



“A study to assess the knowledge of environmental pollution among the adults residing in selected rural and urban areas, Gurugram – a comparative study.”

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ABSTRACT

The research conducted in Gurugram, Haryana aimed to identify the existing knowledge disparity regarding environmental pollution among adults in specific rural and urban populations. The study used a quantitative approach and involved 100 participants from rural areas and 100 participants from urban areas, all within the age group of 18-60 years. The participants were selected using purposive sampling technique. To assess the knowledge regarding environmental pollution, a structured questionnaire was used. The results of the study revealed a significant difference in the mean knowledge score between rural (75.87 + 14.40) and urban areas (109.85 + 21.85), as indicated by a 't' value of 14.611. This difference in knowledge signifies the existing disparity between the two populations. The study also identified certain demographic factors that were associated with the urban adult population, such as the availability of relevant information and pre-existing knowledge regarding environmental pollution. Based on the findings, the study suggests the development of an information booklet that encompasses various components of the environment, along with ways to prevent and control pollution. This booklet could serve as a tool to renew the knowledge of key stakeholders and enable them to implement changes at the community level, thereby mitigating environmental pollution and its effects. Furthermore, the research highlights the scope for additional interventions, such as focused group discussions and empowering the community to adopt self-reliant behaviors in promoting a sustainable environment. In summary, the study sheds light on the knowledge disparity regarding environmental pollution between rural and urban populations in Gurugram, Haryana. It emphasizes the need for renewed knowledge, the development of informational resources, and community-level interventions to address and prevent environmental pollution.

KEYWORDS: Assess, Knowledge, Environmental pollution, Adults, Urban areas, Rural areas, Informational Booklet.

INTRODUCTION

In India, the rapid expansion of urbanization, industrialization, and deforestation are all primarily caused by the country's expanding population and economic development. Nearly half of the world's population lives in densely populated urban areas, where they are frequently exposed to epidemics of diseases like the flu and measles.^{1,2} Water-borne infections make up 80% of all infectious diseases, and there are 12 billion people who lack access to safe water worldwide. More than 5 million people every year pass away from unsanitary living conditions, with children accounting for more than half of these fatalities.^{3,9} Increased water contamination provides mosquitoes that cause malaria, which kills 1.2 million to 2.7 million people annually, with hatching grounds.^{4,7} Three million people every year are killed by air pollution from smoke and different pollutants.⁵ Numerous chemicals and pathogens found in soil can be transferred to people directly through food and water.^{5,11} Increased soil erosion not only results in more soil being tossed about the earth but also spreads poisons and hazardous microorganisms. Environmental pollution affects people's health globally. Adults need to be well-informed about environmental contamination in order to avoid any negative effects that may result.^{2,10} Environmental factors also encompass psychological, social, and cultural factors in addition to physical or material factors.^{6,19} The environment of humans includes both their physical and intangible surroundings.^{7, 13} The existence of a healthy human civilization is deteriorating in the modern world. This situation is a result of the unfathomably large number of environmental ailments or issues that are torturing our planet and bringing it dangerously close to a mass extinction of species on this good habitat earth.^{3,8} Delhi became the most polluted capital city in 2019 since this occurred primarily in the area surrounding the capital because of this. However, there was a significant decrease in pollution in several Indian cities as a result of the coronavirus (COVID-19) shutdown in 2020.^{4,16} Delhi, the ninth-most populous metropolis in the world (second largest if the entire NCR, including Faridabad and Gurugram Haryana), is one of the most polluted cities in India.^{4,16}

NEED OF THE STUDY

Environmental pollution is indeed a global issue, affecting the entire planet and all living organisms, including humans. It is a complex problem with multiple interconnected facets, such as air pollution, water pollution, radioactive pollution, and land degradation.^{6,10} Urbanization and industrialization have led to a significant increase in pollution levels, especially in cities like Delhi, India.¹⁶ The burning of fossil fuels in transportation and industries, as well as the practice of burning agricultural waste, contribute to severe air pollution, making Delhi one of the most polluted cities in the world.^{4,16} Water pollution is also a major concern in India, with a significant portion of water resources being severely contaminated due to effluent discharge and improper waste disposal. Contaminated water sources have resulted in a considerable number of deaths in the country.^{6,12} Long-term exposures to pollutants can lead to various health issues, and there is a need for public awareness about the link between pollutants, nutrition, and disease.^{9,13} A collective effort from individuals, communities, and governments is essential for effective environmental conservation and protection of natural resources.

