

A study to assess the Knowledge on Global Warming among general public at Alandur, Chennai, Tamil Nadu, India.

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ABSTRACT:

The study aimed to assess the level of knowledge on global warming among general public at Alandur, Chennai. A quantitative non experimental survey research design was used. The study was conducted at Alandur, located within 20 km radius from Meenakshi College of Nursing. The Target population was 1000, out of which 500 (both male & female) constituted the study sample. Convenient Sampling technique was used to select the sample. The data collection tool consisted of a structured questionnaire comprising 15 multiple choice questions to assess the knowledge on global warming. The tool was validated by subject experts from the field of community medicine and ecologist. The reliability of the tool was established by test and re-test method ($r=0.93$). Pilot study was conducted at Avadi, Chennai among 100 residents, which revealed the feasibility to proceed with the main study. Data was collected over a period of three months. The collected data was tabulated, analysed and interpreted by using descriptive statistics. The overall finding of the study reveals inadequate knowledge of the general public on global warming.

KEY WORDS: Knowledge, Global warming, General public.

INTRODUCTION:

An increase in the global temperature due to green House Gases is called Global Warming. Temperature recording all over the world has revealed that during the 20th century the earth's surface has warmed up on average by about 0.6° C, due to manmade emissions of greenhouse gases. Experts endorse that the trend is accelerating: one of the 16 hottest years in NASA's 134-year record have occurred [since 2000](#). Global warming occurs when carbon dioxide (CO₂) and other air pollutants and greenhouse gases collect in the atmosphere and absorb sunlight and solar radiation that have bounced off the earth's surface. Normally, this radiation would escape into space—but these pollutants, which can last for years to centuries in the atmosphere, trap the heat and cause the planet to get hotter.

Scientists point out that the earth's rising temperatures are fuelling longer and hotter heat waves, more frequent droughts, heavier rainfall, and more powerful hurricanes. The impacts of global warming are being felt across the globe. Extreme heat waves have caused tens of thousands of deaths around the world in recent years. [Consequences of global warming](#) include many environmental, economic, and health consequences. Melting glaciers, early snowmelt, and severe droughts are likely to cause more dramatic water shortages and increase the risk of wildfires. Rising sea levels due to global warming will lead to coastal flooding. Disruption of habitats such as coral reefs and Alpine meadows could drive many plant and animal species to extinction. Allergies, asthma, and infectious disease outbreaks will become more common due to increased growth of [pollen-producing ragweed](#), higher levels of [air pollution](#), and the spread of conditions favourable to pathogens and mosquitoes.

In order to combat the issue and prevent this sort of catastrophe every individual on the face of the earth is expected to play his part. In this context knowledge on global warming becomes highly relevant as a first step. Hence the investigator assessed the knowledge of residents of select community.

MATERIALS & METHODS:

Quantitative non experimental descriptive survey design was used to assess the knowledge of the general public, Alandur, Chennai. The study sample consisted of 500 male & female residents of Alandur. The study subjects were chosen by convenient sampling technique. A structured questionnaire with 15 multiple choice questions was used to collect data. The tool had two sections; section 1 dealing with demographic variables and section 2 dealing with statements and questions related to global warming under three domains with. Each question had one right response and one mark was awarded for every right response thus totalling to a maximum of 15 score converted to percentile score. The scoring was interpreted as follows. A score less than 50% was classified as inadequate knowledge, a score of 51-74.99% was classified as moderately adequate knowledge and score higher than 75% was interpreted as adequate knowledge. The tool was validated by subject experts from the field of community medicine and ecologist. The reliability of the tool was established by test and re-test method ($r=0.93$). The tool was constructed in English and translated to Tamil with the help language expert. Pilot study was conducted in Avadi, among 100 residents, which revealed the feasibility to proceed with the main study. Data was collected over a period of three months. The collected data was tabulated, analysed and interpreted by using descriptive statistics. The findings of the study reveal that majority (63.4%) had inadequate knowledge and no one had adequate knowledge.

