

The Impact of Pollution on Elderly People: A Study Conducted in Mysore

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Abstract

This study looks at how pollution affects the health and life of people in Mysore. Older people are more likely to be hurt by pollution because they are not as strong as they used to be their bodies do not fight off sickness well and they often have long term health problems. The study wants to see how pollution affects the health of elderly people the things they do every day and how they feel overall. The people doing the study used a way to pick who to ask questions to and they asked 53 people who were 60 years old or more some questions. They also used information from books and reports from the government. What they found out is that most of the people they asked 66.04% said that pollution makes their physical health worse. A lot of people 56.60% said that pollution irritates their eyes, nose or throat. Most of the people in the study said that pollution makes their life worse and gets in the way of what they do every day. Even though many people did not have feelings about the air quality where they live the study says that pollution is really bad for the health and well being of elderly people. The study suggests that people should know more about pollution use things like face masks to protect themselves make parks and green spaces and make rules to control pollution so that older people can be healthy. Pollution is a problem for elderly people in Mysore. The study is, about pollution and how it affects people.

INTRODUCTION

Pollution is when bad things get into our air, water, soil and make the environment sick. These bad things can hurt people, plants, animals and the earth. They can come from things that happen naturally or from things people do like when factories release stuff into the air when we drive cars, when we farm, when we dig up the earth for minerals and when we throw trash away the wrong way.

Types of Pollution Air pollution, Water pollution, Soil pollution, Noise pollution

There's a problem in the world: pollution is getting worse. This is happening because there are factories and cities and more people and cars. People grow old and grow weaker. And they don't have the same ability to fight off the diseases that they had. And that makes it very important to understand how pollution affects people. People's bodies don't work the same way anymore. Their lungs, heart, kidneys, immune systems, are not as robust. This makes it more difficult for them to deal with the pollution. If the air they breathe is dirty, or the water they drink is dirty, or the noise they hear is loud, it can make them very sick. Many older people suffer from health problems such as asthma, heart disease or diabetes. Pollution can exacerbate these problems. It can even be problematic. This means old people have to go to hospital. Their quality of life is worse. They might even die earlier. Air pollution is particularly severe. The air is loaded with particles and gases from cars, factories and construction. Older people who breathe this air can have damage to their lungs and heart. Their body is weak already so they cannot take the pollution well. Studies have shown that breathing in air for a long time can lead to heart attack, stroke and death. Water pollution is also a problem. The water can have things like germs, heavy metals and chemicals that can make people sick. If they drink water they can get stomach problems, kidney damage and other health issues. In some places especially where people do not have a lot of money it is hard to get water. This is very bad for peoples health.

Noise pollution is another problem. Much noise from cars, construction and cities can cause stress. It can disrupt their sleep. Even hurt their hearing. Older people need to rest and have an environment to stay healthy. If it is too noisy it

can affect their health. Make them feel anxious, depressed or irritable. It can even cause blood pressure and heart disease. Pollution affects not only individuals' health but also their mental state. When air and water are polluted, people suddenly do not feel like leaving their houses and meeting friends. This may lead to various feelings of loneliness, nervousness and unhappiness. Elderly people need to go outdoors and enjoy nature in order to live happily and have good health. However, when an environment is polluted it becomes impossible for them. In addition to that, the financial aspect of pollution is important as well. Treatment does cost a lot. Sometimes, elderly people do not have sufficient money for all medical expenses.

Pollution cannot be viewed as a problem solely confined to urban settings. In rural areas too, problems like air pollution, water pollution and noise pollution are common. Elderly people here may often go without medical care or guidance on the subject. Therefore it is important to tackle pollution in cities and rural areas as well. Often government authorities, environmental organizations, medical care providers and concerned people must act together to solve the problem of pollution. Rules for controlling pollution must be laid down. Energy sources must be looked after and then people will have a chance to learn about pollution dangers and how to avoid them. Pollution is threatening not only the health of human beings, but also their wellness and security. Therefore, they must be protected as well as possible from pollution. Pollution affects people in a negative way not only concerning their bodily well-being but also their emotional sphere. And with the increasing number of people, it is important to take actions against pollution.

