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A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING HEALTH HAZARDS IN SCHOOL CHILDREN DUE TO INDUSTRIAL POLLUTION AMONG CHILDREN OF SELECTED SCHOOLS SITUATED NEAR BY INDUSTRIAL AREA AT TUMKUR

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INTRODUCTION

If man thinks about his physical or moral state he usually discovers that he is ill. ~Johann Wolfgang von Goethe the atmosphere is a complex dynamic natural gaseous system that is essential to support life on planet Earth. Stratospheric ozone depletion due to air pollution has long been recognized as a threat to human health as well as to the Earth's ecosystems. The rapid growing population and economic development is leading to a number of environmental issues in India because of the uncontrolled growth of urbanization and industrialization, expansion and massive intensification of agriculture, and the destruction of forests. A child spends more time at school than anywhere else except home. Schools can have a major effect on children's health, by teaching about health and promoting healthy behaviors. The school building and environment should be a safe and healthy place for your child. Schools work to prevent risky behaviors such as alcohol and tobacco use, inactivity or bullying. They may also deal with specific health problems in students, such as asthma, bronchitis and infectious diseases1 . Industrial pollution is pollution which can be directly linked with industry, in contrast to other pollution sources. This form of pollution is one of the leading causes of pollution worldwide; in the United States, for example, the environmental protective agency estimates that up to 50% of the nation's pollution is caused by industry. Because of its size and scope, industrial pollution is a serious problem for the entire planet,

especially in nations which are rapidly industrializing, like china, india2 . 2 It is estimated that the country's population will increase to about 1.26 billion by the year 2016.Indian cities are polluted by vehicles and industry emissions. Road dust due to vehicles also contributing up to 33% of air pollution, In cities like Bangalore, around 50% of children suffer from asthma. India has emission standard of Bharat Stage IV (Euro IV) for vehicles since 2005. Scientists have long known that kids are particularly susceptible to the dangers. They breathe more air in proportion to their weight than adults do, and their bodies are still developing. Based on the time they spend at school, their exposures could last for years but the impact might not become clear for decade3 . In some districts, emissions from the smokestacks of refineries or chemical plants threatened students of every age, preschool through prom. Outside those schools, reports from polluters themselves often indicated a dozen different chemicals in the air. All are considered toxic by the government, though few have been tested for their specific effects on children. The World Health Organization (WHO) estimates that about a quarter of the diseases facing mankind today occur due to prolonged exposure to environmental pollution. Most of these environment-related diseases are however not easily detected and may be acquired during Childhood and manifested later in adulthood4 . Industrial pollution is one of the major causes of environmental concern. Increasing urbanization is leading to merging of residential localities with industrial locations, thus exposing the hazards of industrial environment. Systematic assessment of the effect of industrial pollution on the health and survival of residents certainly goes a long way in monitoring the pollutants and bringing out mitigative measures by the authorities5

A chronic breathing disorder, asthma is characterized by recurrent attacks of breathlessness and wheezing. In India, over 20 million people have asthma, with children and people over 65 years being at higher risk of acute attacks6 It is well known that exposure to high levels of air pollution can adversely affect human health. A number of air pollution catastrophes occurred in industrial countries between 1950s and 1970s, such as the London smog of 1952. Air quality in western countries has significantly improved since the 1970s. However, adverse health effects of exposure to relatively low level of air pollution remain a public concern, motivated largely by a number of recent epidemiological studies that have shown the positive associations between air pollution and health outcomes using sophisticated time-series and other designs.

