

Impact of Information Booklet on Harmful Effect of Use of Plastics in Relation to Practices among Urban Resident of Pune

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Abstract

Introduction: Plastics are a wide variety of combinations of properties when viewed as a whole. They are used for variety of items and the list could go on and on and it is obvious that much of what we have today would not be possible without plastics

Material and Methods: An experimental study was conducted on practice of community regarding harmful effects of plastics among urban residents of Pune city. The pre-experimental design was adopted and 40 samples were selected through simple random sampling technique. The data was obtained from the participants using an interview method which included details on socio-demographics of the participants, practice of plastics. The same Questionnaire were administered after providing informational booklet as well.

Result: The findings revealed that practice of people regarding the harmful effect of the use of plastics was 45.65 % whereas Post –test score of the practice was 55.11 %, the practices in t-Test at 0.05 level hence the booklet in improving practice needs more hammering among the urban residents.

Key words: Plastics, environmental pollution, harmful effect, bio-degradable, practice.

Introduction

Plastic is material which is used worldwide and plastic wastages do not get decompose easily, resulting in one of our planet's greatest environmental challenges.¹ The production of plastic with lower number of microns is very cheap and people uses plastic due to its durability, low cost and its ease availability.²

Plastic bag wastes pose serious environmental pollutions and health problems in humans and animals. Disposal of plastic waste which is a major cause of environment pollution becomes carcinogenic to human, birth defects, impaired immunity, endocrine disruption, development and reproductive effect.³

Plastic material consists of synthetic and semi-synthetic compounds which can be used to manufacture solid material

India consumes an estimated 16.5 million tonnes, about 1.6 million truck-full, of plastic annually, as per the June 2018 report.⁴

Styrofoam products used in single use plastic, contain carcinogenic chemicals like styrene and benzene, which are extremely toxic if ingested and cause damage to the nervous system, lungs and reproductive organs. Disposing of plastic waste by burning it in open-air pits releases harmful gases like furan and dioxin, which are harmful to the environment and living organisms including man.⁵

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The plastic has unique feature to prepare well-designed and aesthetic products from very low cost material, which are useful for common people. In the plastic and polymer technology there is huge innovations

to shape the plastic into various useful material.⁶

Background

Plastic wastages do not get decompose easily, settles down in the earth that leads to increase in the mass of waste in the Earth. It affects the water cycle by disturbing the rainwater to enter into the land as the water and air cannot pass through it. Initially it show decrease in ground water level and it leads to so many environmental issues. Even it sometimes causes death of animals due to the intake of plastic. The cost for recycling the plastic is very high and almost it is a loss process. The half-life period for plastic is too long that it takes some millions of years to decay.⁷

So this study conducted to have the baseline information regarding the practice of using plastic among community.

Methodology

Study design, setting and sample size

An experimental study was conducted on practice of community regarding harmful effects of plastics among urban residents of Pune city. The pre-experimental one group pre-test post-test design was adopted and 40 samples were selected through simple random sampling technique. The permission was obtained from the Pune Municipal Corporation to conduct study.

Objectives of the study

1. To assess the practices regarding the harmful effects of use of plastics.
2. To determine the effect of informational booklet on practices regarding the harmful effect of use of plastics

Data collection method

The tool had been prepared in four section which consists of the socio demographic variable, assessment of practice (23 items) and information booklet on prevention of hazards of plastics

The interview method was adopted to collect the information. The questionnaires were administered in English and Marathi language. The same questionnaires were used before and after the providing informational booklet. The participants had to reply 23 items to assess the practice of harmful effects of plastics. The favorable reply, considered one (1) point and unfavorable reply, considered zero (0) point.

Data Analysis: The data had been analyzed through descriptive analysis and statistical analysis.