Review of Literature

Dominski et al. (2021) resulted in a very interesting finding: the risk of death, heart, and lung issues significantly rises when a person is exposed to nitrogen dioxide (NO₂), ozone (O₃), and particulate matter (PM_{2.5} and PM₁₀). The most at-risk group of people includes elderly people. The mapping review conducted by **Andrade et al. (2023)** demonstrated the effects of air pollution on physical activities of older adults. As established by the review, older people are negatively impacted by polluted air quality, particularly outdoors. The mapping review by **Liu et al. (2023)** showed that short-term exposure to various pollutants causes mortality among older people. **Andrade et al. (2023)** carried out a study to review existing research on the influence of air pollution on older people while exercising and resting. They determined that the presence of pollution diminishes some of the health advantages associated with physical activity and leads to serious ailments of cardiac and respiratory systems in senior citizens. **McLachlan et al. (2023)** also did a thorough review of the impact of long-time exposure to polluting substances on the cognitive activity of seniors. This study revealed that long-term exposure to pollutants correlates with decline in the cognitive abilities of older adults. **Adar and Zhang (2024)** looked into the connection between pollution and independence of elderly individuals. Their research shows that long exposure to traffic pollution results in deterioration of physical function and a higher likelihood of requiring assistance. **Jafari et al. (2025)** performed a comprehensive study on air pollution and frailty of seniors. The study indicates that exposure to outdoor air pollution and secondhand smoke was associated with a higher incidence of frailty. **Li et al. (2025)** investigated the impact of air pollution on sleep quality of older people. This investigation found that prolonged exposure to particulate matter light 2.5 and nitrogen dioxide results in poor sleep quality which further leads to negative effects on health, cognitive functioning, and life quality of old people. The study conducted by the University of **Edinburgh (2023)** extracted the long-term impact of pollution exposure on later health. This study showed that those who got exposed to pollution in younger years encounter more threats of being ill in old age, dying, suffering from lung diseases, etc. The research conducted by **Environmental Epidemiology Study (2023)** claimed that many old people had cancers due to being greatly exposed to PM_{2.5} or NO₂ in their younger years.

Statement of the Problem

The fast development of environmental pollutants brings about a significant, although under researched, challenge to the health of older adults. General dangers of environmental degradation are well known but senior citizens are in bigger peril because of age connected changes in their bodies, existence of long-term diseases and weakened immunity. Most studies deal with pollution impact in all groups but do not recognize the effects of certain pollutants on cognitive degradation, respiratory attacks, and heart disease in seniors. What is more, situation in social sphere and medicine isn't good and cannot meet the needs of adjusting to the complex challenges brought by environmental

toxins to the elderly. Therefore, it has become necessary to conduct research into the topic to address the problem. The study is aimed at investigating the impact of pollution upon older adults.

Need for the Study

People that are elderly are regarded as vulnerable because age has reduced their physiological reserves while they have an increased likelihood of having preexisting chronic diseases. Air pollutants and other forms of environmental pollution are viewed as powerful stressors, which worsen the cognitive, respiratory, and cardiovascular degenerations experienced by elderly adults. Although much research has been conducted on how pollution impacts the entire population, little is known about how local pollution levels affect the immune systems and lower mobility levels of older adults. Researching these vulnerabilities is of utmost importance since these vulnerabilities help point out the environmental risk factors that put the quality of life of seniors at risk. Finally, this research will be very helpful in the creation of scientific evidence that can be used in carrying out meaningful public health initiatives, urban-age-centric planning, as well as developing policies, which will make the environmental conditions secure for a continually aging population.