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NEED FOR STUDY:-

The detrimental effects of air pollution on children health have been recognized for most of the last century. Effective legislation has led to a change in the nature of the air pollutants in outdoor air in developed countries, while combustion of raw fuels in the indoor environment remains a major health hazard in developing countries. The mechanisms of how these pollutants exert their effects are likely to be different, but there is emerging evidence that the toxic effects of new photochemical pollutants such as nitrogen dioxide are likely to be related to infection. This review shows the relationship between air pollution and infection and will explore some of the mechanisms of how both could act synergistically to cause respiratory illnesses especially in exacerbating symptoms in individuals with preexisting respiratory conditions such as asthma and chronic obstructive pulmonary disease8 . A study was conducted in New York found that children's living in neighbourhoods with heavy truck traffic within in 200 meters of their homes had increased risk of asthma hospitalization the study examined hospital admission for asthma among children's ages 0-14 and residential proximity to industry9. According to recent finding, pollution in both indoors and outdoors, is a major environmental health problem affecting everyone in developed and developing countries alike. The 2005 WHO Air quality guidelines (AQGs) are designed to offer global guidance on reducing the health impacts of air pollution. The new (2005) guidelines apply worldwide and are based on expert evaluation of current scientific evidence. They recommend revised limits for the concentration of 5 selected air pollutants: particulate matter (PM), ozone (O3), nitrogen

STATEMENT OF THE PROBLEM :--

A study to assess the effectiveness of structured teaching programme on knowledge regarding health hazards in school children due to industrial pollution among children of selected schools situated near by industrial area at Tumkur.

OBJECTIVES OF THE STUDY:---

1. To assess the pre-test knowledge of school children regarding health hazards caused by industrial pollution.

2. To assess the post-test knowledge score regarding health hazards caused by industrial pollution.

3. To find out significant difference between pre and post-test knowledge scores.

4. To determine the association between post-test knowledge scores with selected demographic variables.

Operational definitions

ASSESSMENT: It refers to gathering information regarding the health hazards in¬ children due to industrial pollution.

EFFECTIVENESS: In this study it refers to significant gain in knowledge as¬ determined by significant difference in pre and post test scores of school children knowledge regarding health hazards in children due to industrial pollution.

STRUCTURED TEACHING PROGRAMME: In this study STP means a well¬ prepared teaching programme designed to provide information regarding the health hazards in school children due to industrial pollution.

KNOWLEDGE: It refers to response of the school children to the questions stated in¬ the questionnaire regarding health hazards in school children due to industrial pollution.

CHILDREN: School children studying in 5th, 6th, 7th standard.¬

RESEARCH HYPOTHESIS:---

H1: There will be significant difference between pre-test and post-test knowledge scores regarding health hazards in school children due to industrial pollution.

H2: There will be a significant association between post-test knowledge score with selected demographic variables.

REVIEW OF LITERATURE :--

The research review of literature of the study is presented under the heading as follows:

.Reveiws related to concept of industrial pollution and the diseases associated with industrial pollution.

Reviews related to the diseases occurs among the children due to indrustrial pollution.

Reveiws related to the respiratory diseases occurs due to industrial pollution .

Reviews related to gastrointestinal problems in the children due to industrial pollution.

Reviews related to the effectiveness of planned teaching programme .

RESEARCH METHODOLOGY:--

Research methods are the techniques/methods researchers use in performing research operations. Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically . This chapter presents the methodology adopted for study. It includes the research approach, research design, setting, population, sample and sampling technique, instruments for data collection, and development of teaching strategy, pilot study, data collection procedure and plan for data analysis.

