-accidental mortality increased by approximately 50%. The time lags between the temperature wave and observed increase in mortality varied between 8 and 14 days, which indicated that the health effects of temperature extremes were delayed rather than immediate. According to Indian meteorological department 2010 censes the annual green house gas emissions as follows , industrial processes 16.8% , power stations 21.3% , waste disposal and treatment 3.4% , land use and biomass burning 10.0% , residential , commercial and other sources 10.3% , fossil fuel retrieval, processing and distribution 11.3%, Agricultural byproducts 12.5%, Transportation fuels 14.0%.Each of us can reduce our contribution to global warming by using less greenhouse-gas-producing energy: driving less, choosing fuel efficient cars and appliances (like refrigerators and water heaters), and using solar energy. We can encourage our political and business leaders to institute policies that will save energy and develop alternative energy sources that do not release carbon dioxide. We can preserve existing forests and plant new ones. In view with the above need the investigator has taken a study to assess the knowledge of adults regarding the health hazard of global warming using structured knowledge questionnaire. If the adults gain knowledge regarding health effects of global warming, they will be able to teach their relatives & other members in community.

II. METHODS

A non-experimental descriptive survey design was used & Non -probability purposive sampling technique was adopted for 100 adults residing in urban areas of Mangaluru. Data was collected using a structured knowledge questionnaire, which consists of the 30 knowledge questions. Results were described by using descriptive and inferential statistics.

III. RESULTS & DISCUSSION

Out of 100 respondents, majority 76% had showed moderate knowledge level regarding the health hazards of global warming, 16% of the samples had inadequate knowledge and only 8% of them had adequate knowledge. The aspect wise mean knowledge scores of respondents knowledge regarding general information about global warming is 23.33%, Causes of global warming is 20%, effects of global warming is 40%& Preventive measures is 16.66%.The Overall Mean Knowledge score obtained by the respondents was 15.38 and SD was 4.271.

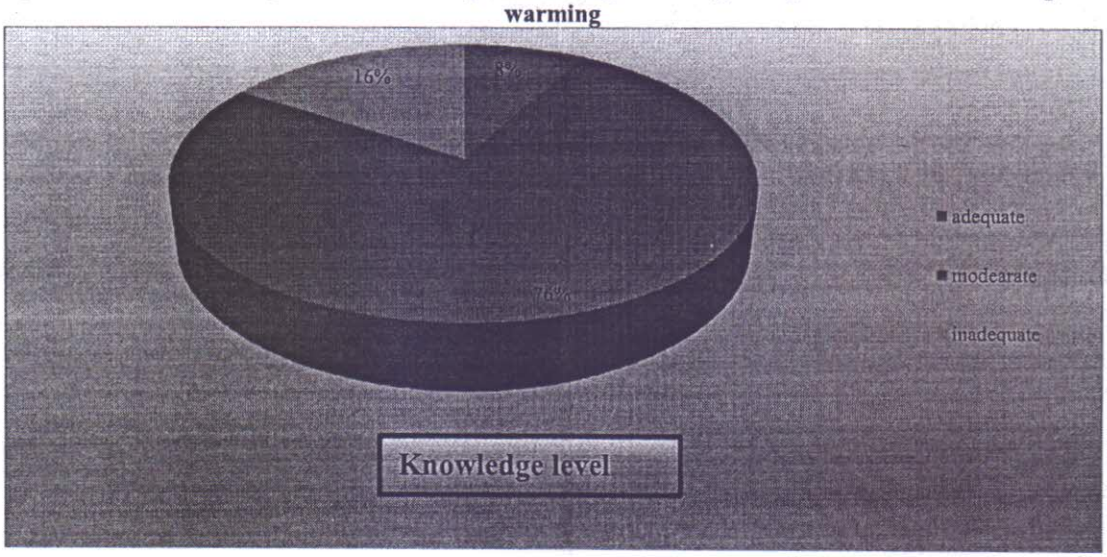
Table 1: Socio demographic characteristics of respondents

Sl.no	Demographic variables	Frequency(f)	Percentage (%)
1	**Age in years**		
	18- 24	30	30.0
	25- 31	31	31.0
	32- 38	16	16.0
	39- 45	23	23.0
2	**Gender**		
	Male	46	46.0
	Female	54	54.0
3	**Religion**		
	Hindu	30	30.0
	Christian	18	18.0
	Muslim	52	52.0
4	**Educational qualification**		
	No formal education	2	2.0
	Primary education	14	14.0
	Secondary education	17	17.0
	Higher secondary education	39	39.0
	Graduate	19	19.0
	Post graduate and above	9	9.0
5	**Type of family**		
	Nuclear	33	33.0
	Joint	37	37.0
	Extended	8	8.0
	Single parent family	22	22.0
6	**Occupation**		
	Government service	4	4.0
	Private service	22	22.0