Result

Section I: Description of samples based on personal characteristics

Table No.1 Distribution of participants as per demographic variables (N=40)

Demographic variable	Frequency (f)	Percentage (%)
Age		
· 15-30years	25	62.5%
· 31-45years	7	17.5%
· 46-60years	8	20%
Sex		
· Male	19	47.5%
· Female	21	52.5%
· Other	0	0%
Education		
· Primary	7	17.5%
· Secondary	13	32.5%
· Graduate	20	50%

Cont... Table No.1 Distribution of participants as per demographic variables (N=40)

Occupation		
· service	14	35%
· business	10	25%
· unemployed	16	40%
Marital status		
· Married	20	50%
· Unmarried	19	47.5%
· Widow	1	2.5%

Table no. 1 depicts that 25 (62.5%) of the participants are in age group of 15-30 years and 8 (20%) of them are in age group of 46-60years. Most of subjects 21 (52.5%) were females and 19 (47.5%) were male. 20 (50 %) of participants had completed their graduation.14 (35%) of the participants were doing service and 16 (40%) of them were unemployed. Most of the participants 20 (50%) were married.

Section II – Analysis of data related to the practices of harmful effect on use of plastic

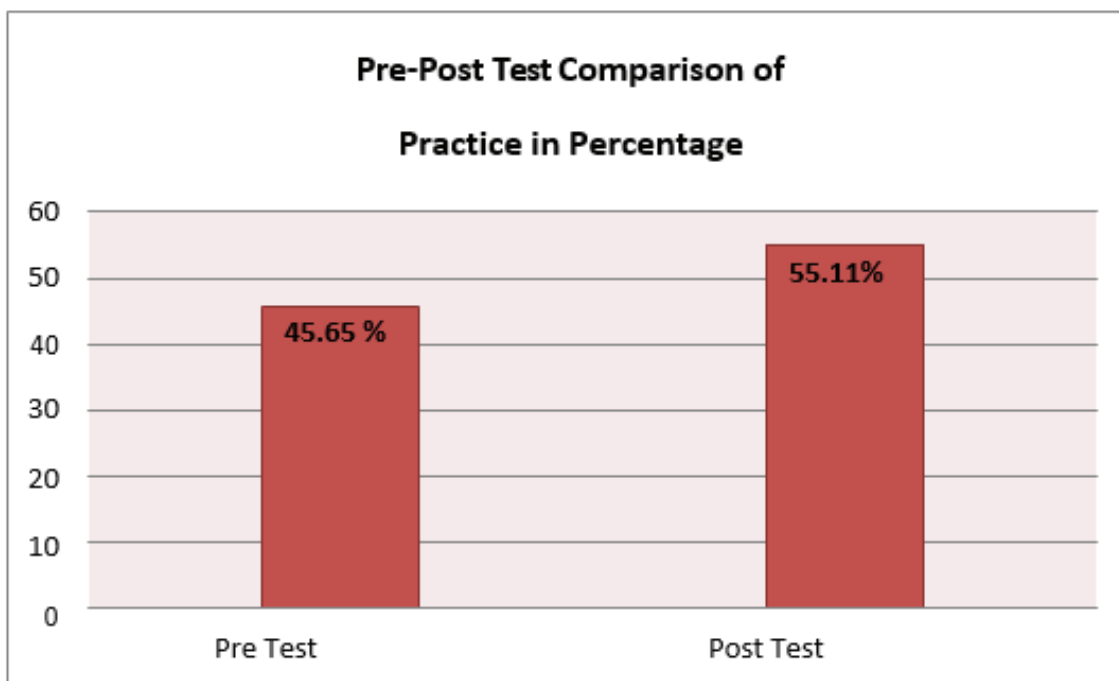


Fig No. 1 Pre and Post Test Comparison of Practice in Percentage

Fig no.1 shows that participants were replied (23)questions regarding the harmful effect of the plastics, the favorable reply before intervention was 45.65% and 55.11 % was the favorable reply after providing informational booklet. Statistics shows that calculated value was greater than table value, hence the informational booklet was effective in improving the favorable practice of use of plastics among the urban residents

Table no.2: Effectiveness of the informational booklet on practices regarding recycling of plastics