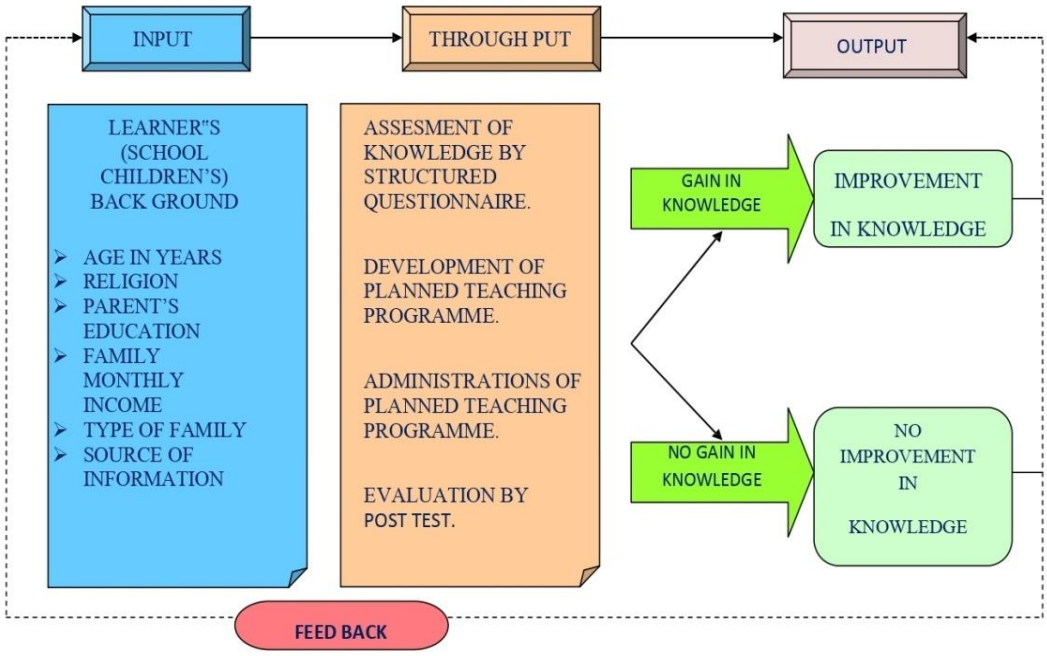

FIGURE – 1 CONCEPTUAL FRAME WORK BASED ON GENERAL SYSTEMS MODEL BY LUDWIG VON BERTALANFFY

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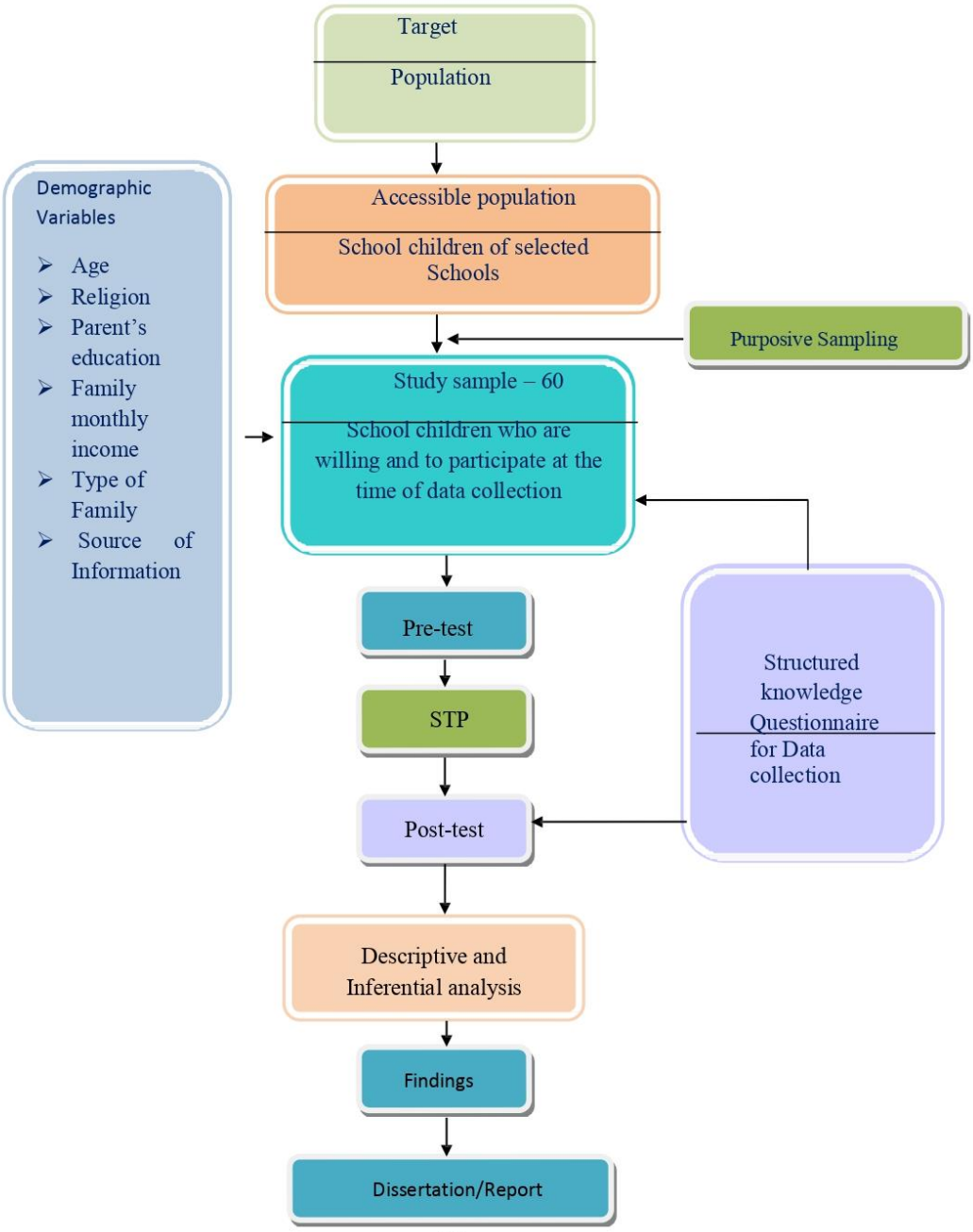
ANALYSIS OF SAMPLE CHARACTERISTICS:---