Research Objectives

1. To investigate what proportions and severities of particular health disorders prevail in adults living under varying degrees of pollution.
2. To assess ways in which environmental and socioeconomic conditions expose older people to pollution risks in the vicinity being investigated.
3. To analyze the efficiency of public health measures, interventions, and policies aimed at reducing health hazards associated with pollution in older adult population.
4. To study the impact of long-term exposure to pollution on the quality of life and daily operation of seniors in our research.

HYPOTHESIS

H₀: Pollution does not emerge to have any major impact on the health and wellness of the senior citizens of Mysuru.

H₁: Pollution does seem to affect the health and wellness of the senior citizens of Mysuru.

RESEARCH METHEDODOLOGY

1. Research design

The current study employs a descriptive research design in order to determine the impact of pollution on older persons. This design is appropriate because it aids in describing and analyzing the link between various kinds of pollution and health among older adults. The objective of the research is to gather factual data to assess the physical and psychological impact of pollution on the older population. Data can be collected through structured questionnaires or interviews. The descriptive research design makes it possible to analyze the findings systematically in a comprehensive way.

2. Sampling design

This research utilizes a method termed simple random sampling to obtain respondents for the study. The target population consists of the elderly aged sixty years and above residing in the specified area of the study. Sampling design allows researchers to select the required sample in a manner which would assure the success of the study.

3. Sampling method

To choose the elderly individuals who will be included in the study, a basic random sampling method will be adopted. This guarantees that all individuals stand an equal chance to be selected. This technique is one of the quickest means of minimizing the selection bias and maximizing the accuracy of research results. Elderly individuals aged 60 and above from the chosen location will take part in the research. Sampling helps ensure that the data collected represents the targeted population and makes it easier to analyze the impact of environment pollution on elderly people.

4. Sampling unit

The sampling unit of the study will be made up of elderly people that are aged over 60 years and living in the chosen area of study. The participants will be selected based on the set inclusion criteria and their willingness to participate in the study. Each elderly individual that meets the eligibility criteria will constitute a separate sampling unit for data collection.

5. Sample size

The number of participants in the research is 53 elderly respondents aged over 60 years that were chosen in accordance with the sampling technique used in the study. This size of the sample is enough to examine the impact of environment pollution on the elderly and make deductions.

DATA COLLECTION SOURCES

1. Primary Data

The primary data will be collected from the elderly subjects by means of a structured questionnaire, interviews, and survey forms. It will contain the details of the respondents about their pollution exposure, health issues arising as a consequence of pollution, knowledge of pollution itself, and pollution effect in everyday life.

2. Secondary Data

- The collection of secondary data will involve the use of various reliable publications like:
- Research journals and articles
- Books on environmental pollution and health perspective
- Government publications (e.g., reports of the Central Pollution Control Board, Ministry of Environment, Forest and Climate Change)