RESULT ANALYSIS:**TABLE 1: Frequency and percentage distribution of study subjects by their demographic variables**

N=500

S.No	Demographic Variables	Frequency (N)	Percentage (%)
1.	Age (a)21-25 years (b)26-30years (c)>30 years	65 285 150	13 57 30
2.	Gender (a)Male (b)Female	100 400	20 80
3.	Educational Qualification (a) Illiterate (b) High School (c)Higher Secondary	65 285 150	13 57 30
4.	Occupation (a)House wife (b)Govt.Job (c)Daily wager (d)Private employee	365 100 35	73 20 7
5.	Income per Month (a)Rs.1000-2000 (b)Rs.2001-5000 (c)Above 5000	115 185 200	23 37 40
6.	Source of Information (a)Media (b)Neighbors (c)Relatives	150 265 85	30 53 17

Table 1 depicts frequency and percentage distribution of demographic variables of 500 adults residing at Alandur. Among 500 subjects majority (57%) aged between 26-35 yrs, percentage wise distribution of the samples according to their gender shows 80% were females. With respect to education qualification majority (57%) were High School. Percentage wise distribution of the residents' according to their occupation depicts that maximum (73%) were house wife. With respect of the monthly income (40%) earned above 5000 per month and 53% of the study subjects were neighbours.

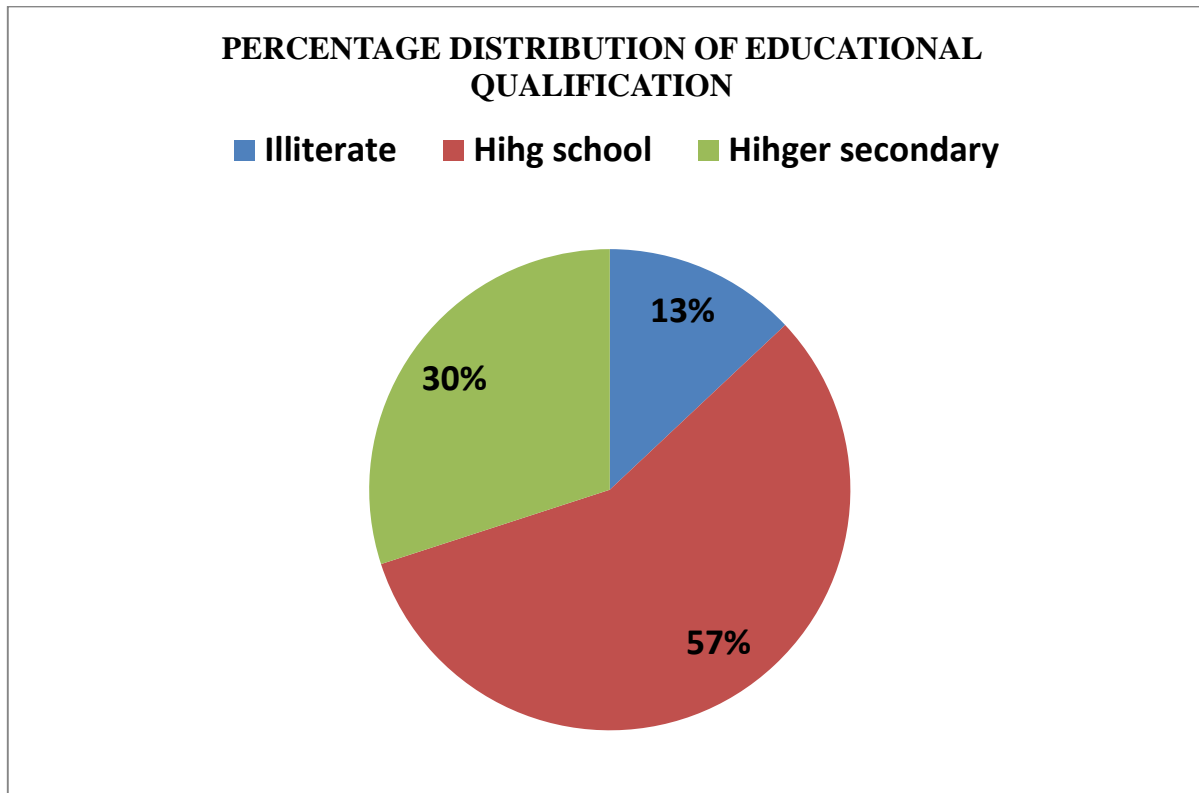


Table-II

Overall and Area wise distribution of mean, SD and Mean Percentage of knowledge scores of Alandur Residents