This part deals with data pertaining to demographic profile of the respondents in terms of frequency and percentage. 1. Age distribution of school children. Table-2 Age(Years) Frequency Percentage (%) 10 and below 20, 33.33% 11 years 20, 33.33% 12 and above 20 , 33.33%

RESEARCH DESIGN

Fig-2: Schematic representation of research Design Diagram



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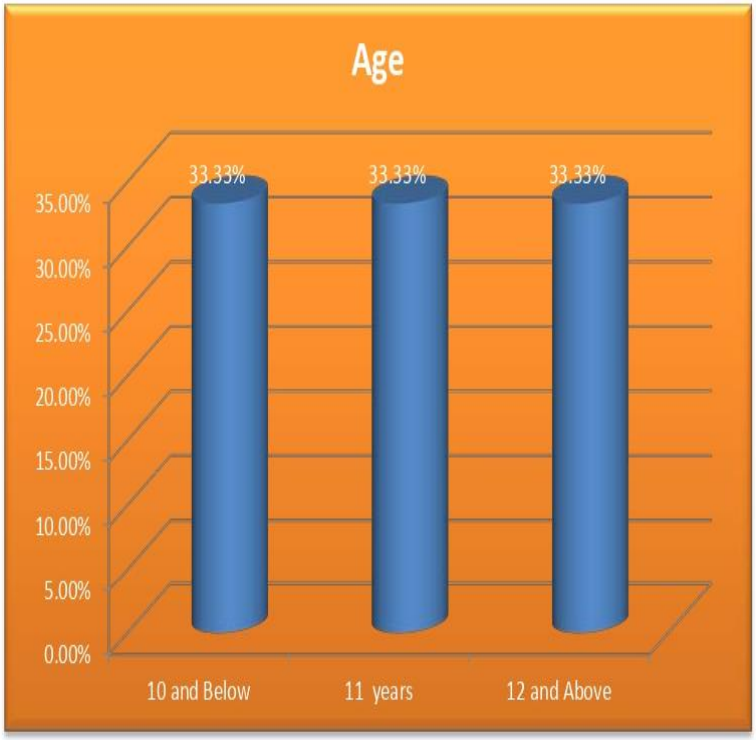
R

RESULT

SECTION-I: ANALYSIS OF SAMPLE CHARACTERISTICS This part deals with data pertaining to demographic profile of the respondents in terms of frequency and percentage.