^{10,15} Some positive steps have been taken, such as the nationwide ban on single-use plastics in India in 2022.^{3,7} However, more comprehensive and sustainable solutions are required to tackle the various environmental issues effectively. This includes promoting cleaner energy sources, improving waste management practices, and encouraging sustainable lifestyles. Education and awareness are crucial in mobilizing public participation in environmental conservation. By understanding the impact of their actions on the environment, individuals can make informed choices and adopt eco-friendly practices. Additionally, it is essential for governments and policymakers to implement and enforce environmental regulations to safeguard the environment and the well-being of their citizens.

RESEARCH METHODOLOGY

The research design adopted for the study was a non-experimental quantitative research design. The information was gathered from the 100 adults at Village Khera Jhanjhrola in rural area and 100 adults at Shanti Nagar urban area, Gurugram, using purposive sampling method. The data collected using a structured questionnaire consists of demographic variables and knowledge regarding environmental pollution including types, effects, Sources, and prevention and management of environmental pollution. The response score was categorized as <33% inadequate, 34%-66% moderate, and >67%-100% adequate knowledge. Formal permission, consent & ethical clearance obtained prior the final research process. The researcher initially established rapport with the study samples and assured confidentiality and the purpose of the study was explained to the samples. An information booklet was developed emphasizing the various components like air pollution, water pollution, noise pollution, and soil pollution with prevention & control of Environmental pollution.