Sr. No	Practice Based Questionnaire	Pretest Score frequency (n)	Pretest Score Percentage (%)	Posttest Score frequency (n)	Posttest Score percentage (%)
1	Do you keep on changing your pen made of plastic instead of changing Its refill	14	35%	15	37.5%
2	Do you get your own cloth paper bag for buying groceries	22	55%	28	70%
3	Do you ask your vendor to provide plastic bags	19	47.5%	18	45%
4	Do you use plastic bags or plastic containers to buy parcels	13	32.5%	12	30%
5	Do you try to reuse plastics	20	50%	28	70%
6	How often do you try to reuse plastics	2	5%	4	10%
7	How often do you buy plastic products	28	70%	35	87.5%
8	Do you advise people to reduce the use of plastics	17	42.5%	21	52.5%
9	Do you think we can live without plastics	25	62.5%	34	85%
10	Do you use plastic garbage bags	8	20%	7	17.5%
11	How often do you use plastic garbage bags	9	22.5%	12	30%

Table no.2 stated that practice of participants has been improved in most of the aspect after giving intervention about recycling of plastics.

Table No.3: Effectiveness of the informational booklet on practices regarding the discarding and replacing of plastics

Sr. No	Practice Based Questionnaire	Pretest Score frequency (n)	Pretest Score percentage (%)	Posttest Score frequency (n)	Posttest Score percentage (%)
1	How do you discard plastics' waste at your home	12	30%	19	47.5%
2	Should we start using products made up of papers instead of plastics	26	65%	32	80%

Table no.3 stated that practice of participants has been improved after giving intervention about discarding and replacing of plastics.

Table No.4: Effectiveness of the informational booklet on practices regarding the harmful effect of plastics related to food

Sr. No	Practice Based Questionnaire	Pretest Score frequency (n)	Pretest Score percentage (%)	Posttest Score frequency (n)	Posttest Score percentage (%)
1	Do you use plastic containers to keep your food	17	42.5%	20	50%
2	Do you consume food in plastic plates and bowls	22	55%	24	60%
3	Do you drink tea or coffee in plastic cups	21	52.5%	15	37.5%
4	How often do you have tea or coffee in plastic cups	30	75%	34	85%
5	How often do you use plastic products	16	40%	26	65%
6	Do you use polythene bags to keep your vegetables and fruits fresh inside the refrigerator	15	37.5%	23	37.5%
7	Which type of buckets do you use at home	18	45%	25	62.5%

Table no. 4 depicts that practice of participants has been improved in most of the aspects after giving information about harmful effect of plastics related to food.

Table No.5: Effectiveness of the informational booklet on practices regarding the segregation of plastics

Sr. No	Practice Based Questionnaire	Pretest Score frequency (n)	Pretest Score Percentage (%)	Posttest Score frequency (n)	Posttest Score percentage (%)
1	Do you segregate plastics 'drywastes from wet wastes	16	40%	18	45%
2	Do you burn plastics	22	55%	26	65%
3	Where do you throw the chocolate plastic wrappers	28	70%	35	87.5%

Table no. 5 described about practice of participants has been improved after providing information about segregation of plastics

Discussion

People should be educated and get aware of harmful effect of plastics. Pre-experimental study was conducted on 40 participants, which was selected by simple random sampling. One group pre-test post-test design was used. The findings of the study is organized as per objectives of the study. Researcher found out that pre-test practice score of the participant was 45.65%. Information booklet was administered to the participants, post-test was conducted, results were recorded, and it was found that practice score increased to 55%. Hence, it is proved that information booklet on prevention of hazards of plastics among residents of Pune city. it was found that 95% peoples are using plastics in day-to-day practices starting from using plastic bags to plastic cups to drink hot beverages.

The similar study conducted in Gujrat in 2019, the post test knowledge score of high school students regarding hazards of plastic use was significantly higher at 0.05 level of significance of paired' test. calculated value (16.42) was higher than paired 't' test table value (1.74) at 0.05 level of significance.⁸

Conclusion

Findings of the study showed that information booklet on harmful effect of plastics in regards to practices of residents of Pune city found effective

Ethical Clearance- Ethical approval taken from ethics committee of the institute

Source of Funding- Self funded

Conflict of Interest – Nil

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