"Analysis is the process of organizing and synthesizing data in such a way that research questions can be answered and hypothesis tested". This chapter deals with analysis and interpretation of the information collected through structured knowledge questionnaire from 60 school children studying in selected schools at Tumkur. The present study was designed to assess the effectiveness of STP regarding knowledge on hazards of industrial pollution on school children among the school children. The collected data were coded, tabulated, organized, analysed and interpreted using descriptive and inferential statistics. The data has been analysed and interpreted in the light of objectives and hypothesis of the study.

Figure-4



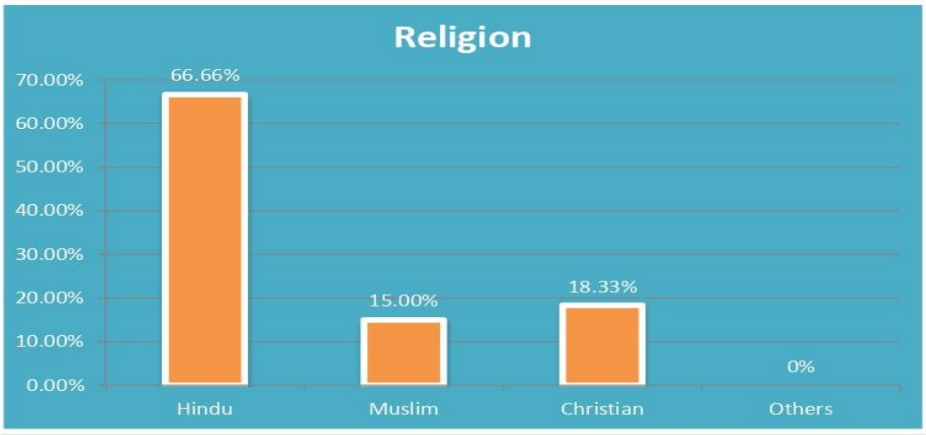
From the above table and figure it is clear that 20 school children are in age group 10 and below years. 20 of school children are in age group of 11 years. 20 school children are in age group 12 and above year

2. **Religion of school children.**

Table-3

Religion	Frequency	Percentage (%)
Hindu	40	66.66%
Christian	09	15%
Muslim	11	18.33%
Others	00	00%

Figure-5



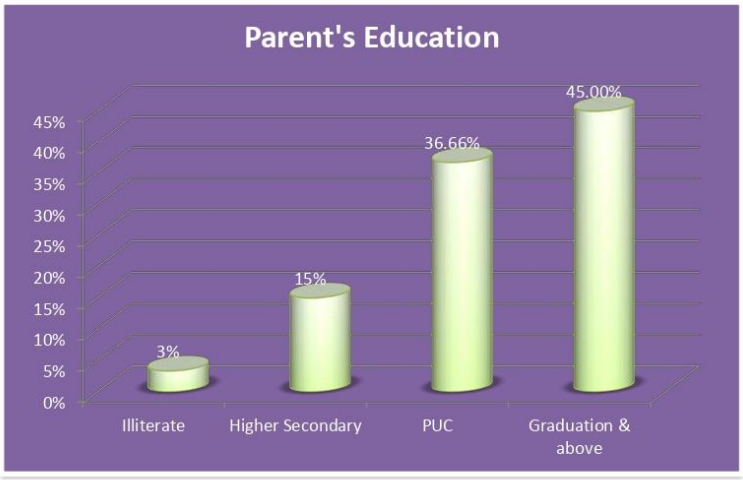
From the above table and figure it is clear that 40 school children belong to Hindu religion. 09 school children belong to Muslim religion and 11 school children belong to Christian community.