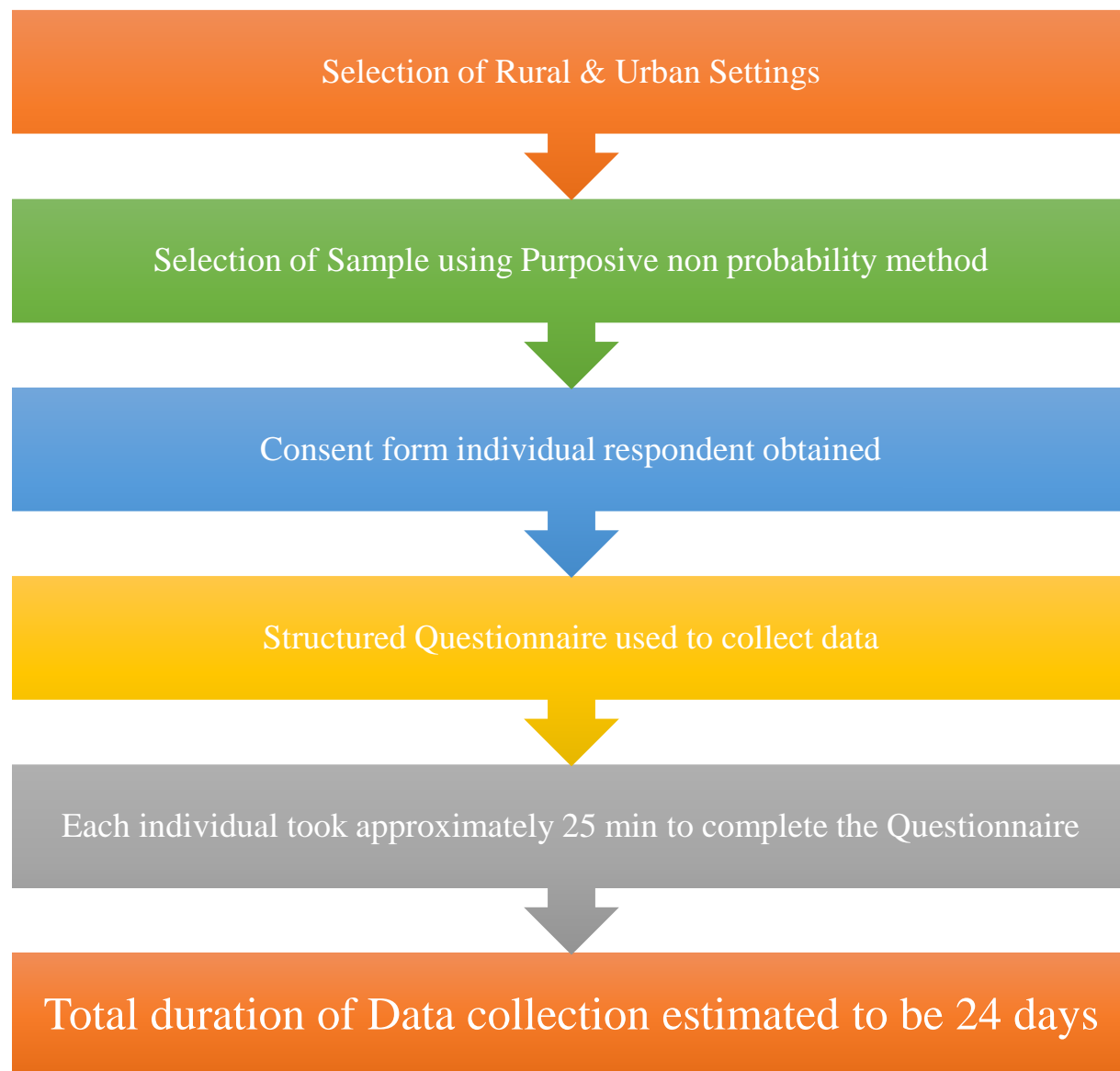


Fig. 1 – Flow chart for the process of data collection

RESULT AND ANALYSIS:

The result & analysis of the present study is being presented under study objectives to precisely focus on the outcome of the research.

3.1. Study objective 1 - To compare the Knowledge regarding environmental pollution among the adults residing at selected rural and urban areas of Gurugram.

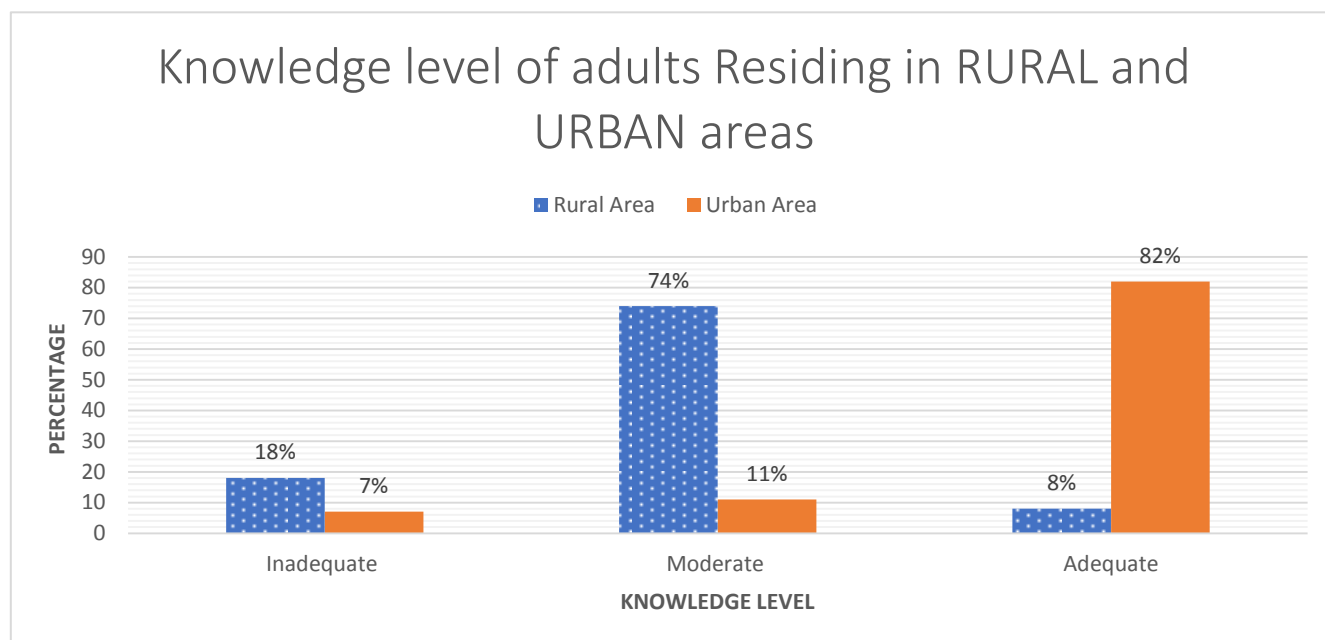


Fig 3: Comparison Bar diagram showing the level of knowledge regarding environmental pollution among the adults of Rural and Urban Areas.

Table 1: Comparison of overall knowledge score between rural and urban area.

Areas	Max. Score	Mean Score	Percentage Difference in knowledge with 95% confidence interval	Mean Difference in knowledge with 95% confidence interval
Rural	130	75.87	33.89	33.97
Urban	130	109.84		

Table 1 showing the mean difference in terms of knowledge regarding environmental pollution at 95% of confidence interval is 33.97 and percentage difference in knowledge with 95% confidence interval is 33.89. The findings indicative of actual existing difference in terms of knowledge in two settings due to their geographical location as well as the accessibility to the relevant information.