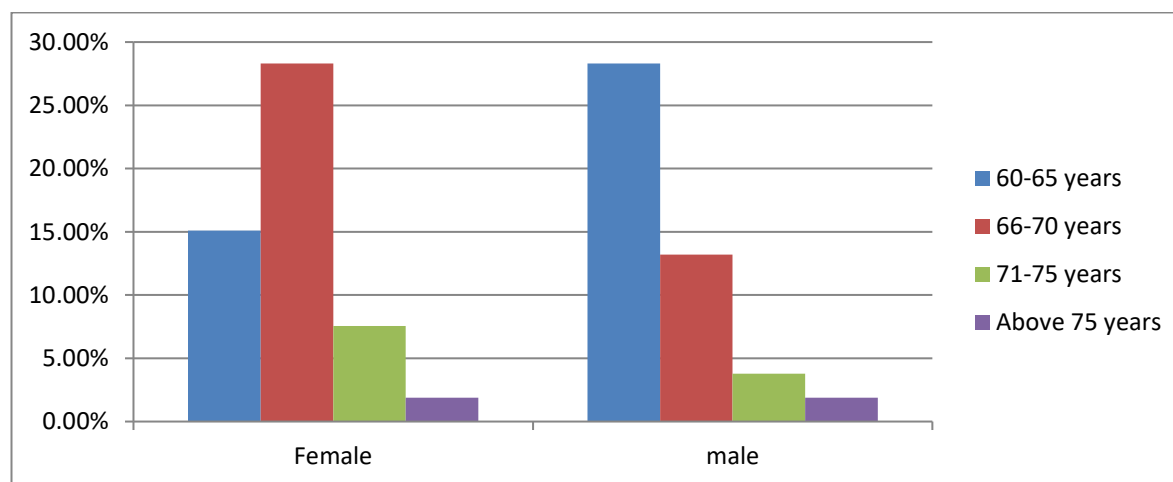
LIMITATIONS

- There will be only 53 elderly subjects included in the research so that the research results cannot cover the entire elderly population.
- The research is carried out solely in Mysore region so that the results obtained cannot refer to other areas.
- The research is based on the opinion of the subjects that may be subjective or inexact.
- The research concentrates on the impacts of pollution in a shorter term only and does not investigate the effects of pollution in the long run.
- The limited time and resources utilized in the research have affected the depth of data collection and analysis.

DATA ANALYSIS

1. Demographic Question

1.Age group					
2.Gender	60-65 years	66-70 years	71-75 years	Above 75 years	Grand Total
Female	15.09%	28.30%	7.55%	1.89%	52.83%
Male	28.30%	13.21%	3.77%	1.89%	47.17%
Grand Total	43.40%	41.51%	11.32%	3.77%	100.00%



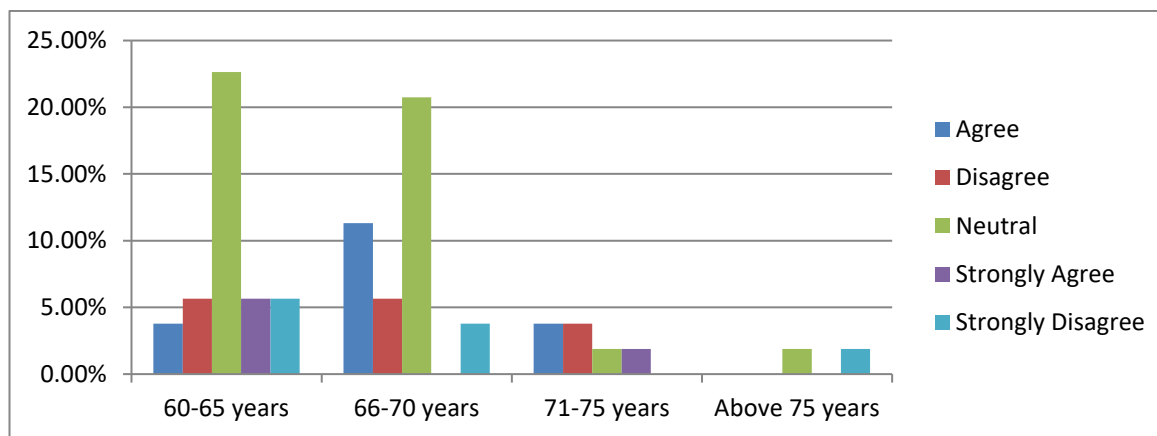
Interpretation:

The bar graph indicates that majority of the respondents fall under the age groups of 60-70 years, wherein maximum number of respondents belong to the category of female aged 66-70 years and males aged 60-65 years whereas respondents above 75 years share the least percentage of the sample.

Analysis:

As stated in the table above, female respondents who fall into the age group of 66-70 years accounted for 28.30% as the top group whereas males aged 60-65 years stood second at 28.30%. Further, only 3.77% of the respondents were aged above 75 years. Thus, the results of the study conducted among the elderly for evaluating the impact of pollution on the elderly appear to be leaning more towards the younger elderly population with female respondents (52.83%) being more in number as compared to male (47.17%).

