A Study to Assess the Effectiveness of Planned Teaching Programme on Environmental Health among the Community People in Selected Rural Area Gandhi Nagar Bhopal (M.P.)

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ABSTRACT

Background: Environmental health the branch of public health concerned with monitoring or mitigating those factors in the environment that affect human health and disease. Or other words the condition of the environment in a particular region, especially as regards ecological diversity or pollution. **Objectives:** The aim of this study was to assess effectiveness of planned teaching programme on environmental health among the community people. **Methodology**: The research approach adopted for this study is a **Quantitative research approach**. The research design was pre-test and post-test design. The pilot study was conducted at Rural Area **Gandhi Nagar Bhopal**. A Convenient sampling technique was used. Structured knowledge questionnaire was used to assessing the environmental Health. The final study was conducted with 50 sample in schools was given followed by post-test after 7 days using the same pre-test tools. The data collected was analyzed using inferential statistics. **Results:** Indicated overall pre- test & post- test mean knowledge scores on environmental health. Depicted mean post- test score 24.95 is higher than mean pre- test score of 16.825. The actual gain knowledge score is 8.125% and post- test SD =3.25, pre- test SD=4.50 and computed paired t-test (9.3235) (p= 2.04) at the level of <0.05. Thus, data showed higher than the tabled value t-test (= 2.18) at the level of <0.05 thus indicated significant difference and effectiveness of planned teaching program, in increasing the knowledge of Community people regarding environmental health. The computed 't' value (t=9.3235) was higher than the table value (t=2.04) at 0.05 level of significance. Hence, the research **hypothesis (H₁) was accepted**. **Conclusion:** The study concluded that planned teaching program was effective in increasing the knowledge score of Community people regarding environmental health.

KEYWORDS: *Environmental health, Community People*

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INTRODUCTION

The word health refers to a state of complete emotional and physical well-being. Healthcare exists to help people maintain this optimal state of health. Good health is central to handling stress and living a longer, more active life. health is a resource to support an individual's function in wider society, rather than an end in itself. A healthful lifestyle provides the means to lead a full life with meaning and purpose *(PALERIYA,2018)*.

The World Health Organization (WHO) defined health with a phrase that modern authorities still apply. "Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity**."(AL SVALASTOG, 2018)**

In the coming decades, environmental health professionals are bracing for a warmer, wetter climate that will likely prompt or exacerbate threats to our public health across the globe. As temperatures

increase, for example, disease carrying mosquitoes can live in areas previously too cold for them to survive, upping the number of people impacted by vector borne illnesses like dengue and malaria. As sea levels rise, whole coastal cities and island nations are at risk for flooding, sending potentially millions of displaced people to crowded areas where diseases can spread quickly.

(JMREINHOLD, 2018).
The Clean Air Act of 1970 sought to change all that. It marked the first time the federal government took responsibility for protecting the air quality for all U.S. citizens by regulating harmful emissions from things like cars and factories. The act was later expanded in 1990 to address acid rain and ozone depletion—and it's working. In its 2011 prospective report, the Environmental Protection Agency projected that the Clean Air Act would prevent more than 230,000 early deaths by 2020

The simple act of filtering and chlorinating water systems in the India has resulted in significant declines in once-common diseases like typhoid. By one estimate, for every thousands of rupees invested in clean water technologies, and that clean water was responsible for the bulk of the decline in childhood mortality in the country.**(D WATER, 2015)**

More than 40 % of the population in Flint lives below the poverty line, roughly 2.8 times the national average poverty rate in the India. The county where the town resides has a history of poor health, ranking 81st out of 82 Michigan counties for health outcomes. The crisis was a prime example of how environmental health issues often hurt those whose health status is already most at risk.

A primary piece of any public health strategy is information. By understanding what the risks are and where environmental health professionals can better deploy resources to prevent or combat them. This includes investigating and responding to diseases a field called epidemiology as well as screening populations for hazards and establishing surveillance programs.**(P NSUBUGA, 2015)**

Unlike diet and exercise, many environmental health factors are not something that can be exclusively managed at the individual level. Combatting the risk they pose often takes laws, policies, and programs at the local, federal, and international level. It's unrealistic, for example, for everyone to inspect the kitchens of restaurants they frequent or to test their water for heavy metals. That's why we have trained and qualified food safety inspectors and toxicologists who use rigid, standardized screening and inspection measures to ensure our food and water are safe to

consume. It takes a comprehensive and coordinated effort across a vast environmental health system to protect the health and safety of communities throughout the nation and globe.**(AM POPE, 2014)**

That being said, there are many things you can do to protect the environmental health and safety of your community and throughout the planet. You can help improve air quality by riding your bike, taking mass transportation, or switching to telecommuting instead of driving a car to and from work.

