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A Study to Evaluate the Effectiveness of Structured Teaching Programme on Knowledge Regarding the ILL Effects of Plastics on Health and Environment among Housewives of Selected Rural Area at Maharashtra

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Abstract

Background: Plastics have become an integral part of daily life; however, their excessive use and improper disposal pose serious threats to human health and the environment. Lack of awareness regarding these hazards contributes to unsafe plastic usage practices. Educating rural housewives can play a significant role in reducing plastic-related health and environmental risks.

Objectives: The study aimed to assess the existing knowledge regarding the ill effects of plastics on health and environment among housewives, evaluate the effectiveness of a Structured Teaching Programme (STP), and determine the association between pre-test knowledge scores and selected demographic variables.

Methods: A quantitative research approach with a pre-experimental one-group pre-test and post-test design was adopted. The study was conducted among 100 housewives selected through non-probability purposive sampling from a rural area of Maharashtra. Data were collected using a structured knowledge questionnaire. Following the pre-test, a Structured Teaching Programme on the ill effects of plastics was administered, and a post-test was conducted on the seventh day. Data were analyzed using descriptive and inferential statistics.

Results: In the pre-test, 46% of participants had inadequate knowledge and 54% had moderately adequate knowledge, with a mean knowledge score of 11.34 (37.8%). After the intervention, 76% of participants had adequate knowledge and 24% had moderately adequate knowledge, with a mean knowledge score of 23.06 (76.8%). The mean difference between pre-test and post-test scores was 11.72. The calculated paired t-value ($t = 59.03$, $p < 0.05$) indicated a statistically significant improvement in knowledge following the Structured Teaching Programme. No significant association was found between pre-test knowledge scores and demographic variables such as age, religion, monthly family income, and waste disposal methods.

Conclusion: The Structured Teaching Programme was highly effective in improving the knowledge of housewives regarding the ill effects of plastics on health and environment. Educational interventions can be an effective strategy for promoting environmental awareness and encouraging safer plastic usage practices in rural communities.

Keywords: Structured Teaching Programme (STP), Plastics, Health Hazards, Environmental Pollution, Knowledge, Housewives, Rural Community, Health Education, Environmental Awareness, Community Health Nursing

Introduction

"Say no to Plastic, let this planet Reduce,
Reuse, And Recycle‖.

While there are environmental impacts to paper bags, if you look at the lifespan of plastic bags, there's no comparison... It'll threaten wildlife for years to come‖ The Seattle times — Let every individual now think and act as a responsible trustee of the earth, seeking choices in ecology, economics and ethics that will provide a sustainable future, eliminate pollution, poverty and violence, awaken the wonder of life and foster peaceful progress in the human adventure John McConnell, founder of

International earth day Thus, the CPCB estimate of plastic waste generated in India in 2017-18--660,787.85 tonnes, enough to fill 66,079 trucks at 10 tonnes a truck--does not reflect the situation in more than 60 percent of India's states and union. world now produces more than 380 million tonnes of plastic every year, which could end up as pollutants, entering our natural environment and oceans Only 14 of India's 35 regional pollution boards filed information on plastic waste generation in 2017-18, according to the latest report of the Central Pollution Control Board [1].

In world, global primary plastic production 270 million tonnes per year. coastal plastic waste =99.5 million tonnes per year, mismanaged coastal plastic waste 31.9 million tonnes per year India 115,000 tonnes, Huangpu 40,800 tonnes, Nigeria, Cameroon 40,300 to Brazil, Peru, Colombia, Ecuador 38,900 tonnes, Indonesia 38,900 tonnes Philippines 38,800 tonnes, Myanmar35,300 tonnes, Indonesia32,500 tonnes Mekong Thailand, Cambodia, Laos, Myanmar, Vietnam22,800 tonnes,Nigeria21,500 tonnes, Dong19,100 tonnes, Indonesia17,100 tonnes, Magdalena 16,700 tonnes, Taiwan 14,700 tonnes, Hanjiang 12,900 tonnes, Indonesia12,800 tonnes, Nigeria 11,900 tonne [2].

High-income countries, including most of Europe, North America, Australia, New Zealand, Japan and South Korea have very effective waste management infrastructure and systems; this means discarded plastic waste (even that which is not recycled or incinerated) is stored in secure, closed landfills. see the section on littering below. Across many low-to-middle-income income countries, inadequately disposed waste can be high; across many countries in South Asia and Sub-Saharan Africa, between 80-90 percent of plastic waste is inadequately disposed of, and therefore at risk of polluting rivers and oceans. High share of the world's ocean plastics pollution has its origin in Asia. China contributes the highest share of mismanaged plastic waste with around 28 percent of the global total, followed by 10 percent in Indonesia, 6 percent for both the Philippines and Vietnam. Other leading countries include Thailand (3.2 percent); Egypt (3 percent); Nigeria (2.7 percent) and South Africa (2 percent). We discuss why such countries have high mismanaged plastic waste rates later in this entry. While many countries across Europe and North America had high rates of per capita [3].

