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# A Study to Assess the Effectiveness of Information Booklet on Knowledge Regarding the Health Hazards of Plastic Waste among Rural Population in Selected Community Areas at Rajkot

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**Abstract:** ***Background of the Study: Plastic changes the world weight less and strong. It is more useful one even we can"t live without touching a plastic object in a single day. The development of science contributes lot of advantages as well as disadvantages. But the harmful effect of plastic is un imaginable. Its waste will destroy the whole world very soon if we are not taking any control measure. Most of the time unawareness is the cause of throwing plastic in open places. The people don't know the seriousness. Especially rural people are not getting adequate education regarding such pollutant. Plastic directly cause illness to human being and animals. Its deposition in soil leads to decrease productivity of crops and cause natural calamities like flood, soil erosion etc. While eating plastic deposited in the stomach and intestine of birds and animals. It destroys marine life as well. Proving some information to the public regarding the harmful effect of plastic waste will help the environment by means of reduces, reuse, recycle method. Objectives: To assess the knowledge regarding the hazards of plastic waste among rural population. To evaluate the effectiveness of information booklet on knowledge regarding the hazards of plastic waste among rural population. To find out the association between pre-test score of knowledge with selected demographic variables. Hypothesis: H1. The mean post test score will be significantly higher than the mean pre-test knowledge score. H2. There will be significant association between pre- test score of knowledge with selected demographic variables. Methodology: one group pre-test post-test research design was used for this study, The samples of the study are Rural Population selected areas at Rajkot, The sample size of the study will be 40 living in rural areas of Rajkot, Non probability convenience sampling technique was used for the study. Final Result and Conclusion: During Pre-test 15(37.5%) were having moderate level of knowledge on health hazards of plastic waste and 25(62.5%) were having inadequate level of knowledge and no one have adequate knowledge. After providing information booklet 11(27.5%) got adequate knowledge,29(72.5%) got moderate level of knowledge and no one was under inadequate level of knowledge. the pre-test mean is 10.08 and post- test mean 15.90, the mean difference is 5.82 and the Standard deviation pre-test 3.73 and post-test 1.86, obtained "t" value is 10.072** with degree of freedom 39 (p=1.685) highly significant at 0.05 level of significance. The main conclusion from this present study is that respondents living in rural community were improper knowledge regarding the hazards of plastic waste. A continuous study packages and close monitoring, legislation and create good attitude are essential for controlling the hazards of plastic waste.***

**Keywords**: Assess, Effectiveness, Information booklet, Knowledge, Health hazards, Plastic waste, rural population

## 1. Introduction

The word plastic is derived from a Greek word „PLASTIKOS" which means easily modifiable. More than advantages plastic seem to be dangerous in life. The deposition of plastic waste materials affects very harmfully in soil, water and atmosphere. The time is overcome to awaken and control the hazards.

**Karbalaci S, Hanachi P, Walker TR, Cole** M conducted a study on the presence and accumulation of plastic and micro plastic debris in the natural environment in the year **2018.** Plastic debris is a prolific long-lived pollutant which is highly resistant to environmental or natural degradation and is linked to morbidity and mortality. The presence of micro plastics in the environment has added to the growth in synthetic plastic production and mismanagement of plastic waste. Microplastic has been identified in food consumed by human and air samples when inhaled could lead to adverse health effects. many countries have started establishing regulations or will soon be implemented to reduce micro plastic in aquatic environments. This review focuses on the occurrence, sources and transport of micro plastic in terrestrial and aquatic environments to highlight potential human health effects and applicable regulations to mitigate impacts of micro plastics[1].

**Christine Felt**, is a tech mom and ex nurse published an article, plastic waste: environmental effects of plastic pollution on **January 29,2019**. Whenever we can start to spoke about environmental health and plastic disposal it should be begin from new generation. Otherwise it is not beneficial to the society. All over the world produced 8.3 billion tons of plastic. In the year 2015, generated plastic refuse was around 6.3 billion. And this article says only 91% of plastic was recycled, incinerated plastics were 12% and 79% of plastic are remaining which is harmful to us. However the article conclude that the 79% plastic waste cause the ground water pollution, agricultural and land contamination, marine pollution and death of animal due to plastic debris. The solution to recover the problem is an intentional attempt to detect new species to or new enzyme in bacteria that is a plastic dissolving one. In the same time government should encourage the people practice green by supporting environmentally supporting behaviour[5]

**Objectives:**

1. To assess the knowledge regarding the hazards of plastic waste among rural population.

2. To evaluate the effectiveness of information booklet on knowledge regarding the hazards of plastic waste among rural population.
3. To find out the association between pre-test score of knowledge with selected demographic variables.