3. **Parent's education of School children.**

Table-4

Parent's Education	Frequency	Percentage (%)
Illiterate	02	3.33%
Higher Secondary	09	15%
PUC	22	36.66%
Graduation and above	27	45%

Figure-6



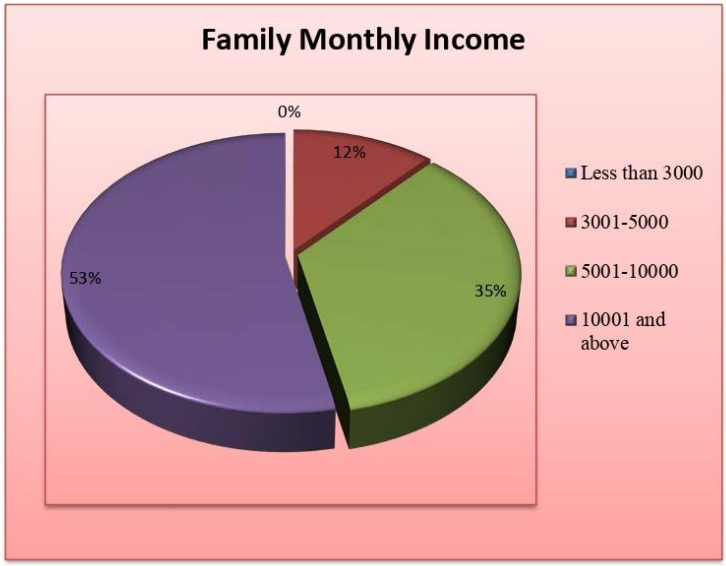
The above table and diagrams shows the parent's education of School children, 02 School children parents are illiterate, 09 School children parents are having education up to higher secondary, 22 School children parents are having education up to PUC and 27 School children parents have education up to graduation and above.

4. **Family Monthly income of School children.**

Table-5

Family Monthly Income	Frequency	Percentage (%)
Less than 3000	00	0.0%
3001-5000	07	11.66%
5001-10000	21	35%
10001 and above	32	53.33%

Figure-7



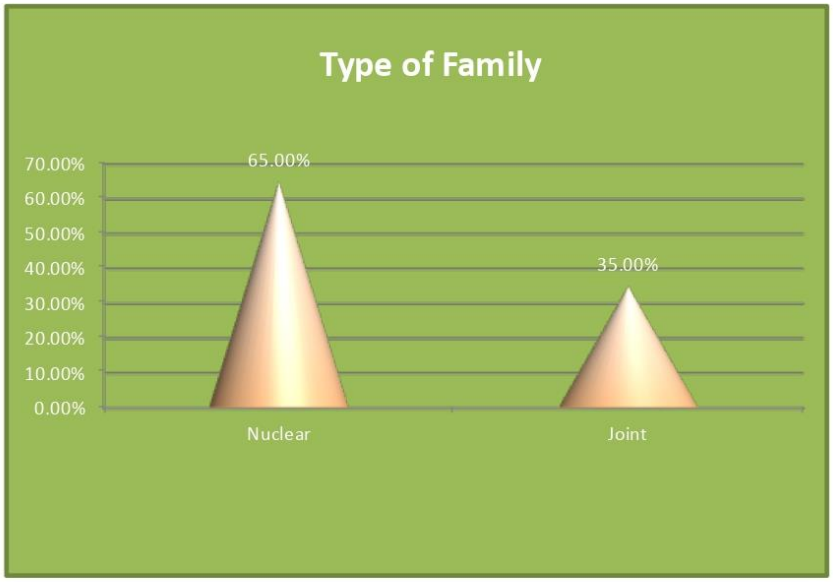
The above table and the diagram shows Out of 60 School children none had family income less than 3000, only 07 had income between 3001 to 5000, 21 had income between 5001-10000 and 32 were having family income 10001 and above.