Background of Study

According to WHO (1946), Health is a ―state of complete physical, mental and social well being and not merely the absence of disease or infirmity [11].

Richard C. Thompson *et al*, (2009) explained thatplastics have transformed everyday life; the environment and human health synthesized current understanding of the benefits and concerns surrounding the use of plastics and look to future priorities, challenges and opportunities. It is evident that plastics bring many societal benefits and offer future technological and medical advances: Usage is increasing and annual production is likely to exceed 300 million tones by 2010 [12].

L.K.Arnold (1968) found that the first man-made plastic was created by Alexander parkes in 1862. The material called parkesine was an organic material derived from cellulose that once heated could be molded, and retained its shape when cooled. A material consisting of very large molecules characterized by light weight, high corrosion resistance, high strength-to-weight ratios, and low melting points. Most plastics are easily shaped or formed [13].

The average annual rate of growth of 8.1% that brought all solid polymers from 7 million tons in the world in 1960 to 196 million tons in 2005 and to continue reaching over 365 million tons in 2015, 540 million tons in 2020. Plastics Europe noted that the world wide plastics production rose to 280 million tones in 2011. This represents around 4% increase from 2010. When 270 million tones of plastics were produced from 2010 to 2016, global plastics consumption is expected to grow by an average of about 4% each year [14].

Johnson *et al*., (2010) explained that plastic playing an increasing role in packaging and consumer products plastics also take up a growing percentage of municipal solid waste streams and pose environmental challenges. Thin plastic bags made from less than 20 micron thick films are choking the drains of many cities causing uncontrolled floods during rainy season. Plastic garbage are estimated to be killing a million creatures in the Sea every year. Plastic bags littering has lead to banned use of thin bags by the consumer industry during retails Sales of Products in many countries [15].

Need for Study

Eating plastic animals died, seeing plastic nature cried. So say no to plastics! Plastic is everywhere in today's lifestyle. It's used for packaging, protecting, serving, and even disposing of all kinds of consumer goods. Through industrial revolution, mass production of goods started and plastic seemed to be a cheaper and effective raw material. Today, every vital sector of the economy starting from agriculture to packaging, automobile, building construction, communication or InfoTech has been virtually revolutionized by the applications of plastics8 The major chemicals that go into the making of plastic are highly toxic and pose serious threat to living beings of all species on earth. Some of the constituents of plastic such as benzene and vinyl chloride are proven to cause cancer, and other gases and liquid hydrocarbons spoil earth and air. The noxious substances emitted during the production of plastic are synthetic chemicals like ethylene oxide, benzene and xylenes. Besides hitting hard the ecosystem. Which is already fragile, these chemicals can cause an array of maladies ranging from birth defects to cancer, damage the nervous system and the immune system and also adversely affect the blood and the kidneys [18].

The hazardous waste generated in the country per annum is estimated to be around 4.4 million tonnes. While as per the estimates of Organization for Economic Cooperation and Development (OECD) derived from correlating hazardous waste generation and economic activities, nearly five million tons of hazardous waste are being produced in the country annually. Twelve States of the country (Maharashtra, Gujarat, Tamil Nadu, Orissa, Madhya Pradesh, Assam, Uttar Pradesh, West Bengal, Kerala, Andhra Pradesh, Karnataka and Rajasthan) account for 97% of total hazardous waste generation. The top four waste generating states are Maharashtra, Gujarat, Andhra Pradesh and Tamil Nadu [19].

Objective of Study

1. To assess the of existing level of knowledge regarding the ill effects of plastics on health and environment among housewives.

2. To administer the STP on knowledge regarding ill effect of plastics on health and environment among housewives.
3. To evaluate effectiveness of structured teaching program on knowledge regarding the ill effects of plastics on health and environment among housewives.
4. To find out association between pre-test knowledge score of housewives regarding the ill effect of plastic on health and environment with their selected demographic variables.

Hypothesis:

H0 = There is a no significant difference between mean pre-test and posttest knowledge score regarding the ill effects of plastics on health and environment among housewives.

H1= There is significant difference between mean pre and post-test knowledge regarding ill effects of plastics on health and environment among housewives.

H2= There is significant association between mean pre-test knowledge score regarding ill effects of plastics on health and environment among housewives with their selected demographic variables..

Methodology and Material

Methodology of research organizes all the components of study in a way that most likely will lead to valid answers for the problems that have been posted. This chapter deals with the methodology adopted for the evaluating effectiveness of structured teaching program. It includes research approach, research design the sample and sample technique used, preparation of PPT, procedure for data collection and for the data analysis.

Research Approach

The selection of research approach is a basic procedure for the conduct of research inquiry. In view of the nature of the problem selected for the study and objective to be accomplished, quantitative approach was considered an appropriate research approach for the study. This study is intended to find out effectiveness of structured teaching programme on the level of knowledge regarding ill effect on plastic on health and environment among housewives.