N=500

S.NO	ITEM	ACTUAL MAXIMUM SCORE	PERCENTILE MAXIMUM SCORE	MEAN	SD	MEAN %
1	CAUSE OF GLOBAL WARMING	7	46.66	1.8	1.5	25.71
2	EFFECT OF GLOBAL WARMING	5	33.33	1.75	1.3	35
3	PREVENTION OF GLOBAL WARMING	3	20.01	0.8	1.1	28.6
	TOTAL	15	100	4.35	4.7	29

Overall and Area wise distribution of mean, SD and Mean Percentage of knowledge scores of Alandur Residents reveals that the highest mean score (1.8 ± 1.5) which is 25.71% of the total score was in the area of “causes of global warming”. Furthermore the lowest knowledge of mean score (0.8 ± 1.73) which is 26.6% of the total score for prevention of global warming.

TABLE 3: FREQUENCY AND PERCENTAGE DISTRIBUTION OF LEVEL OF KNOWLEDGE ON GLOBAL WARMING

N=500

Level of knowledge	Inadequate		Moderate		Adequate	
Percentage score	<50%		51%-74.9%		>75%	
	n	%	n	%	n	%
	317	63.4	183	36.6	-	-

The frequency and percentage distribution of level of knowledge of Alandur residents on Global Warming among general public depicts that majority (63.4%) had inadequate knowledge and no one had adequate knowledge on the Global Warming.

