

Effectiveness of Structured Teaching Programme on Knowledge Regarding Hazards of Plastic Waste and its Safe Disposal

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Abstract: A healthy environment is fundamental to life, and attention to the effects of the environment on human health is essential if we are to achieve the goal of health for all. This study was done to assess the effectiveness of hazards of plastic waste and its safe disposal in Adults. 50 subjects were selected by using convenient sampling technique. The findings revealed that the mean pretest score was 5.4 and the posttest mean score was 16.4 and the knowledge improvement score was 10($t=13.8$ at $p<0.001$ level). The effectiveness of structured teaching programme was statistically tested by paired 't' test and the result was found to be statistically significant at $P< 0.001$ level.

Keywords: Knowledge and Hazards of plastic waste and its safe disposal

1. Introduction

Plastic is everywhere in today's lifestyle. It is used for packaging, protecting, serving, and even disposing of all kinds of consumer goods. With the 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, been virtually revolutionized by the applications of communication or InfoTech has plastics. Plastic in different form is found, which is toxic in nature. It is commonly collected both urban and rural areas. It creates stagnation of water and associated hygiene problems. Plastic waste hazard to the environment. Plastic waste can be reused productively in the construction of road.

More than a 100 million tones of plastic is produced worldwide each year. India is the fourth highest Asian importer of plastic waste behind Hongkong, Philippines, Indonesia. India has witnessed a substantial growth in the consumption of plastic and an increased production of plastic waste. A plastic bag takes an average of one thousand years to decompose completely. In the meanwhile, it breaks into small pieces which remain embedded in the soil. The recent Indian enactment - Plastic Waste (Management and Handling) Rules, 2011 - specifies that the minimum thickness of plastic bags should be of 40 microns as opposed to the previous 20 microns specified by the Plastics Manufacture, Sale and Usage Rules, 1999. This is primarily because the thickness of the bag determines the strength of the bag to break into smaller pieces. The thinner the bag is the higher is the probability of its breakdown and mixing with the soil which seriously deteriorates the soil and marine fauna.

From the available literature review, it is found there are limited studies related to hazards of plastic waste. Nurses are

one, who takes major role in educating the public about hazards of plastic waste and its disposal.

2. Statement of the Problem

A Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge regarding Hazards of Plastic Waste and its Safe Disposal among Adults

The Objectives of the Study Were:

- To assess the pre test knowledge score on Hazards of plastic waste and its safe disposal among Adults before administering of STP.
- To assess the post test knowledge score on Hazards of plastic waste and its safe disposal among Adults after administering of STP
- To compare the mean pre and post test f knowledge score on hazards of plastic waste and its safe disposal among Adults.
- To find the association between mean pre and post test knowledge score and the selected demographic variables such as age, sex, education, occupation and method of waste disposal.

Hypothesis:

H₁: The mean post test knowledge on Hazards of plastic waste and its safe disposal among Adults before administering of STP will be significantly higher than their mean pre test scores.

H₂: There will be significant association between mean pre and posttest knowledge score and selected demographic variables.

Conceptual Frame Work

The conceptual framework adopted for the study is LUDWING VON BERTALANFFY's General System Theory.

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Research Methodology

- **Research Approach:** Quantitative evaluative approach.
- **Research Design:** Pre Experimental Design- one group pre test and post test design.
- **Variables:** The independent variable is structured teaching programme on hazards of plastic waste and its safe disposal and dependent variable is knowledge.
- **Setting of the study:** The study was conducted in Kizhkatchirapattu rural village, Tiuvannamalai.
- **Sample:** Adults (20 to 50 yrs of age) residing in Kizhkatchirapattu
- **Sample size:** 50 Adults
- **Sampling technique:** Sample was selected by using convenience sampling technique.

Data Collection Methods

The formal permission for conducting study was obtained from competent authorities. A structured interview knowledge questionnaire on Hazards of plastic waste and its safe disposal was prepared and validated by experts. Reliability was established by using Split Half technique ($r = 0.89$). Pre test was conducted and Structured Teaching Programme was given by using Flash cards on the first day and post test was conducted on the eighth day with same questionnaire.

Data Analysis

Both descriptive and inferential statistics were used to analyze the data

3. Results and Discussion

In the present study a total of 50 subjects enrolled. The socio demographic variables revealed that majority 26(52%) of the adults were in the age group of 31-40 years. With regard to sex of the adults, 22(44%) were males and 28(56%) were females. Regarding occupation, majority 32(64%) of them former. With regard to educational status, majority 40(80%) of the subjects can able to read and write. All the subjects were using plastic bags and its material. Methods of disposing plastic waste reveals that majority 36(72%) of subjects disposing in open places.

The first objective was to assess the pre test knowledge score on Hazards of plastic waste and its safe disposal among Adults.

The findings showed that 34(68%) of respondents had inadequate knowledge, 12(24%) had moderately adequate knowledge and 4(8%) had adequate knowledge on Hazards of plastic waste and its safe disposal with the mean score was 5.4.

The second objective of the study was to assess the post test knowledge score on Hazards of plastic waste and its safe disposal among Adults

The findings showed that 25(50%) of subjects had adequate knowledge, 22(44%) of subjects had moderately adequate knowledge and 3(6%) had inadequate knowledge regarding hazards of plastic waste and its safe disposal. the mean score was 16.4

The third objective was to compare the mean pre and post test knowledge score on hazards of plastic waste and its safe disposal among Adults.

The finding reveals that the pre test mean knowledge scores was 5.4 with standard deviation of 1.3 whereas, in post test the mean knowledge score was 16.4 with standard deviation of 0.56. The calculated paired 't' test value was 13.8 at $[P < 0.001]$. Hence the formulated hypothesis is retained. There is a significant difference in pre and post test level of knowledge on hazards of plastic waste and its safe disposal among adults.

The fourth objective of the study was to find the association between mean pre and post test knowledge score and the selected demographic variables such as age, sex, education, occupation and method of waste disposal.

The findings shows that there was no significant association $[p > 0.05]$ between mean pre and post test knowledge score and the selected demographic variables such as age, sex, education, occupation and method of waste disposal.

4. Recommendations

The community health nurse should plan for regular mass teaching programme for adults regarding hazards of plastic waste and its safe disposal

- A similar study can be done in other rural community
- A similar study can be done on large sample to generalize the findings
- A long term study to find out the effects of neglected hazards of plastic waste and its safe disposal
- A study can be done on Utilization of Plastic Waste in Construction of Roads

5. Conclusion

The knowledge of Adults regarding hazards of plastic waste and its safe disposal was assessed by using structured interview knowledge questionnaire. The adults had adequate knowledge regarding hazards of plastic waste and its safe disposal; the study revealed that the structured teaching programme was effective to improve the knowledge on hazards of plastic waste and its safe disposal. Since the use of plastic causes environmental pollution, it is the responsibility of Nurses to promote awareness regarding hazards of plastics. Helping communities to reduce their exposures to health toxicants will increase the likelihood for a healthy society and clean environment for the coming generations.

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