Research Design

The research design of the study spells out the basic strategies that investigator adopts to develop evidence that accurate and interpretable. The research design is investigators overall plan for answering the research question. The selection of design depends upon the purpose of the study, research approach and variables to be studied.

Pre experimental one group pretest and post-test design was adopted to assess the effectiveness of structured teaching program on knowledge regarding ill effect on plastic on health and environment among housewives.

Pre - Test	Intervention	Post – Test
O_1	X	O_2

Key –

O_1 – Assessment of pre-test level of knowledge regarding the ill effects of plastics on health and environment among housewives By using structured knowledge questionnaire.

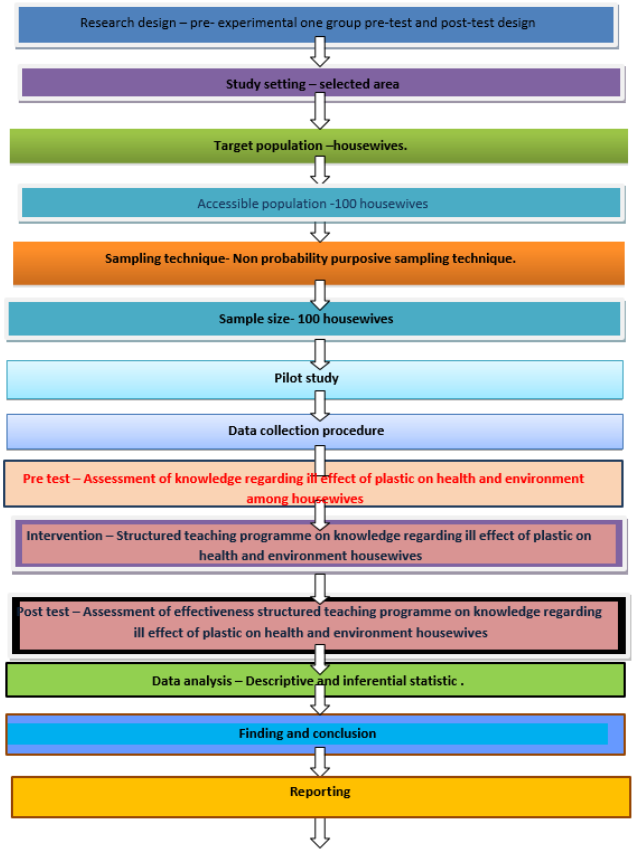
O_2 - Assessment of post-test level of knowledge regarding the ill effects of plastics on health and environment among housewives, Using same structured knowledge questionnaire on 7th day of providing planned teaching program.

X – Administration of planned teaching program on knowledge regarding the ill effects of plastics on health and environment among housewives,, for about 20 minutes.

Research Setting

Research setting refers to the area where study is conducted. Setting are the most specific places where data collection occurs based on the nature of the research question and type of information needed to address it. The settings selected for present study was at selected rural area.

Schematic Presentation of Research Methodology



➢ Sample

Sample is representative unit of a target population, which is to be worked upon by investigators during their study. The patients who satisfied the inclusion criteria were the samples of the study.

➢ Sample Size and Sampling Technique

- **Sample size**

Sample comprises of 100 housewives.

- **Sampling technique**

Non probability purposive sampling technique.

➢ Eligibility Criteria

The criteria for defining the population and selecting the samples is based on cost, practical concern, people's ability to participate in the study and design consideration. They should have the inclusion and exclusion criteria. The present study had following inclusion and exclusion criteria.

A) Inclusion Criteria

The criteria for sample selection are who

1. The housewives who are willing to participate.

2. The housewives who are available at the time of data collection.
3. The housewives who are able to understand marathi and English.

B) Exclusion Criteria

1. People who are migrating

- **Research Variables:** Variables are characteristics that vary among subjects being studied. It is the focus of the study and reflects the empirical aspects of the concepts being studied.
- **Independent Variables:** Structured teaching programme on the ill effect of plastics on health and environment.
- **Dependent Variables:** Knowledge regarding ill effect of plastics on health and environment among housewives.
- **Demographic Variables:** Age, religion family monthlyincome, Usage of plastics, Plastic disposal method, Source of information.

Organization of Data

The findings of the study were grouped and analyzed under the following sessions.

Section A: Description of the demographic variables.

Section B: Assessment of pretest and post test level of knowledge regarding ill effect of plastics on health and environment among housewives.

Section C: Effectiveness of structured teaching program on knowledge regarding ill effect of plastics on health and environment among housewives.

Section D: Association of pre test level of knowledge regarding ill effect of plastics on health and environment among housewives with their selected demographic variables.