5. **Type of family of School children.**

Table-6

Type of family	Frequency	Percentage (%)
Nuclear	39	65%
Joint	21	35%

Figure-8



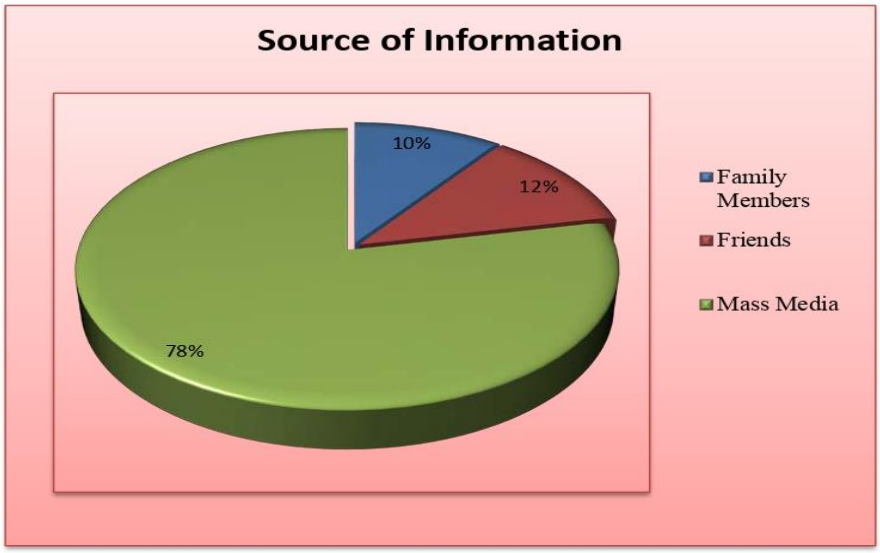
The above table and diagram shows the type of family of School children. 39 were from Nuclear families and 21 are from joint families.

6. Source of information of School children

Table-7

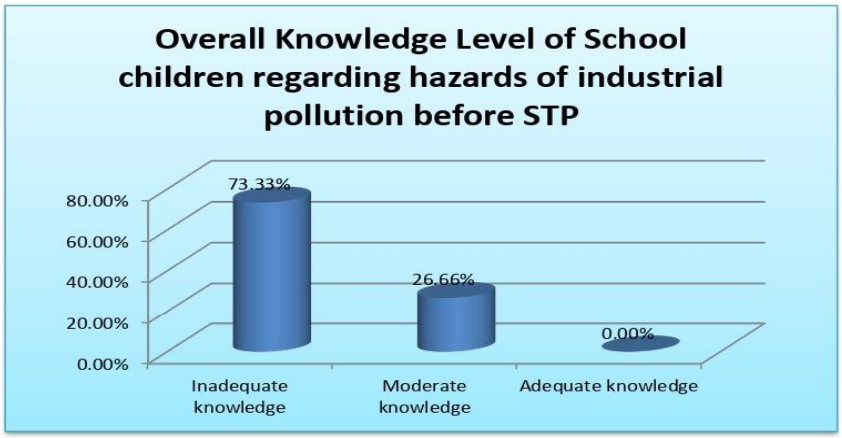
Source of Information	Frequency	Percentage (%)
Family members	06	10.0%
Friends	07	11.66%
Mass media	47	78.33%