Need of the study:
Environment and health refers to those aspects of human health, broadly defined, influenced by the environments (physical, social, biological, psychosocial, chemical, economic, political, cultural) within which we live, work, and play. The disappearance of the fourth largest inland body of water in the world (Aral Sea, Uzbekistan), an as yet inexplicable fourfold increase in asthma in the last two decades in much of the developed world, babies dying of contaminated water in the developed world (Walkerton, Ontario, Canada), hundreds of thousands of babies dying as a result of contaminated water in the developing world, an as yet inexplicable doubling of deadly peanut allergy in most of the Western world, so much waste we cannot safely dispose of it all, such high demands for energy that we imperil human safety through the proliferation of nuclear power; these are all examples of relationships between human health and the environment that are of paramount and increasing importance to researchers, policymakers, and the general public. This situation has been punctuated by the occurrence of major environmental disasters such as Seveso (Italy), Love Canal (New York), Three Mile Island (Pennsylvania), Bhopal (India) and Chernobyl (former USSR). Ongoing concerns about creeping environmental disasters keep environment and health on the front page of the newspaper, and the top of the research agenda. The primary challenge in addressing these relationships involves the complexity of designing investigative studies, measuring exposures and outcomes, and evaluating the evidence. Despite these difficulties, decisions must be made with respect to policy, regulations, and guidelines, put in place to protect the health of the public.**(S.J. ELLIOTT, 2018)**

This was a prospective case-control study conducted in the nutrition ward of a tertiary hospital in a metropolitan city from October 2014 to September 2015. After the clearance from Institutional Review Board, all underweight infants, 1 month to 6 months of age, fulfilling the criteria for weight for age <-2 SD by WHO charts, were enrolled in the study. A total of

60 underweight infants were enrolled in this study. Infants with organic cause for malnutrition, infants born to HIV positive mothers, and infants of mothers with no milk output were excluded from the study. History and clinical findings were recorded in a case record form. Once identified as lactation failure, infants were randomly allocated into two groups using SAS 9.2 package. Both, cases and controls were counselled regarding breast feeding practices as per a pre-designed pre-set lactation counselling module based on WHO/UNICEF breastfeeding counselling training manual.**(WHO/UNICEF, 2016)**

Conducted a study upon the determinants of immunization coverage among children in Mathare valley, Nairobi. The results showed that knowledge on immunization was high with 90% of the respondents able to define immunization. The attitude on immunization was positive with age, level of education, attitude and knowledge of immunization among the residents were significant determinants of immunization coverage. Advanced mothers age, low level of education and relative lack of knowledge on immunization were responsible for the low coverage.**(KAMAU, N., ESAMAI, F.O.,2015)**

The reviews support the improper utilization of the available resources by the community the investigator felt that the more health issues in our country. Before giving health education it is better to assess the awareness regarding environmental health issues and progress in India among health care workers. So the investigator selected the community peoples regarding to assess the effectiveness of planned teaching program on environmental health.

PROBLEM STATEMENT:
"A study to assess the effectiveness of planned teaching programme on environmental health among the community people in selected rural area of Gandhi Nagar Bhopal (M.P.)."

OBJECTIVES:
1. To assess the pre-test knowledge scores regarding environmental health among the Community people.
2. To evaluate effectiveness of planned teaching program on knowledge regarding environmental health among the Community people.
3. To find out association of pre- test knowledge scores of Community people with their selected demographic variables.

HYPOTHESIS:
H_1-There is significant difference between mean pre-test and post-test knowledge scores regarding environmental health among the Community people at $p < 0.05$ level of significance.

H_2: - There is significant association between pre-test knowledge scores of Community people with their selected demographic variable at $p < 0.05$ level of significance.

OPERATIONAL DEFINITIONS:
ASSESS: It refers to evaluation of desired or intended out came of the study.

EFFECTIVENESS: It refers to the outcome of the Planned Teaching Programme in terms of improvement in knowledge regarding environmental health among the Community people as determined by significant difference in pre and post-test knowledge score.

PLANNED TEACHING PROGRAM: In this study, planned teaching programme refers to systematically developed teaching aids designed for teaching Community people regarding environmental health.