Section A

Table 1: Percentage wise distribution of housewives according to their demographic characteristics n=100

Demographic Variables	Frequency(F)	Percentage(%)
Age(yrs)		
25yrs to 30 yrs	40	40%
31yrs –35yrs	20	20%
36yrs –40yrs	20	20%
40 -45yrs	20	20%
Religion		
Hindu	60	60%
Muslim	12	12%
Other	18	18%
Christian	10	10%
Monthly family income pattern		
<1500 rs	66	66%
1501 -4999 rs	15	15%
5000 -14999	10	10%
15000-25000	9	9%
Waste of disposal		
open land	45	45%
burning	10	10%
dust bin	40	40%
other method	5	5%

Table 2: Frequency and percentage distribution of the housewives according to age

Demographic Variables	Frequency(F)	Percentage(%)
1] Age(yrs)		
25yrs to 30 yrs	40	40%
31yrs –35yrs	20	20%
36yrs –40yrs	20	20%
41 -45yrs	20	20%

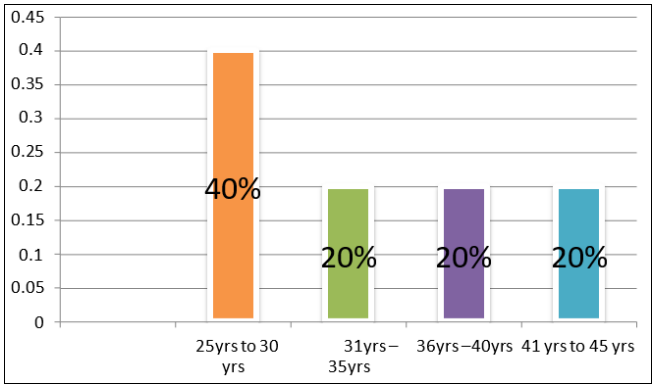


Fig 1: Distribution of the housewives according to age

Above graph no.1 3d cluster column diagram shows that majority 40 (40%) housewives were aged between 25-30years, between 31 to 35 years 20 (20%), between 36- 40 years 20(20%) and between 41 to45 years 20(20 %).

Table 3: Frequency and percentage distribution of the housewives according to Religion

S. No.	demographic variables	Frequency [f]	Percentage [%]
2] Religion			
1	a) Hindu	60	60%
2	b) Muslim	12	12%
3	c) Other	18	18%
4	d) Christian	10	10%

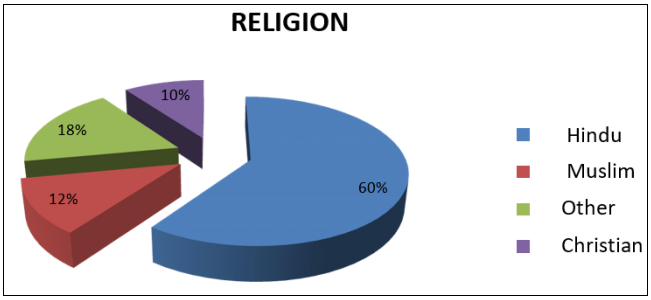


Fig 2: Percentage distribution of the housewives according to Religion

Above graph no.2 exploded pie in 3d diagram shows that majority 60(60%) people were hindu religion, 12(12%) were muslim religion, 18(18%) were other religion and 10(10 %) were Christian.

Table 4: Frequency and percentage distribution of the housewives according to family monthly income

S. No.	demographic variables	Frequency [f]	Percentage [%]
	3] monthly family income		
1	a) <1500 rs	66	66%
2	b) 1501 -4999 rs	15	15%
3	c) 5000 -14999 rs	10	10%
4	d) 15000-25000 rs	9	9%

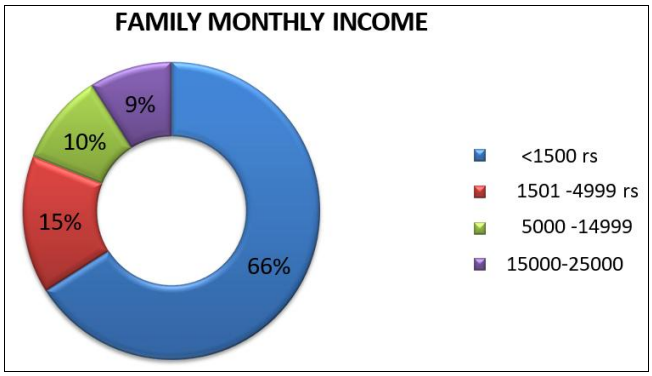


Fig 3: Percentage distribution of the housewives according to family monthly income

Above graph no.3 doughted diagram shows that majority 66(66%) housewives monthly income is <1500 rs, 15(15%) monthly income is 1501 to 4999 rs, 10(10%) monthly is 5000 -14999 and 9(9%) monthly income is 15000 to 25000.rs.