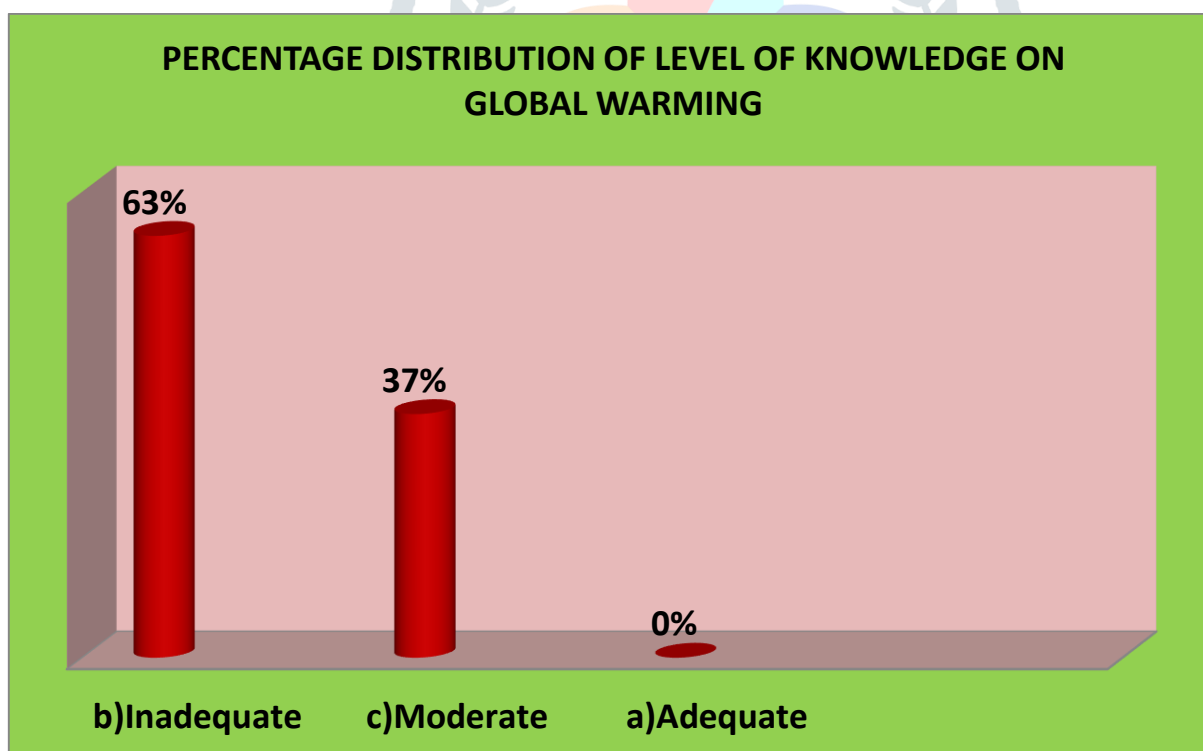


Table: 4 Level of knowledge of Alandur general public on Global Warming

N=500

S.No	ITEM	ITEM	RESPONSE					
			INADEQUATE KNOWLEDGE		MODERATE KNOWLEDGE		ADEQUATE KNOWLEDGE	
			N	%	n	%	n	%
1	I	What is global Warming	318	63.6	182	36.4	-	-
2	II	Electronic devices leads to global Warming	316	63.2	184	36.8	-	-
3	III	Impacts of global Warming	315	63	185	37	-	-
4	IV	Impacts of global Warming on people	319	63.8	181	36.2	-	-
5	V	Causes of global Warming Impacts of global Warming on people	318	63.6	182	36.4	-	-
6	VI	What is greenhouse effects	317	63.4	183	36.6	-	-
7	VII	What are greenhouse gases	320	64	180	36	-	-
8	VIII	What are the physical illness caused by global warming	317	63.6	182	36.4	-	-
9	IX	How does pollution leads to global warming	319	63.8	181	36.2	-	-
10	X	Effects of global warming	318	63.6	182	36.4	-	-
11	XI	Effect of acidification sea water	315	63	185	37	-	-
12	XII	How does rise in temperature cause global warming	320	64	180	36	-	-
13	XIII	Prevention of global warming	314	62.8	186	37.2	-	-
14	XIV	How does planting trees global warming	317	63.8	181	36.2	-	-
15	XV	How does decrease in air pollution prevent global warming	316	63.2	184	36.8	-	-

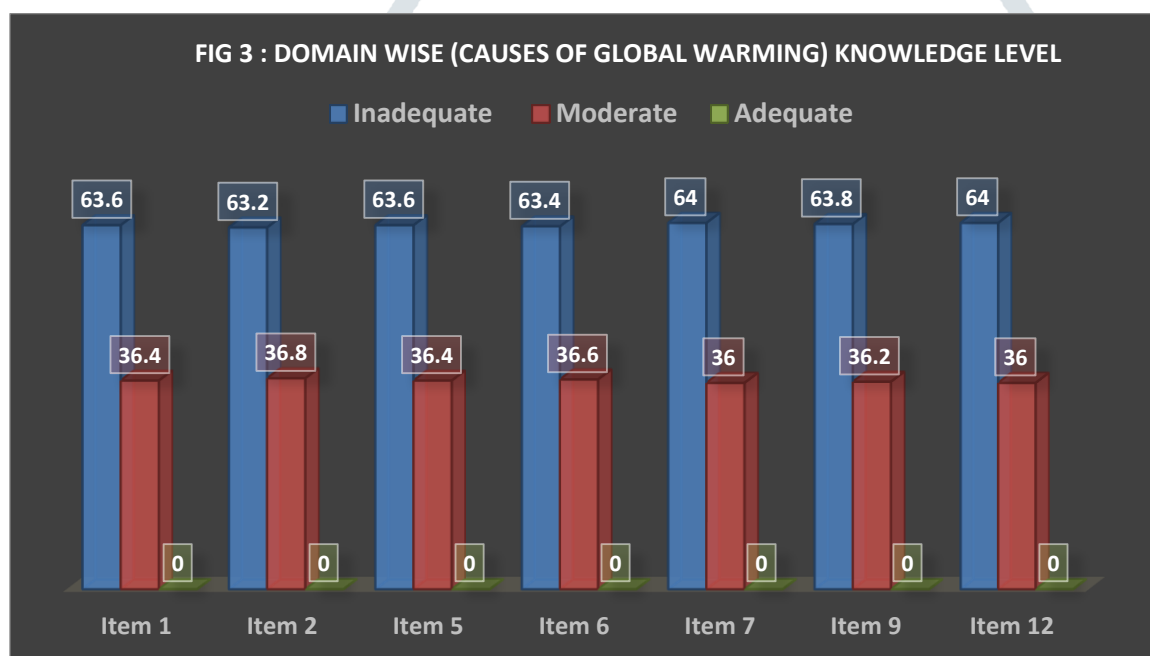
With respect to item 1, that deals with what is global Warming majority 92.4% of the study subjects had inadequate knowledge whereas only 2.8% had adequate knowledge. With respect to item 2 that deals with Electronic devices leads to global Warming majority 92% of the study subjects had inadequate knowledge whereas only 2.6% had adequate knowledge. With respect to item 3, which deals with Impacts of global Warming majority 93% of the study subjects had inadequate knowledge whereas only 3% had adequate knowledge. With respect to item 4 that deals with Impacts of global Warming on people majority 91.8% of the study subjects had inadequate knowledge whereas only 3.8 had adequate knowledge. With respect to item 5 that deals with Impacts of global Warming on people majority 92.8% of the study subjects had inadequate knowledge whereas only 4 %had adequate knowledge.