Table2: Mean Knowledge score among study groups and the test of significance using an independent t-test

S. no	Groups	Mean±SD	t-value	P value	S / NS
1.	Urban	109.85±21.85	14.611	0.000	S*
2.	Rural	75.87±14.40			

*Significant at $P < 0.05$, [Df (99) = 1.6660 at 0.05 level of significance]

The ‘t’ value of mean difference between rural area and urban areas knowledge score found to be significant at 0.05 level of significance ($t=14.611$), hence the research hypothesis: “There will be a significant difference in-terms of knowledge regarding environmental Pollution among the adults residing at selected rural and urban area of Gurugram” is accepted and null hypothesis is rejected. This finding strongly support the research outcome of present study that the disparity does exists in rural and urban areas in terms of knowledge due to lack of communication of relevant information through various media. The findings also helpful in formulating informational booklet related to environmental pollution and using the local language as medium of communication to spread awareness among the population of rural and urban community.

3.2. Study objective. 2 - To find the association between demographic variables and knowledge regarding environmental pollution among the adults residing at selected rural and urban areas of Gurugram.

Table 3: Association between selected demographic variables and knowledge regarding environmental pollution among the adults residing at selected urban area

Demographic variable	Adequate	Moderate	Inadequate	Calculated value & df	P-Value
Knowledge regarding environmental pollution					
a) Yes	82	8	6	20.860 df=0	0.000*
b) No	0	3	1		
If yes, source of information?					
a) News paper	30	5	3	23.416 df=6	0.001*
b) TV	36	3	2		
c) Internet	16	0	1		
d) None	0	3	1		

* =Significant, $P \leq 0.05$

Table: 3 shows the association of knowledge score of adults in rural and urban areas with selected demographic variables like pre-existing knowledge regarding environmental pollution & the source of relevant information regarding environmental pollution with chi - square value found to be statistically significant at 0.05 level for urban population on the contrary to rural adult population. This finding also suggest the availability & accessibility of informational sources varied between rural & urban areas. The results strongly support the outcome of the present study i.e. difference of knowledge regarding environmental pollution in the study settings. The findings also support the research hypothesis: “There will be significant association between level of knowledge regarding environmental pollution with selected demographic variables among adult residing in selected rural & urban areas of Gurugram” and reject the null hypothesis.

DISSCUSION

The present study findings indicate that there is a lack of readily available environmental pollution-related information in rural areas. This lack of information is attributed to assumptions such as geographical proximity, connectivity, and the focus of policies and programs on urban areas. However, this situation presents an opportunity to create relevant sources of information in the regional language, which can bridge the knowledge gap regarding environmental pollution among the rural population.

These findings are supported by a study conducted by Ms. Subhashini G Rajarajeswari in 2016, which also identified a lack of knowledge regarding environmental pollution in rural areas. The study emphasizes the necessity of providing informational sources to improve awareness and understanding of environmental pollution. Another study by Dr. Harish Kumar in 2018 further reinforces the existence of a knowledge disparity between rural and urban settings concerning environmental pollution. The study suggests that this disparity should be addressed through government initiatives involving the local community and the implementation of proper programs and policies. The findings of the present study, as well as the aforementioned similar studies, suggest that existing knowledge about environmental pollution is associated with factors such as age, education, and occupation, as identified by Ms. Subhashini's study in 2016. Additionally, other factors that may contribute to this disparity include geographical proximity, connectivity, the availability of informational sources in the local language, and the effectiveness of government policies, programs, and initiatives in disseminating information across the population.

CONCLUSION

Environmental pollution is indeed a significant health issue worldwide, and its impact on various health problems cannot be ignored. Each individual has a responsibility to contribute to environmental protection through their actions. The findings of the present study reinforce the existing knowledge disparity between rural and urban populations concerning environmental pollution, highlighting the urgent need for interventions. To address this knowledge gap, an informational booklet focused on environmental pollution was developed and communicated among the rural population. The aim is to enhance people's understanding of environmental pollution and its potential health consequences. By disseminating this information, the study intends to empower individuals to take preventive measures and mitigate the adverse effects on their health. Additionally, the study suggests further interventions such as focused group discussions. These discussions can serve as platforms for exchanging knowledge, sharing experiences, and generating ideas to control and reduce environmental pollution. Furthermore, empowering the community to adopt self-reliant behaviors is essential. Encouraging individuals to take responsibility for their actions and promoting sustainable practices will contribute to a healthier environment.

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