2.The air quality in my residential area is poor						
Age group	Agree	Disagree	Neutral	Strongly Agree	Strongly Disagree	Grand Total
60-65 years	3.77%	5.66%	22.64%	5.66%	5.66%	43.40%
66-70 years	11.32%	5.66%	20.75%	0.00%	3.77%	41.51%
71-75 years	3.77%	3.77%	1.89%	1.89%	0.00%	11.32%
Above 75 years	0.00%	0.00%	1.89%	0.00%	1.89%	3.77%
Grand Total	18.87%	15.09%	47.17%	7.55%	11.32%	100.00%



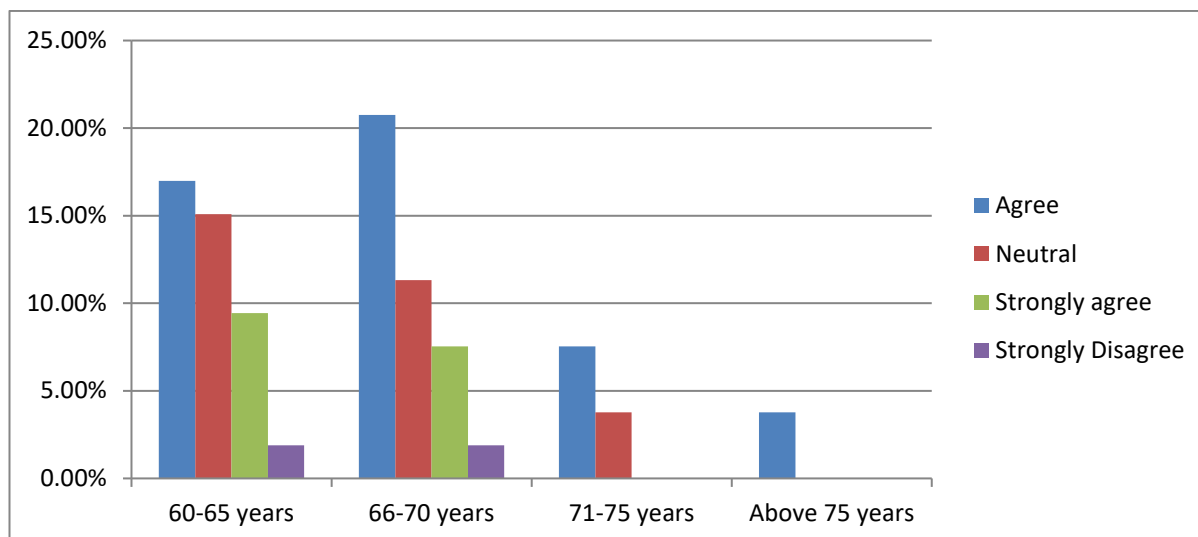
Interpretation:

The bar chart shows that respondents in all age categories have chosen Neutral most of the time, where Neutral is mostly reported by those who belong to 60-70 age category. This is indicative of the fact that their opinion is generally neutral, where less number tend to disagree or agree.

Analysis:

The table demonstrates that forty-seven point seventeen percent of the senior participants opined that they did not find the air quality in their area bad. Twenty-six point forty-two percent agreed/strongly agreed and twenty-six point forty-one disagreed/strongly disagreed signifying the presence of differing opinions in the participant pool.

3.Pollution negatively affects my overall physical heath					
Age group	Agree	Neutral	Strongly agree	Strongly Disagree	Grand Total
60-65 years	16.98%	15.09%	9.43%	1.89%	43.40%
66-70 years	20.75%	11.32%	7.55%	1.89%	41.51%
71-75 years	7.55%	3.77%	0.00%	0.00%	11.32%
Above 75 years	3.77%	0.00%	0.00%	0.00%	3.77%
Grand Total	49.06%	30.19%	16.98%	3.77%	100.00%



Interpretation:

The data presented in the bar chart indicates that individuals belonging to the aged 60–70 years category exhibited the maximum support for the statement that pollution is harmful to physical health while the support for the same was decreasing with the increase in the age.

