

A Study to Assess the Knowledge Regarding Air Quality Index among People Residing in Selected Urban Areas of Pune City

Goyir Ori¹, Jumyir Rime², Suraj Jhadhav³, Jasneet Kaur⁴, Mangesh Jabade⁵

¹B.Sc. Nursing, ⁴Assistant Professor, ⁵Tutor, Symbiosis College of Nursing, Symbiosis International (Deemed University), Senapati Bapat Road, Pune, Maharashtra

Abstract

Background and Objective: Air pollution is the most common cause of global warming, it has become a major contributor in these past few years due to lack of awareness and control of pollution among people.¹ Most of the people in India are unaware of what Air Quality Index is either. In urban areas excess use of fuels and wastage of resources has caused massive increase in air pollution which lead to decrease in average life span of human beings.²

Our objective was to assess the level of awareness and knowledge among the people regarding air pollution and its prevention in selected urban areas of Pune.

As well to find the level of knowledge on AQI and to find the association between knowledge among the people regarding air pollution and its prevention in selected urban areas of Pune city

Methods: A non-experimental descriptive design with quantitative approach, was adopted to assess the knowledge on air pollution and its prevention and Air Quality index among people residing in urban areas of Pune city. It includes 250 samples from selected areas. Non probability convenience sampling technique was adopted in this study.

Result: Based on the objectives of the study which is to assess the knowledge of the people and the association between the demographic variables, the following result has been identified.

The knowledge level was identified as; 20.8% of the people have a poor knowledge level on air pollution, its prevention and air quality index; 76% of the people have an average knowledge regarding air pollution, its prevention and air quality index and only 3.2% of the people have good knowledge regarding air pollution, its prevention and air quality index. By using the paired t test formula, the t value is 0.05. The demographic variable of education alone has an association with 0.001 as the closest value to the average. The other demographic variables of gender, age and employment do not have an association with the t value, as they are more than the average with findings of 0.119, 0.643 and 0.481 respectively.

Key words: *Air Quality Index, Air pollution, Awareness and knowledge.*

Introduction

The environment involves the animate and inanimate surroundings and their interactions making them to coexist, the balance between interaction and coexistence lead to ecological balance. Natural and human activities influence the balance, which is manifested through changes occurring in air.¹ Any disturbances or changes in air is reflected in the deviation from natural in living beings. Air pollution is any atmospheric conditions in

which substances are present at high concentration and above their normal ambient level to produce a measurable effect on man and animals². The causes of air pollution are both natural as well as man-made. The pollution generated by natural processes is controlled by natural cycles themselves. In man-made, the human activities such as modern life style, vehicles pollution, thermal generation of power, automobiles, metallurgy and nuclear activities.³ The causes in community areas

are agriculture side effects, forest fire, tobacco smoke, CFCs, Industrial pollutants, burning fossil fuels including coal, oil and natural gas.⁴ These activities change the composition of Pune air by adding other unwanted gases. The air prevention and control of pollution act 181 the air act is an act to provide for the prevention, control and abatement of air pollution and for the establishment of boards at the central and state levels with a view to carrying out the aforesaid purposes.⁵

As we all know, the atmosphere is the life blanket of the earth. It is therefore essential that we know more about the atmosphere and the way in which it is polluted. Air is considered safe when it contains no harmful dust and gases.

Statement of the Problem

“A Study to Assess the Knowledge Regarding Air Pollution and Its Prevention and Air Quality Index among People Residing in Selected Urban Areas of Pune City.”

Objectives of The Study

- To determine the level of knowledge among the people regarding air quality index in selected urban areas of Pune city.
- To determine the association between knowledge and socio demographic variables.

Assumption

Poor air quality leads to Health concerns and causes serious health problems related to it.

Absence of knowledge and awareness about air pollution and air quality index challenges and affects air quality of a geographical area.

Research Design

The present study is non experimental descriptive research design, which was adopted to assess the knowledge regarding air air quality index among the people residing in selected urban areas of Pune city.

Population

The term population is the entire set of individuals or objects having common characteristics that meet

certain criteria for inclusion in the study.

In the present study, the target population comprises people from selected urban areas of Pune city.

Sample

Sample refers to the portion of the population, which represents the entire population.

In this present study, a sample is considered of random people selected in urban areas of Pune city

Sample Size

Sample size refers to the numbers of subjects needed for the study. The total sample sizes of the study were 250 people from selected urban areas of Pune city.

Sampling Technique

A non probability convenience sampling technique was adopted for this study.

Criteria for Selection of Sample

Inclusion Criteria

People who reside in urban areas.

Specifically living in Pune city.

Exclusion Criteria

People who were not willing to participate in the study.

Physically and psychologically disabled.

Analysis

Section I: Distribution of samples with regard to demographic data.

Distribution of demographic data with regard to gender.

The data that is presented shows that 46% of the samples were from male and 54% of the sample were from female.

Distribution of demographic data of sample with regard to age.

The data that is presented shows that 88.8% of the samples were from age group 21-30 years, 5.6% of them were from the age group 31-40 years, 4% of them were from age group 41-50 years and the remaining 1.6% of them were from age group 51-60 years.

Distribution of demographic data of samples with regard to Education.

The data presented shows that 2.8% of the samples have less than high school degrees, 26% of the samples have high school degrees, 49.6% of the samples have graduate degrees and 21.6% of samples have post graduate degrees.

Distribution of demographic data of samples with regard to employment.

The data present shows that 20.8% of the sample are government employees, 44.4% of the samples are private employees, 16.8% of the samples are household makers and the remaining 18% of the samples are in business.