With respect to item 6, which deals with what is greenhouse effects majority 92.2% of the study subjects had inadequate knowledge whereas only 2.8 %had adequate knowledge. With respect to item 7, which deals with what are greenhouse gases majority 90% of the study subjects had inadequate knowledge whereas only 22% had adequate knowledge. With respect to item 8 that deals with physical illness caused by global warming majority 91% of the study subjects had inadequate knowledge whereas only 2.4% had adequate knowledge. With respect to item 9, which deals with how does pollution leads to global warming majority 92.4% of the study subjects had inadequate knowledge whereas only 3% had adequate knowledge. With respect to item 10 that deals with Effects of global

warming majority 91.8% of the study subjects had inadequate knowledge whereas only 3.2% had adequate knowledge.

With respect to item11 that deals with Effect of Acidification Sea water majority92 % of the study subjects had inadequate knowledge whereas only 3.4 % had adequate knowledge. With respect to item 12, which deals with how does rise in temperature cause global warming majority 92.6 % of the study subjects had inadequate knowledge whereas only 3% had adequate knowledge. With respect to item 13, which deals with Prevention of global warming 91.6majority % of the study subjects had inadequate knowledge whereas only 3.6% had adequate knowledge. With respect to item 14 that deals with how does planting trees global warming majority 92.2 % of the study subjects had inadequate knowledge whereas only 3.2% had adequate knowledge. With respect to item 15 that deals with how does decrease in air pollution prevent global warming majority 92.6% of the study subjects had inadequate knowledge whereas only 2.6 % had adequate knowledge.

DOMAIN WISE KNOWLEDGE LEVEL reveals that in all the domains the residents had inadequate knowledge on global warming.