**Research Hypothesis**

H1. The mean post test score will be significantly higher than the mean pre-test knowledge score.
H2. There will be significant association between pre- test score of knowledge with selected demographic variables.

## 2. Methodology

Pre experimental group one group pre-test and post-test design was selected for this study in rural population in selected community areas at Rajkot, The study population will comprise of population were rural population living at Madhapar village and Ghanteswar village.. Total sample size 40 samples were selected who met the inclusion criteria were selected for this present study is selected by Non probability convenience sampling technique. The questionnaire consists of The tool consists of two sections Demographic variables include Age, Gender, and Education and questionnaires on Knowledge regarding the health hazards of plastic waste.

Those who had performed the steps correctly scored as one and those who did not perform scored as zero. .Interpretation of score was done as follow.

| Scores | Knowledge level |
|---|---|
| 0-11 | Inadequate |
| 12-17 | Moderate |
| 18-24 | Adequate |

## 3. Results

Frequency and percentage of pre and post-test Level of Knowledge N=40

| Knowledge | | Pre-test | | Post-test | |
|---|---|---|---|---|---|
| | | Frequency | Percentage | Frequency | Percentage |
| Levels | Adequate | 0 | 0 | 11 | 27.5 |
| | Moderate | 15 | 37.5 | 29 | 72.5 |
| | Inadequate | 25 | 62.5 | 0 | 0 |

**Table 4.2** reveals that during Pre-test 15(37.5%) were having moderate level of knowledge on health hazards of plastic waste and 25(62.5%) were having inadequate level of knowledge. After providing information booklet11 (27.5%) got adequate knowledge, 29(72.5%) got moderate level of knowledge and no one was under inadequate level of knowledge.

The major findings of the study include:

**a) Findings related to demographic characteristic of subjects**

- 57.5 % participants are between the age group of 26-35 and 42.5% were more than 35 years,
- Majority of 28 (70%) were females.
- Among 40 participants 23 members were secondary and higher secondary education, 12 members were graduate and above.
- 85% were using plastic bags used for purchasing things.
- 45% of people were disposing waste in bins and 30% were throwing out in open areas.
- 60% were got awareness from various education programs regarding the life hazards of plastic waste.

**b) Findings according to assessment of Knowledge**

During Pre-test 15(37.5%) were having moderate level of knowledge on health hazards of plastic waste and 25(62.5%) were having inadequate level of knowledge and no one have adequate knowledge.

**c) Findings according to effectiveness of Information Booklet**

After providing information booklet 11(27.5%) got adequate knowledge,29(72.5%) got moderate level of knowledge and no one was under inadequate level of knowledge. the pre-test mean is 10.08 and post- test mean 15.90, the mean difference is 5.82 and the Standard deviation pre-test 3.73 and post-test 1.86,obtained "t" value is 10.072** with degree of freedom 39 (p=1.685) highly significant at 0.05 level of significance. Hence information booklet is an effective source of imparting knowledge. Here the research hypothesis „$H_1$- the mean post test score will be significantly higher than the mean pre-test knowledge score" was accepted and null hypothesis rejected.

**d) Findings according to association between Demographic variables with pre- test**

The association between the pre-test score of Knowledge and selected demographic variables and testing the hypothesis „$H_2$-There will be significant association between pre- test score of knowledge with selected demographic variables" shows that there is no association between demographic variables and knowledge score. Hence the research hypothesis rejected and null hypothesis accepted.

## 4. Conclusion

The main conclusion from this present study is that respondents living in rural community were improper knowledge regarding the hazards of plastic waste. A continuous study packages and close monitoring, legislation and create good attitude are essential for controlling the hazards of plastic waste.

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