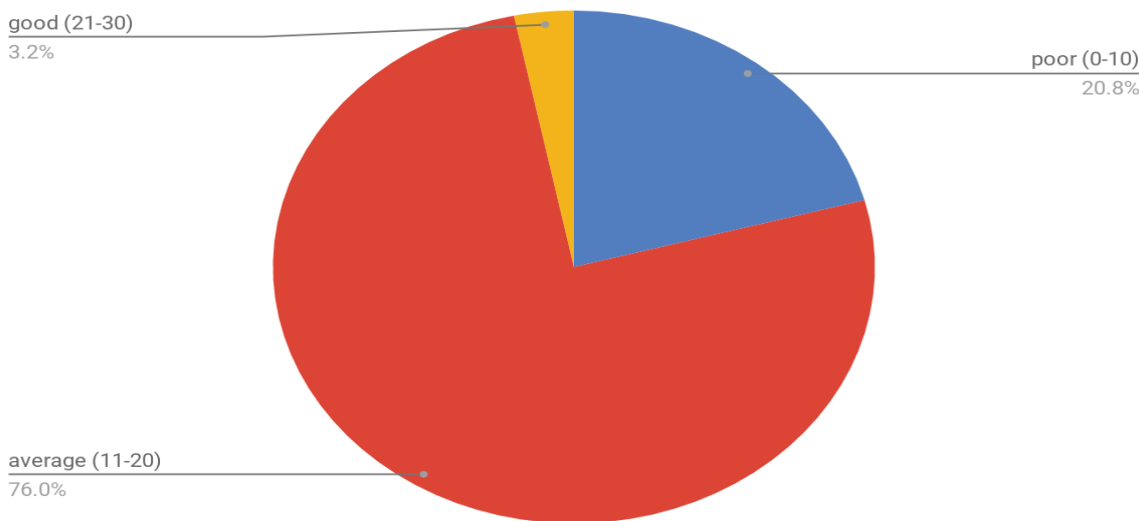
Section II: Distribution of knowledge among people regarding air pollution, its prevention and air quality index in selected urban areas of Pune city.

N=250

KNOWLEDGE LEVEL	FREQUENCY	PERCENTAGE
Poor	52	20.8
Average	190	76
Good	8	3.2

From the above table, it shows that 20.8% of the people have a poor knowledge level on air pollution, its prevention and air quality index; 76% of the people have an average knowledge regarding air pollution, its prevention and air quality index and only 3.2% of the people have good knowledge regarding air pollution, its prevention and air quality index.

Points scored



Pie diagram showing categorization of knowledge level.

Section III: Association between demographic variables.

N=250

Demographic Variables	Frequency	Poor Knowledge	Average Knowledge	Good Knowledge	Paired T Test
Gender :					
Male	114	27	85	02	0.119
Female	136	19	113	04	
Age :					
21-30 years	222	39	177	06	0.643
31-40 years	14	03	11	00	
41-50 years	10	02	08	00	
51 and above	04	02	02	00	
Education :					
Less than High school	07	06	01	00	0.001
High school	66	22	43	01	
Graduate	123	09	110	04	
Post Graduate	54	09	44	01	
Employment :					
Private	110	15	92	03	0.481
Government	53	10	41	02	
Business	45	11	34	00	
Household	42	10	31	01	

The association between the demographic variables of gender, age, education and occupation was found by using the paired t test method of calculation. The demographic variable of education alone has an association, having an average of 0.001; which is the closest to 0.05. The other demographic variables of gender, age and employment do not have an association with the t value, as they are more than the average with findings of 0.119, 0.643 and 0.481 respectively.

Ethical Clearance : The study proposal was sanctioned by the ethical committee of Symbiosis College of nursing. This study was explained to participants and informed consent was taken from the participants. Confidentiality of data collected was maintained.

Conclusion

In conclusion it has been observed that there is a significant difference between the demographic

variables of gender, age and employment with findings of 0.119, 0.43 and 0.481 respectively. It does not have an association as the values are greater than 0.05. Yet, there is an association between education and knowledge with the value of 0.001 as the closest to 0.05.

People have partial knowledge regarding Air quality index. Similar result can be seen in the study conducted by Lagorio S, , et al. on Air pollution and lung function among adult . They recommended that community should be more aware about the air pollution effects and value of air quality index

Source of Funding: Self

Conflict of Interest : Nil

Ethical Clearance: Institutional Research committee

Recommendations

1. Air quality index should be an important topic of discussion during primary as well as secondary education

2. The constitution of India must take serious and strict measures in enforcement of laws developed for controlling air pollution to the violators.

References

1. Lagorio S, Forastiere F, Pistelli R, et al. Air pollution and lung function among susceptible adult subjects: a panel study. *Environ. Health.* 2006;5:11–22
2. Brauer M, Avila-Casado C, Fortoul TI, et al. Air pollution and retained particles in the lung. *Environ. Health Perspect.* 2001; 109: 1039–43.
3. Parker JD, Akinbami LJ, Woodruff TJ. Air pollution and childhood respiratory allergies in the United States. *Environ. Health Perspect.* 2009;117:140–7
4. Li Y, Wang W, Kan H, et al. Air quality and outpatient visits for asthma in adults during the 2008 Summer Olympic Games in Beijing. *Sci. Total Environ.* 2010;408:1226–7
5. Smith-Sivertsen T, Díaz E, Pope D, et al. Effect of reducing indoor air pollution on women's respiratory symptoms and lung function: the Respire Randomized Trial, Guatemala. *Am. J. Epidemiol.* 2009;170:211–20