Table 5: Frequency and percentage distribution of the housewives according to waste of disposal

S. No.	demographic variables	Frequency [f]	Percentage [p]
	4] waste of disposal		
1	a) open land	45	45%
2	b) burning	10	10%
3	c) dust bin	40	40%
4	d) other method	5	5%

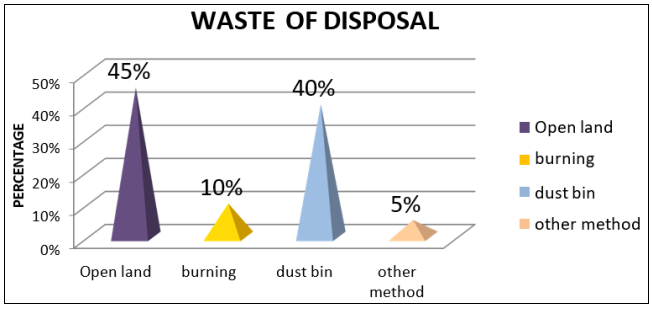


Fig 4: Percentage distribution of the housewives according to waste of disposal

Above graph no.4 cluster diagram shows that majority 45(45%) housewives discard waste in open land. 10 [10%] housewives discard waste in burning. 40[40%] housewives discard waste in dust bin. 5[5%] housewives waste disposal in other method housewives.

Section B

Table 6: Assessment of Level of Knowledge Regarding the Ill Effects of Plastics on Health and Environment among Housewives

Level of pre test knowledge	Score Range	Level of Pre test Knowledge Score	
		No of housewives	Percentage
Inadequate	0-10	46	46%
Moderate	11-20	54	54%
Adequate	21-30	00	00%
Mean knowledge score		11.34	
Mean % Knowledge Score		37.8%	

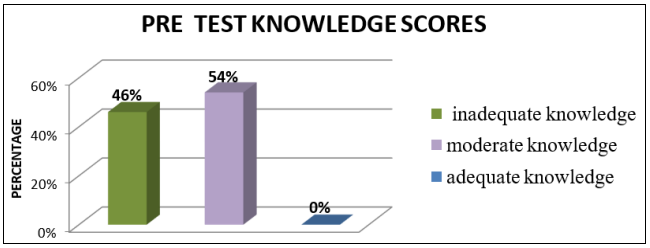
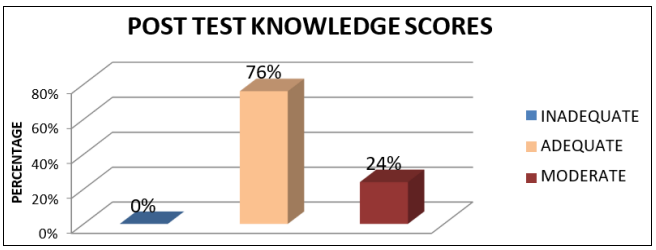


Fig 5: General assessment of pre-test knowledge

The above figure no 5 shows that pre test 46 % of the housewives had inadequate level of knowledge score, 54 % had moderate and 0% of them had adequate level of knowledge score. Mean knowledge score in pretest was 11.34 and mean percentage of knowledge score in pre test was 37.8%.

Table 7: Assessment with level of post test knowledge

Level of post test knowledge	Score Range	Level of Post test Knowledge Score	
		No of housewives	Percentage
Inadequate	0-10	00%	00%
Moderate	11-20	24	24%
Adequate	21-30	76	76%
Mean knowledge score		23.06	
Mean % Knowledge Score		76.8	



Graph 6: Assessment with post test knowledge score

The above figure 6 shows that post -test 00 % of the housewives had inadequate level of knowledge score, 76 % had moderate and 24 % of them had adequate level of knowledge score. Mean knowledge score in post test was 23.06 and mean percentage of knowledge score in post-test was 76.8%.

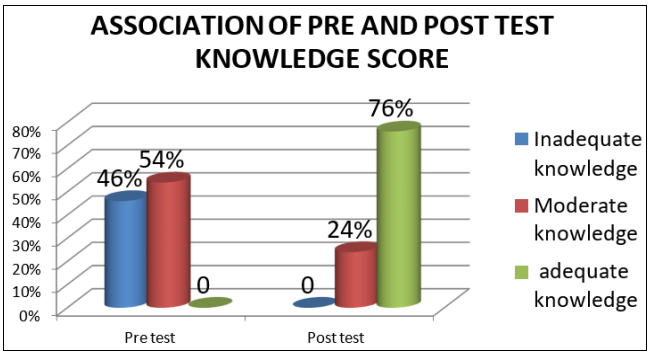
Section C

Comparison of Pre-Test and Post-Test Knowledge Score Regarding Ill Effect of Plastic on Health and Environment

This section deals with analysis and interpretation of the collected to assess the effectiveness of structured teaching program on knowledge regarding ill effect of plastic on health and environment over all comparison of mean standard deviation and paired t value of pre –test and post test knowledge score of ill effect of plastic on health and environment among housewives.