Analysis:

The analysis of data indicates that the general public overwhelmingly accepted the view that pollution has a negative effect on their health with 66.04% of respondents agreeing with the statement of which 49.06% stated that they agree and 16.98% strongly agree.

4.pollution reduces my quality of life and daily activities						
Age group	Agree	Disagree	Neutral	Strongly agree	Strongly Disagree	Grand Total
60-65 years	5.66%	1.89%	13.21%	16.98%	5.66%	43.40%
66-70 years	16.98%	1.89%	3.77%	15.09%	3.77%	41.51%
71-75 years	3.77%	0.00%	1.89%	5.66%	0.00%	11.32%
Above 75 years	1.89%	1.89%	0.00%	0.00%	0.00%	3.77%
Grand Total	28.30%	5.66%	18.87%	37.74%	9.43%	100.00%

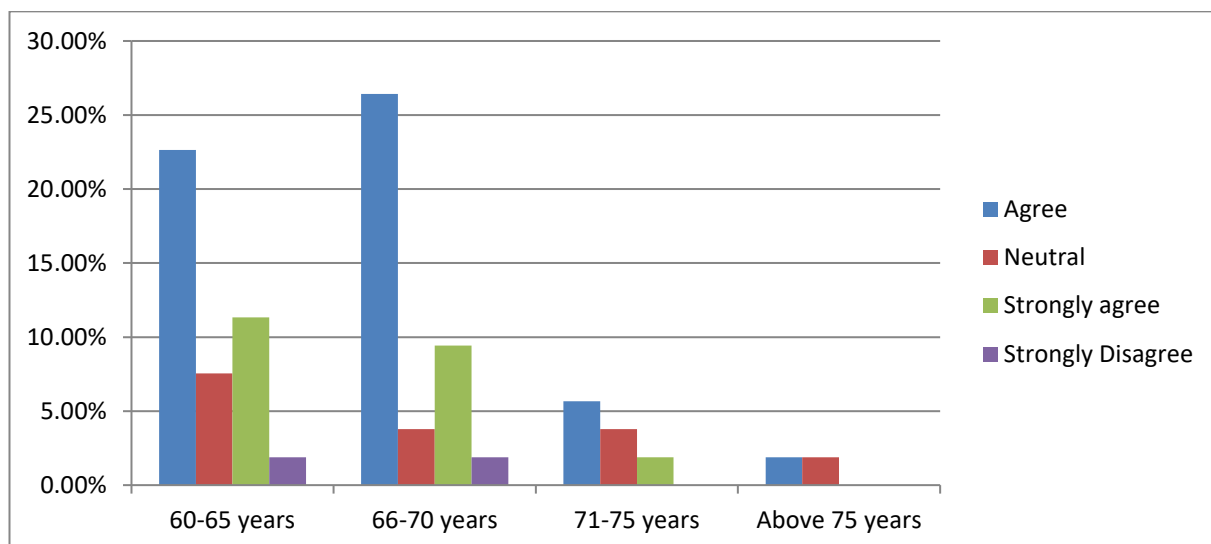
Analysis:

The study results show that individuals aged 60 to 70 years, especially individuals aged between 66 to 70 years (41.51%) were the ones who responded more with agreement or strong agreement on the issue of pollution being the cause of reduced quality of life and an impediment to their day to day activities, while respondents under 75 years (3.77%) showed the least impact.