ENVIRONMENT HEALTH: It refers to the control of all those factors in human's physical environment which exercise a deleterious effect on his physical development, health and survival.

MATERIAL AND METHODS:
Research approach: Quantitative research approach

Research design: *Pre-experimental one group pre-test post-test design.*

Variables:
Independent variables: Planned teaching program regarding environmental health among Community people at selected rural area of Gandhi Nagar Bhopal (M.P.).

Dependent variables: knowledge score of post -test of Community people regarding environmental health.

Research setting: The study was conducted *in* rural area of Gandhi Nagar Bhopal (M.P.).

Population:
Target Population- Community People in selected rural area of Gandhi Nagar Bhopal

Accessible population – Community People

Sample: Community people.

Sample size: 50 Community people.

Sample techniques:
Convenient sampling technique was used for the present study.

Criteria for sample selection:
Inclusion criteria:
➢ Community people who was willing to participate in this study.

➢ Community people who was present at the time of data collection.

Exclusion criteria:
➢ Community people who do not willing to participate in this study.
➢ Community people who do not present at the time of datacollection.

Tool and method of data collection:
DEVELOPMENT OF TOOL
A structured knowledge questionnaire was prepared based on the objectives of the study in order to assess the effectiveness of PTP on environmental health among Community people based on the assumption that they have some knowledge on dental caries.
➢ Review of literature
➢ Discussion with experts in the field of community health nursing and statistician.

DESCRIPTION OF THE TOOL
The structured knowledge questionnaire has two parts. Part I and Part II

Part I: Demographic Variable-The first part consisted of 7 items related to demographic variable (age, religion, education, types of family, family income, source of information, Have you attained any informational educational program regarding environmental health?).

Part II: Structured knowledge questionnaire on environmental health.

It consisted of 30 items related to knowledge regarding environmental health. The maximum score was thirty. Each correct answer had a score of one and zero for wrong answers, thus the maximum score was 30.

CRITERIA FOR GRADING OF KNOWLEDGE SCORE

Level of knowledge	Knowledge score
Poor	0-10
Average	11- 20
Good	21-30

Reliability of tool: The internal consistency was computed using Karl Pearson's Correlation Coefficient formula and with split half technique. A value of 0.71 for structured knowledge questionnaire

was obtained. Hence, the tool was considered to be moderately reliable. After validation, tool modified according to suggestion of Expert's & prepared the final tool.

Data collection procedure-:
The investigator obtained written permission from the rural area of Gandhi Nagar Bhopal (M.P.). The data collection period extended from 01/06/2021 to 30/06/2021 as per the convenience of the authority. The purpose of the study was explained to them and confidentiality was assured to all the respondents. The Community people were selected by convenient sampling.

The pre-test was conducted on a total of 5 respondents following the administration of PTP and an instruction to attend for the post-test on the fifth day to find out the effectiveness of PTP in increasing their knowledge.

Post-test was conducted from15/06/2021Respondents cooperated well with the investigator. Data collection process was terminated on environmental health and thanking the respondents for their cooperation and patience.

Ethical consideration:
The researcher had taken permission from the Chief medical officer, Bhopal district in various dental caries to conduct the research study. informed consent was taken from the Community people before data collection.

Plan for data analysis:
The plan for data analysis includes-
➢ Demographic data was planned to analyze in terms of frequency and percentage.

➢ The knowledge scores of Community peopleafter the administration of PTP would be analyzed using range, mean, standard deviation, and frequency.

➢ Analysis of knowledge difference of Community peopleregarding environmental health would be found out using paired't' test.

➢ Association between pre-test knowledge score and selected demographic characteristics will be found out by chi-square test.

RESULTS:

Table 1: Distribution of subjects according to their demographic variables

N=50

S.NO.	DEMOGRAPHIC VARIABLES	Frequency	Percentages
	Age in years		
	18 – 29 years	12	24%
1	30 – 39 years	17	34%
	40 – 49 years	13	26%
	50 – 60 years	8	16%
	Religion		
	Hindu	15	30%
2	Muslim	16	32%
	Christian	11	22%
	Others (specify)	8	16%
	Education		
	High school	16	32%
3	higher secondary	7	14%
	Graduation	17	34%
	Post graduation	10	20%
	Types of family		
4	Nuclear family	22	44%
	Joint family	14	28%
	Extended family	14	28%
	Family income		
	Below 10000	5	10%
5	10001 – 15000	12	24%
	15001 – 20000	17	34%
	Above 20000	16	32%
	Source of information		
	Mass media	10	20%
6	Relatives	5	10%
	Friends	5	10%
	Health personnel	30	60%
	Have you attained any informational educational program regarding environmental health?		
7	Yes	32	64%
	No	18	36%