Table 8: General Assessment of Knowledge Pre VS Post Test

S. No	Aspects	Level of knowledge					
		Inadequate knowledge		Moderately adequate Knowledge		Adequate knowledge	
		F	Percentage	F	Percentage	F	Percentage
1.	Pre-test	46	46%	54	54%	00	00%
2.	Post-test	00	00%	24	24%	76	76%

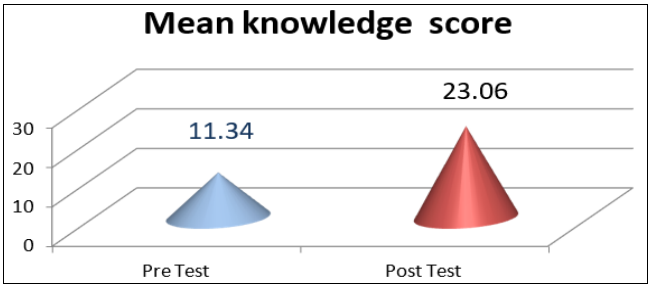


Graph 7: General Assessment of Knowledge Pre VS Post Test

The data presented graph 7reveals that enhancement of knowledge level in that in pre-test majority 46 (46%) housewives had inadequate knowledge and 54(54%) housewives had moderate knowledge regarding ill effect of plastics on health and environment. Whereas in the post-test assessment after the structured teaching program out of 100 samples 24(24%) people had adequate 76[76%] people had moderately adequate knowledge and none of then had inadequate knowledge regarding the ill of plastics on health and environment among housewives.

Table 9: Significance of difference between knowledge score in pre and post test of housewives n=100

Overall	Mean	SD	Mean Difference	t-value	p-value
Pre Test	11.34	2.70	11.72	59.0369	0.0001* p<0.05
Post Test	23.06	3.74		Df= 99	significant



Graph 8: Significance of difference between knowledge score in pre and post test of housewives

Graph no.8 cone showed that Significance of difference between knowledge score in pre and post test mean score. The graph no. 8 shows that in the pre test the mean was 11.34 with SD is 2.70 and in the post test mean was 23.06 with SD is 3.74. The mean difference of knowledge score was 11.72±1.04. The paired t test was used to assess effectiveness of structured teaching program on knowledge regarding ill effect of plastic on health and environment. The tabulated value for n=100-1 i.e. 99 degrees of freedom. The calculated _t' value i.e. 59.0369 are much higher than the tabulated value at 5% level of significance for overall knowledge score of housewives which is statistically acceptable level of significance. This is indicate that the structured teaching program is effective teaching to enhanced the knowledge of housewives. Hence the research hypothesis 1 is statistically accepted.

Section D

The Table 11 shows the association of pre test knowledge score with age of housewives The chi-square statistic is 2.8784 The p-value is 0.4107 The result is not significant at p>0.05

Table 10: Association of Level of Pre Test Knowledge Score Regarding Ill Effect on Plastic on Health Environment among Housewives in Relation to Demographic Variables n = 100

S. No.	Demographic variables	Knowledge Level				Chi-square value	P Value
		Inadequate Knowledge	Moderately adequate knowledge	Adequate knowledge	total		
1.	**Age in years**					2.8784	P-=.4107 NS
	25 yrs -30 yrs	19	21	0	40		
	31yrs-35yrs	11	9	0	20		
	36yrs-40yrs	6	14	0	20		
	41 yrs -45 yrs	10	10	0	20		
	Total	46	54	0	100		
2.	Religion					1.2061	P=751541 NS
	Hindu	24	36	0	60		
	Muslim	8	4	0	12		
	Other	8	10	0	18		
	Christan	6	4	0	10		
	Total	46	54	0	100		
3	**Monthly Family income**					1.2061	P=0.7541 NS
	<1500 RS	32	34	0	66		
	1500-4900 RS	7	8	0	15		
	5000-14999 R	3	7	0	10		

	15000-25000 RS	4	5	0	9		
	Total	46	54	0	100		
4	**Waste of disposal**					3.3816	P=0.33644 NS
	Open land	18	27	0	45		
	Burning	5	5	0	10		
	Dust bin	22	18	0	40		
	Other method	1	4	0	5		
	Total	46	54	0	100		

Table 11: Association of pre- test knowledge score among housewives in relation to age

S. No.	Demographic variables	Knowledge Level				Chi-square value	P Value
		Inadequate Knowledge	Moderately adequate knowledge	Adequate knowledge	total		
1.	**Age in years**						
	25 yrs -30 yrs	19	21	0	40	2.8784	P-=.4107 NS
	31yrs-35yrs	11	9	0	20		
	36yrs-40yrs	6	14	0	20		
	41 yrs -45 yrs	10	10	0	20		
	Total	46	54	0	100		

Table 12: Association of pre- test knowledge score among housewivwives in relation to religion n=100