	Business	28	28.0
	Unemployment	46	46.0
7	**Family income**		
	<1000	11	11.0
	1000- 2500	19	19.0
	2500- 5000	26	26.0
	>5000	44	44.0
8	**Number of owned vehicles**		
	One	46	46.0
	Two	21	21.0
	More than two	10	10.0
	No vehicles	23	23.0
9	**Previous knowledge**		
	Yes	37	37.0
	no	63	63.0

The frequency and percentage distribution of demographic characteristics of adults showed that, regarding the age most of them (31%) were in the age group of 25 - 31 years and majority 54% were females and 52% of the adults were belong to Muslim religion, 39% of the respondents had completed higher secondary education and 37% of them belongs to joint family, 46% of adults were unemployment, 44% of adults were having income >5000 rupees, Most of the adults, 46% owned only one vehicle, 63% of the respondents not had previous knowledge regarding health hazards of global warming.

Fig 1: Distribution of respondents according to knowledge level regarding the health hazards of global warming



Data presented in fig 1; shows that majority of respondents (76%) had showed moderate knowledge level regarding the health hazards of global warming, 16% of the samples had inadequate knowledge and only 8% of them had adequate knowledge. The data is also presented in the form of pie diagram

Table 2: Association between Demographic variables and Knowledge level regarding health hazards of global warming among adults

n=100

Sl no.	Demographic variables	Median (<16)	Median (≥16)	df	Chi-square Value (x^2)	P value
1	**Age in years**					
	18-24	14	18			
	25-31	12	17	3	0.9795	7.82
	32-38	6	10			
	39-45	12	11			
2	**Gender**					
	Male	20	26	1	0.0094	3.84
	Female	24	30			
3	**Religion**					

	Hindu	11	19			
	Christian	9	9	2	1.0153	5.99
	Muslim	24	28			
4	**Educational qualification**					
	No formal education	2	0			
	Primary education	10	3			
	Secondary education	8	10	5	14.2154*	11.07
	Higher secondary education	16	23			
	Graduate	6	13			
	Post graduate and above	2	7			
5	**Type of family**					
	Nuclear	14	19			
	Joint	16	21	3	4.4697	7.82
	Extended	6	2			
	Single parent family	7	15			
6	**Occupation**					
	Government service	1	3			
	Private service	10	13			
	Business	12	15	3	0.5580	7.82
	Unemployment	20	26			
7	**Family income**					
	<1000	5	6			
	1000-2500	8	12	3	0.5013	7.82
	2500-5000	13	14			
	>5000	17	25			
8	**Number of owned vehicles**					
	One	21	26			
	Two	10	10			
	More than two	3	7	3	1.2836	7.82
	No vehicles	9	14			
9	**Previous knowledge**					
	Yes	11	27			
	No	33	29	1	5.6359*	3.84
10	**Source of information**					
	Media	0	14			
	Magazines	4	9			
	Neighbours and friends	3	1	4	72.088*	9.49
	Health personnel's	2	2			
	Any other	2	1			

The data presented in Table 2 shows that there is a significant association between knowledge score and demographic variables, i.e, educational qualification (x^2= 14.2154, p= 11.07), previous knowledge (x^2= 5.635, p= 3.84) and source of information (x^2= 72.088, p= 9.49).The knowledge score is independent of all other variables, like age, gender, religion, type of family, occupation, family income, number of owned vehicles. Hence research hypothesis accepted for some variables such as educational qualification, previous knowledge and source of information.

IV. CONCLUSION

In the present study, the most of the subject (76%) had moderate knowledge, 16% has inadequate knowledge and 8% has adequate knowledge. The mean percentage of knowledge on the health hazards of global warming 51.266. There is a significant association between the knowledge and demographic variables i.e. educational qualification ($x^2_{(1)}$ = 14.2154, table value $x^2_{(1)}$ = 3.84), previous knowledge ($x^2_{(1)}$ = 5.635, table value $x^2_{(1)}$= 3.84) and source of information ($x^2_{(1)}$= 72.088, table value $x^2_{(1)}$= 3.84). There is no significant association with other demographic variables.

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