Table 1- Majority of Community people (26%) of them belongs to 40-49 years, (24%) of them were belongs to age group of 18-29 years, and (32%) of them were belongs to age group of 30-39 years (16%) of them were belongs to age group of 50-60 years. Majority of Community people (30%) of them were belong to Hindu, (32%) of them were belong to Muslim, (16%) of them were Christian and others. Majority of Community people (14%) of them were belong to higher secondary education, (32%) of them were belong to high school, (34%) of them to graduation, and (10%) of them to post graduation. Majority of Community people(28%) of them were belongs to extended family, (44%)of them were belong to nuclear family, and (28%) were belonging to joint family. Majority of Community people (10%) has belong to Rs below 10000, (24%) has belong toRs10001-15000, (34%) were belonging to below Rs15000-20000, (32%) were belong to Rs above 20000. Majority of Community people (20%) of them were mass media, (10%) of them were friends, (10%), of them were belong to relatives and health personnel.

Bar diagram show that majority of Community people (64.00%), of them were belong to Yes, and (36%) of them were belong to No.

Table No: 2- Frequency and percentage wise distribution of Community people based on pre- test level of knowledge score on environmental health in selected rural area of Gandhi Nagar Bhopal (M.P.).

(MEAN, STANDARD DEVIATION)   **N= 50**

S. No	Category	Range	Frequency	Percentage	Mean	Mean %	SD
1	Good	21-30	0	0%			
2	Average	11-20	18	36%	11.9	39.66%	2.3
3	Poor	0-10	32	64%			

The table 2 shows the frequency and percentage wise distribution of pre- test level of knowledge of Community people regarding environmental health in selected rural area of Gandhi Nagar Bhopal (M.P.). The level of knowledge was seen in to 3 categories, such as poor, average and good knowledge. In pre-test majority 64% of the community people had poor knowledge whereas 36% of them had average knowledge, 0.0% of them had good knowledge regarding environmental health. The pre- tests mean score 11.9, SD was 2.3 and mean percentages 39.66%.

Table 3: - Frequency and percentage wise distribution of post- test knowledge score of Community people regarding environmental health at selected rural area of Gandhi Nagar Bhopal (M.P.).

(MEAN, STANDARD DEVIATION)   **N= 50**

S. No	Category	Range	Frequency	Percentage	Mean	Mean %	SD
1	Good	21-30	37	74%			
2	Average	11-20	13	26%	24.42	81.40%	3.8
3	Poor	0-10	0	0%			

The table 3 shows the frequency and percentage wise distribution of post- test level of knowledge of Community people regarding environmental health in selected rural area of Gandhi Nagar Bhopal (M.P.). The level of knowledge was seen in to 3 categories, such as poor, average and good knowledge. In pre-test majority 74% of the community people had good knowledge whereas 26% of them had average knowledge, 00% of them had poor knowledge regarding environmental health. The pre- tests mean score 24.42, SD was 3.8 and mean percentages 81.40%.

COMPARISON OF MEAN PRE-TEST & POST- TEST KNOWLEDGE SCORE

Table 4- Comparison of mean pre- test and post- test knowledge score of Community people of selected rural area of Gandhi Nagar Bhopal (M.P.).

         N=50

S.NO.	Description	Mean	Mean %	SD
1	Pre-test knowledge	11.9	39.66%	2.3
2	Post-test knowledge	24.42	81.40%	3.8

Table 4- Indicate overall pre-test & post- test mean knowledge score of Community people regarding environmental health. The mean post- test score 24.42 more than mean pre- test score 11.9 And SD post- test is 3.8, pre- test SD 2.3 and mean percentage post- test score 81.40% more than mean pre- test score 39.66%.

ANALYSIS OF PRE-TEST AND POST- TEST KNOWLEDGE SCORES OF THE STUDENTS.

Table No: 5- Description of Mean, Mean%, SD of Pre and post -Test Knowledge Scores on environmental health.