S. No.	Demographic Variables	Knowledge Level				Chi-square value	P value
		Inadequate knowledge	Moderately adequate Knowledge	Adequate knowledge	Total		
2	**Religion**					1.2061	P=751541 NS
	Hindu	24	36	0	60		
	Muslim	8	4	0	12		
	other	8	10	0	18		
	christan	6	4	0	10		
	Total	46	54	0	100		

The chi-square statistic is 1.2061 The p-value is. The result 75.1541. The result is not significant at p>0.05

Table 13: Association of pre- test knowledge score among housewives in relation to monthly family income

S. No.	Demographic variables	Knowledge Level				Chi-quare alue	P < value
		Inadequate knowledge	Moderately adequate knowledge	Adequate knowledge	Total		
3	**Monthly Family income of housewives**					1.2061	P=0.7541 NS
	<1500 RS	32	34	0	66		
	1500-4900 RS	7	8	0	15		
	5000-14999 RS	3	7	0	10		
	15000-25000 RS	4	5	0	9		
	Total	46	54	00	100		

The chi-square statistic is 1.2061. The p-value is 0.7541. The result is not significant at p>0.05

Table 14: Association of pre- test knowledge score housewives in relation to Waste of disposal n=100

S. No.	Demographic variables	Knowledge Level				Chi-square Value	P value
		Inadequate knowledge	Moderately adequate knowledge	Adequate knowledge	Total		
4.	**Waste of disposal**					3.3816	0.33644ns
	Open land	18	27	0	45		
	Burning	5	5	0	10		
	Dust bin	22	18	0	40		
	Other method	1	4	0	5		
	Total	46	54	0	100		

The chi-square statistic is 3.3816. The p-value is 0.33644 The result is not significant at p>0.05

Summary

This chapter deals with the analysis and interpretation of data using descriptive and inferential statistics. Frequency and percentage were used to analyze the socio-demographic variables. Mean, mean percentage, standard deviation was computed to analyze the knowledge scores of people residing near industrial area. Effectiveness of planned teaching program was assessed by using paired_t' test. Chi-square was calculated to find out the association between pre-test levels of knowledge with selected socio-demographic variables of regarding ill effects of plastics on health and environment among housewives of selected rural area at maharashtra.

Discussion, Findings, Implications, Conclusion and Recommendations

Any research study cannot be considered complete till the research findings have been propagated among concerned

fraternity and other significant people. This chapter presents brief summary of the study and its significant findings. Discussion of the study, it also includes the implications for nursing and health services followed by delimitations. This chapter also deals with recommendations for future research in this field, and conclusion of the study.

Brief Summary of the Study

The primary aim of the study to ―Evaluate the effectiveness of structured teaching program on the knowledge regarding ill effects of plastics on health and environment among housewives.

Therefore this study includes assessment of knowledge among the housewives after the structured teaching program to evaluate its effectiveness.

The Objectives of the Study were

Objectives

1. To assess the of existing level of knowledge regarding the ill effects of plastics on health and environment among housewives.
2. To administer the on knowledge structured teaching programme regarding ill effect of plastics on health and environment among housewives.
3. To evaluate the effectiveness of structured teaching programme on knowledge regarding ill effect of plastics on health and environment among housewives.
4. To find out association between pre-test knowledge score of housewives regarding the ill effect of plastic on health and environment with their selected demographic variables.

The Study Attempted to Examine the Following Research Hypothesis

H0 = There is a no significant difference between mean pre-test and post-test knowledge score regarding the ill effects of plastics on health and environment among housewives.

H1 =There is a significant difference between mean the pre and post-test knowledge regarding ill effects of plastics on health and environment among housewives.

H2=there is a significant association between mean the pre-test knowledge score regarding ill effects of plastics on health and environment among housewives with their selected demographic variables.

The review of literature was derived from primary and secondary sources, along with professional experience and expert‘s guidance from the field of community health nursing provided a comprehensive framework for the selection of problem and for achieving the objectives of the study. It also strengthened the ideas for conceptual framework, aided to design the methodology and develop the tool for data collection. The conceptual framework for the study was based on modified general system theory model l. The investigator adopted quantitative research approach and one group pre-test and post – test only design was used to assess the effectiveness of structured teaching program on knowledge regarding the ill effects of plastics on health and environment among housewives of selected rural area at maharashtra The sample size was 100 who were assigned by non probability purposive sampling technique.

The Tool for Data Collection had 2 Parts

- **PART I: The tool for data collection had 2 Parts.**
- **Part I:** Demographic data to collect information on age, religion, family monthly income usage of plastics, plastic disposal method, source of information.
- **Part II:** Structured knowledge questionnaire to assess the knowledge regarding ill effect of plastic on health and environment. Among housewives in selected area.

Medical Nursing experts validated the tool. The pilot study was conducted and it was found practicable and feasible to proceed with the main study. The reliability score was r = 0.91 for knowledge. The findings showed that the tool was found to be highly reliable to proceed with the main study.

The ethical aspect of research was maintained throughout the study by obtaining ethical clearance, formal permission from the respective authorities and consent from the patients. Privacy and confidentiality was maintained throughout the data collection period and collected data was used only for the research purpose.