Interpretation:

The bar graph data reveal that the research respondents falling within the age group of 60 to 70 years are the ones who were showing the highest levels of agreement or strong agreement on the issue while people who responded fell in the age group of above 75 were the ones

5.I experience irritation of the eyes , nose, or throat due to pollution					
Age group	Agree	Neutral	Strongly agree	Strongly Disagree	Grand Total
60-65 years	22.64%	7.55%	11.32%	1.89%	43.40%
66-70 years	26.42%	3.77%	9.43%	1.89%	41.51%
71-75 years	5.66%	3.77%	1.89%	0.00%	11.32%
Above 75 years	1.89%	1.89%	0.00%	0.00%	3.77%
Grand Total	56.60%	16.98%	22.64%	3.77%	100.00%



Interpretation:

The bar graph shows that respondents who were between 66–70 years of age expressed the greatest agreement, followed closely by respondents aged 60–65 years. However, the level of strong agreement decreased dramatically among respondents aged 71 years and older, while strong disagreement was very low regardless of age.

Analysis:

The data shows that respondents aged 60–70 years recorded the highest occurrence of having eye, nose, or throat irritation caused by pollution with 56.60% of respondents who agree and 22.64% who strongly agree, which means that pollution-related irritations are most common among younger elderly segments of age.

SPSS TEST

HYPOTHESIS TEST

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The categories of V1 occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
2	The categories defined by V2 = male and Female occur with probabilities 0.5 and 0.5.	One-Sample Binomial Test	.784	Retain the null hypothesis.
3	The categories of V3 occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
4	The categories of V4 occur with equal probabilities.	One-Sample Chi-Square Test	.008	Reject the null hypothesis.
5	The categories of V5 occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
6	The categories of V6 occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
7	The categories of V7 occur with equal probabilities.	One-Sample Chi-Square Test	.003	Reject the null hypothesis.
8	The categories of V8 occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
9	The categories of V9 occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
10	The categories of V10 occur with equal probabilities.	One-Sample Chi-Square Test	.004	Reject the null hypothesis.
11	The categories of V11 occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
12	The categories of V12 occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
13	The categories of V13 occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Descriptive Statistics

	Mean	Std. Deviation	N
7.I am often exposed to air pollution from vehicles	2.92	1.053	53
11. Pollution causes breathing difficulties or respiratory problems for me	3.55	.952	53
12. Pollution negatively affects my overall physical health	3.75	.875	53
13.pollution increases my stress anxiety, or discomfort	3.68	.936	53
14. I experience irritation of the eyes , nose, or throat due to pollution	3.94	.864	53
15. pollution reduces my quality of life and daily activities	3.79	1.276	53

Chi-Square Tests

	Value	DF	Asymptotic Significance (2-sided)
Pearson Chi-Square	23.297 ^a	12	.025
Likelihood Ratio	23.487	12	.024

Linear-by-Linear Association	.051	1	.821
N of Valid Cases	53		
a. 18 cells (90.0%) have expected count less than 5. The minimum expected count is .15.			

6 .The air quality in my residential area is poor 12. Pollution negatively affects my overall physical heath						
Count						
		12. Pollution negatively affects my overall physical heath				Total
		1	3	4	5	
6 .The air quality in my residential area is poor	1	1	2	3	0	6
	2	0	1	7	0	8
	3	0	10	7	8	25
	4	0	2	7	1	10
	5	1	1	2	0	4
Total		2	16	26	9	53

Findings

- The majority of respondents were female (52.83%), and most belonged to the 60-70 years age group.
- Almost half of the respondents (47.17%) had a neutral view about the air quality of their surroundings.
- Approximately 66.04% of elderly population were of the opinion that pollution adversely impacts their health.
- Majority of the respondents (56.60%) reported suffering from ailments of eyes or throat caused by pollution.
- Most of the respondents feel that pollution impacts their lives negatively.

Conclusion

The research has found that pollution has a strong influence on the health and quality of life of elderly population in Mysore. It has been found that most of the respondents feel that pollution adversely affects their health and that they suffer from irritation caused by pollution. Many respondents viewed the air quality of their surroundings in a neutral manner but admitted that pollution harms their life quality.

Suggestions

- Awareness campaigns need to be organized for senior citizens to inform them about the effects of pollution on human health.
- Green areas have to be created by planting additional trees and bushes.
- The waste management process has to be improved to restrict pollution in air, water, and soil.

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