         N= 50

S.NO.	Description	Mean	Mean %	SD	t-test	DF	P-value
1	Pre-test knowledge	11.9	39.66%	2.3	28.37	49	0.05 (2.18)
2	Post-test knowledge	24.42	81.40%	3.8			

$P< 0.05*$ $P< 0.01**$ N= 60 $**P<0.05*$ S*= Significant

Table No: 5- Indicated overall pre- test & post- test mean knowledge scores on environmental health. Depicted mean post- test score 24.42 is higher than mean pre- test score of 11.9. The actual gain knowledge score is 13.33% and post- test SD =3.8, pre- test SD=2.3 and computed paired t-test (28.37) (p= 2.18) at the level of <0.05. Thus data showed higher than the tabled value t-test (= 2.18) at the level of <0.05 thus indicated significant difference and effectiveness of planned teaching program, in increasing the knowledge of Community people regarding environmental health. **Hence H$_1$ is accepted.**

Table No: 6 Chi-square Test Showing the Association between Pre-Test Knowledge Score of Community people with their selected socio- demographic variables.

S. No.	Demographic Variables	Knowledge level				DF	Chi square value	Chi value Critical value p>0.05	Inferences
		Good	Average	Poor	Total				
1	Age in years								
	18 – 29 years	0	7	5	12				
	30 – 39 years	0	10	7	17	6	26.3042	0.05 (12.59)	S
	40 – 49 years	0	1	12	13				
	50 – 60 years	0	0	8	8				
2	Religion								
	Hindu	0	3	12	15				
	Muslim	0	10	6	16	6	18.2801	0.05 (12.59)	S
	Christian	0	2	9	11				
	Others (specify)	0	3	5	8				
3	Education								
	High school	0	2	14	16				
	higher secondary	0	1	6	7	6	25.3111	0.05 (12.59)	S
	Graduation	0	8	9	17				
	Post graduation	0	7	3	10				
4	Types of family								
	Nuclear family	0	6	16	22				
	Joint family	0	6	8	14	4	2.5973	0.05 (9.49)	NS
	Extended family	0	6	8	14				
5	Family income								
	Below 10000	0	2	3	5				
	10001 – 15000	0	3	9	12	6	3.6732	0.05 (12.59)	NS
	15001 – 20000	0	7	10	17				
	Above 20000	0	6	10	16				
6	Source of information								
	Mass media	0	10	0	10				
	Relatives	0	2	3	5	6	18.2212	0.05 (12.59)	S
	Friends	0	2	3	5				
	Health personnel	0	4	26	30				
7	Have you attained any informational educational program regarding environmental health?								
	Yes	0	10	22	32	2	18.7209	0.05(5.99)	S
	No	0	8	10	18				

DF: - 2=5.99, 4=9.49, 6=12.59, NS= Not significant, S*= Significant

Chi- Square test analysis to find out the significant association of pre- test knowledge score with all selected Socio- demographic variables like Age as the ($\chi2= 26.30$ and table value 12.59), Religion as the ($\chi2= 18.28$ and table value 12.59), Education as the ($\chi2= 25.31$ and table value 12.59), source of information as the($\chi2= 18.22$ and table value 12.59),Have you attained any informational educational program regarding environmental health? as the($\chi2= 18.7209$ and table value 5.99), Hence it can be interpreted that percentage knowledge score related to socio- demographic variables. **hence H_2 research hypothesis was accepted.**

DISCUSSION:
Analysis of Pre-Test and Post- Test Knowledge Scores of the Students.

Indicated overall pre- test & post- test mean knowledge scores on environmental health. Depicted mean post- test score 24.42 is higher than mean pre-test score of 11.9. The actual gain knowledge score is 13.33% and post- test SD =3.8, pre- test SD=2.3 and computed paired t-test (28.37) (p= 2.18) at the level of <0.05. Thus data showed higher than the tabled value t-test (= 2.18) at the level of <0.05 thus indicated significant difference and effectiveness of planned teaching program, in increasing the knowledge of Community people regarding environmental health.

The hypothesis was tested using paired 't' test. The value of 't' was calculated to analyses the difference between mean pre and post-test knowledge score of Community people regarding environmental health. "t" = 28.37<0.05 * significant

CONCLUSION

The study concluded that planned teaching program was effective in increasing the knowledge score of Community people regarding environmental health.

Recommendations:

➢ Provide environmental health training for the teachers about good to the Community people.
➢ Apply environmental health programs to the Community people about the recommended daily allowances and update of healthy environment.
➢ Making environmental health programs to the teachers about sanitation, environmental hygiene and improve the environmental health.
➢ Integrate environmental health is plays an vital role in member of society as well as whole world also.

Conflict of interest: No

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