The main study was conducted in selected area. The teaching plan was tested for its effectiveness by pre test and post test. On day one, the pretest was administered, followed by administering structured teaching programme. On 7th day post test was administered.

The data gathered were analyzed and interpreted according to the objectives of the study. The descriptive and inferential statistical were used for the data analysis.

The main study was conducted at the selected rural area. The teaching plan was tested for its effectiveness by pre-test and post- test. On day one, the pretest was administered, followed by next day administering structure teaching program. On 7th day post- test was administered. The data gathered were analyzed and interpreted according to the objectives of the study. The descriptive and inferential statistical were used for the data analysis.

Findings of the Study

- **Section A:** Findings related to demographic variables of housewives
- **Section B:** Assessment of pre- test and post -test level of knowledge.
- **Section C:** Comparison between pre- test and post -test knowledge score.
- **Section D:** Aspect wise pre- test and post- test knowledge score.
- **Section E:** Association between knowledge score with selected demographic variables.

References

1. National Environment Agency. .app2.nea.gov.sg/topics, wastestats.aspx Waste Statistics and Recycling Rate for 2010. Available from: URL:http://www.cpcb.nic.in.
2. Plastic: A Problem of Global Proportions.[online]. [Cited 2011 Nov 22]. Available from: http://www.ecologycenter.org/iptf/.
3. Central pollution control board (CPCB) India 2014 Plastics and the Environment Assessing the Impact of the Complete the Ecotourism & Conservation Society of Sikkim. http://www.plasticsresource.com/ plastics_101/ manufacture/how_plastics_are_made.html

4. Kari Embree: Global plastic packaging materials by 2020, july 29, 2016. WWWplastic today.com.
5. Global plastic production rises recycling lags; New worldwide institute analysis explore trends in plastics consumption and recycling for immediate release /Jan 28, 2015. Gaelle gourmelon.
6. Plastic consumptions Jan 13 [cited 2011 Nov 26]. Available from: http://www.business-standard.com/india/news/plastic-consumption-todouble-by-2011/345971/.
7. Dr.parveshbhawan. Central pollution control board [Online], 2009. [cited 2009 Dec]. Available from: URL:http://www.cpcb.nic.in.
8. Environmental Toxicology. National Environmental Engineering Research Institute for the Brihan Mumbai Municipal Corporation plastic Industries, Nov 2002; 13(9):8-10.
9. WECF Women in Europe for a Common Future Blumenstrasse 28 D – 80311 Munich, Germany. wecf@wecf.org
http://www.arb.ca.gov/smp/resburn/resburn. 17
10. The global war against plastic. 2007 Oct 24 [Cited 2011 11]Nov]. Available at: bhttp://nitawriter.wordpress.com/2007/10/24/the-global-waragainst-plastic/
11. Hammami. M.B.A. Survey on awareness and attitude of secondary school regarding. Plastic pollution, implication for environmental education and public health. Cited [2017 July 15]. 10: 10007.
12. Lithner, *et al*. Environment and health hazards ranking and assessment of plastic polymer. Science total environment, Aug 15, 2011; 40(18):3309-3324.
13. Legesse adane, Diriba Muleta. Journal of toxicology and environment health science, August 3, 2011, 234-248.
14. Amaral, Kimberly. Plastic in oceans, sea education association web, May 4, 2010; 14:342-356.
15. Gray L, Hill Feet. Plastic bags use falls by 26%in 2 years and purpose and its eventual riddance into the dust bins, Sep 14, 2010, 1-84.
16. Rhian Tough. Plastic shopping bag environment in fall and policy options, Aug 15, 2007; 30(10):309-324. URL http handlenet.1006.
17. Yuan-Tien Su. Environmental hazards due to plastic uses and respiratory health in young children, Dec 5, 2006; 4:1-84.
18. Girum Bahri. A study on plastic waste and environment degradation [3 jan 2005]. Publication list of org. PP - 345-384.
19. Thiel, *et al*. Floating marine debris in coastal water: Marine pollution. 2003; 46(229):23-44.
20. Karliner J. Corporate planet, ecology and politics in age of globalization san 111(4) [Apr 1997], A208. PP -12-18 18.
21. Lin CY, Shen FY, Lian GW, Chein KL, Sung FC, Chen PC, *et al*. Level of serum bisphenol, harmful chemival in plastic container and atherosclerosis, Aug 24, 2014, 245-256.
22. Wang J, Li L, Lu Y. Investigation and analysis of factors that affect the health of children in the plastic recycling, Sep 2014, 690-692.
23. Nithin Joseph. Journals of Clinical Research, usage of plasyic bags and health hazards, assess the level and perception about legislation. 2013; 3:234-245.
24. Heleal SF, Elshafy WS. Health hazards among workers in plastic industry toxicol and health, oct 29 may 18, 2013, 34-46.