Figure-9



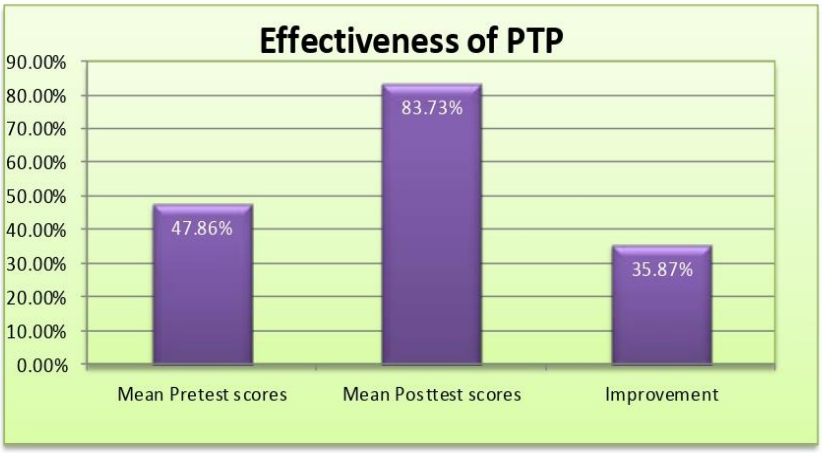
The above table and the diagram shows Out of 60 School children 47 were having mass media, 07 were having friends and 06 were having family members as the source of information.

Figure-10



The above table and graph shows overall knowledge of School children regarding hazards of industrial pollution on school children before administering STP. It was observed that 44 School children had inadequate knowledge regarding hazards of industrial pollution on school children and 16 School children had moderately adequate knowledge regarding hazards of industrial pollution on school children before administering PTP.

Figure-12



Limitation and Recommendations

Limitations: The limitations of the present study were 1. The study was confined to small number of subjects and was conducted on a purposive sampling, studying selected schools, which limits the generalization of findings. 2. A structured knowledge questionnaire was prepared for data collection, which restricts the amount of information that can be obtained from the respondents. 3. No attempt was made to do follow up of students. 4. The study lacked control group that did not receive any specific teaching to allow the researcher to test the increase on student's knowledge without STP. 80

Suggestions 1. Continuing education programmes can be planned for them to keep them updated with necessary knowledge with regarding hazards of industrial pollution in school children. 2. A program orientation related to various aspects of the hazards of industrial pollution in school children and its benefits could be beneficial for the students as it could ensure an effective performance towards achieving health. 3. Periodical evaluation should be conducted to ensure that the standards of knowledge regarding hazards of industrial pollution in school children are maintained. 4. Development and implementation of a STP regarding prevention of hazards of industrial pollution in school children will enhance the knowledge of students.

Recommendations 1. A similar study can be replicated on a larger sample with different demographic characters. 2. An Experimental study can be under taken with control group. 3. An experimental study can be done with parents and teachers as samples. 4. A Similar study can be conducted using other strategies like SIM, booklets and pamphlets. 5. A Comparative study can be conducted between the students of different universiti

Discussion summary and conclusion

The discussion brings the research report to closure. A well-developed discussion section "makes sense" of the research results. This is the most important section of any research report The findings of the study have been discussed with reference to the objectives and hypothesis stated in the information and findings of the other studies. Objectives: 1. To assess the pre-test knowledge of school children regarding health hazards caused by industrial pollution. 2. To assess the post-test knowledge score regarding health hazards caused by industrial pollution. 3. To find out significant difference between pre and post-test knowledge scores. 4. To determine the association between pre-test knowledge scores with selected demographic variables

. SUMMARY This chapter presents a brief summary of the research study. The main aim of the study was to determine the effectiveness of STP on hazards of industrial pollution in school children among school children in selected schools at Tumkur. Knowledge regarding hazards of industrial pollution in school children is one among the most challenging aspect for the student. The students are expected to regularly update their knowledge regarding hazards of industrial pollution. It can be achieved through organization of educational programs.

CONCLUSION

The pre-test showed that knowledge of school children regarding hazards of industrial pollution in school children was inadequate. It indicates the importance of an educational program to update the knowledge regarding hazards of industrial pollution in school children. After the administration of STP, the post-test scores showed an increase in knowledge, hence it was concluded that STP was an effective method to improve knowledge. Nursing Implications: The scientific and technological development in medicines is challenge to nursing to keep abreast with new developments continuing education is necessary. Staff development program is major factor in shaping the future of the profession of nursing service. The findings of the study have several implications for nursing service, nursing education and nursing research. Nursing Practice: Since the present study showed that most of the sch.

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