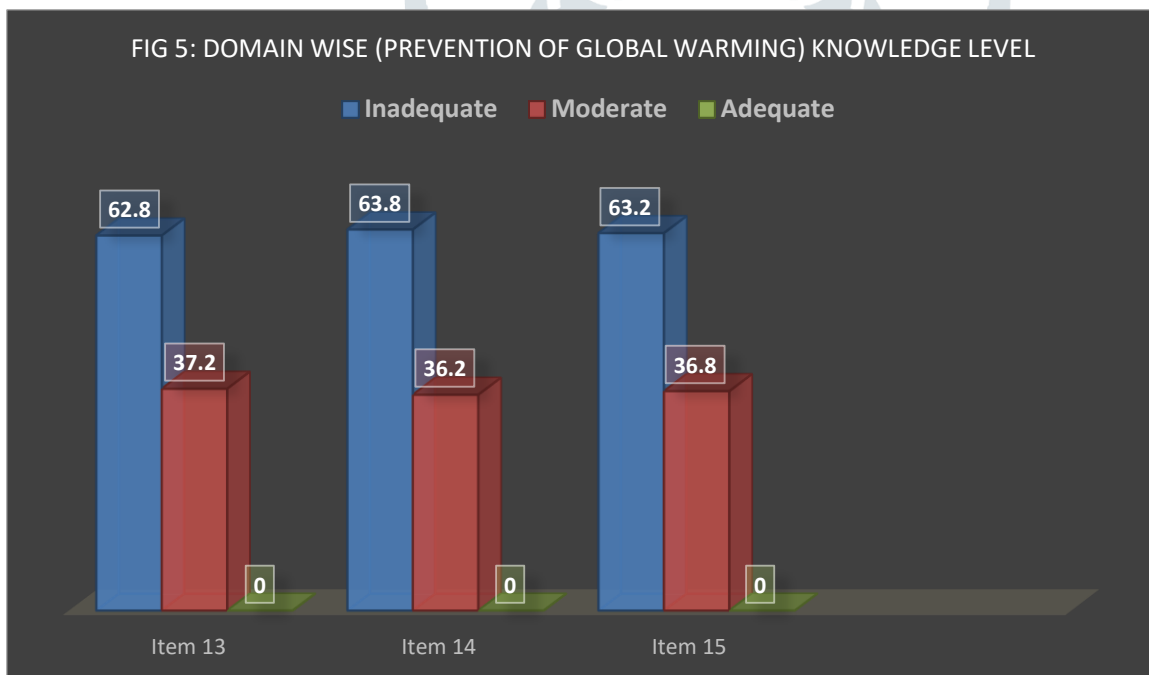
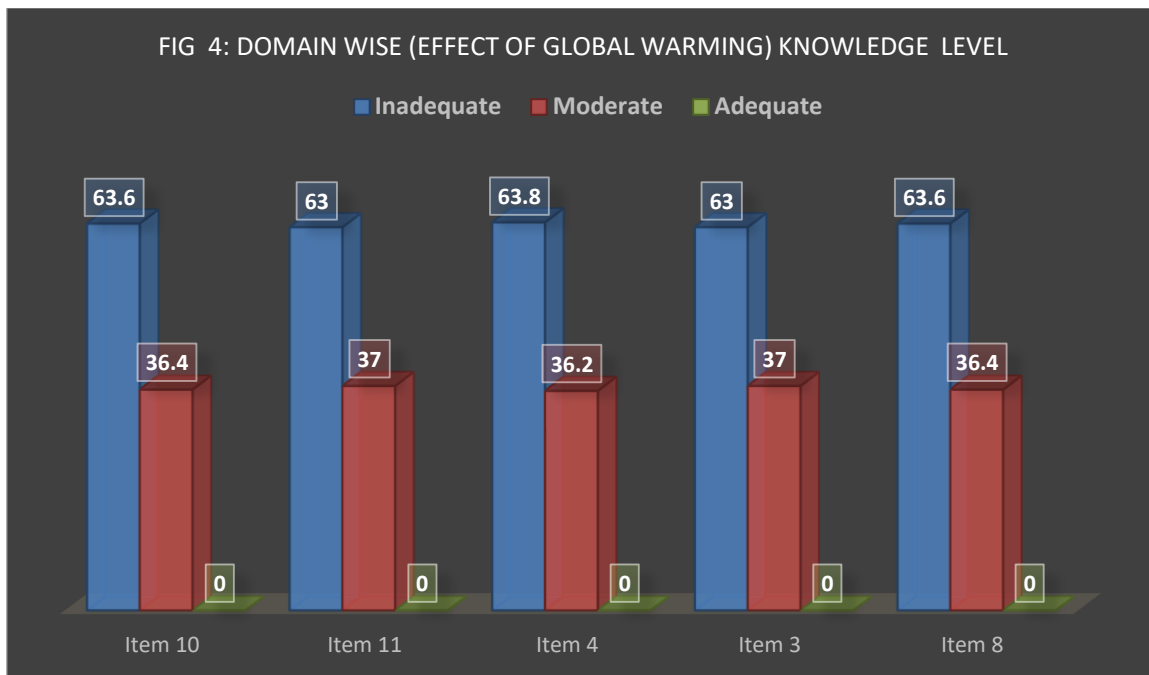


Fig 3, 4 & 5 depicts domain wise levels of knowledge. The graph portrays that the residents had inadequate knowledge on cause, effect & prevention of global warming.

DISCUSSION:

The findings of this study is consistent with the findings of Sulistyawati et al. (2016), who assessed knowledge regarding Climate Change and Health among adolescents in Yogyakarta, Indonesia. Hence this serves as an empirical evidence to educate the common man on this crucial issue to sustain our environment.

CONCLUSION: The study concludes that the general public do not have optimum knowledge on global warming and that every common man has to be empowered in terms knowledge on global warming to sustain the natures' balance, which is the need of the hour.

RECOMMENDATIONS:

1. Similar study can be done with large samples.
2. A comparative study may be conducted to find out the similarities between knowledge of urban and rural people regarding global warming.
3. A Structured Teaching Module (STP) or Information Education & Communication (IEC) may be developed on global warming and its efficacy may be tested.

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