

A Study to Assess the Effectiveness of Structured Awareness Programme on Knowledge regarding Environmental Hazards of Plastic among the Adults in Selected Areas in Chitradurga

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Abstract: Background: In modern era, even though plastics are an inevitable substance, it is one of the major toxic pollutants of our time. Being a non - biodegradable substance, composed of toxic chemicals, plastic pollutes earth, air and water. There is no way to safely dispose of plastic waste. Plastic causes serious damage to environment both during its production and disposal. So, the only way to reduce the hazards of plastic is to reduce the use of plastic and there by force a reduction in its production. Hence this study was intended to assess the effectiveness of structured awareness programme on knowledge regarding environmental hazards of plastic among adults in Urban PHC, Chitradurga. Objectives of the Study: 1) To assess the existing level of knowledge regarding hazards of plastic use among adults. 2) To evaluate the effectiveness of structured awareness programme on hazards of plastic use among adults. 3) To determine the association between pre - test knowledge scores with their selected demographic variables. Hypothesis: H₁: There will be significant difference between mean pre test and post test knowledge scores of adults regarding environmental hazards of plastic. H₂: There will be significant association between the pre test knowledge of adults regarding environmental hazards of plastic and selected demographic variables. Methods: In the present study, evaluative research approach was selected; Pre experimental one group pretest post test design was adopted. The structured questionnaire was developed to collect the data. The main study was conducted at Urban PHC, Chitradurga, Karnataka among 60 adults; Selected by using Non probability convenient sampling technique, descriptive and inferential statistics was used to analyze the data. Results: The overall pretest mean knowledge score obtained by the adults was 14.82 (49.25%) with standard deviation 3.501 and the overall post test mean knowledge score obtained by the adults was 20.65 (68.83%) with standard deviation 2.893. The total difference in the mean of overall knowledge score was 5.83 with the 't' value of 9.544 and found to be significant at the level of $p < 0.01$. It means there is significant difference between the pre test and post test knowledge level of adults regarding the environmental hazards of plastic. Results also shows that there was a statistically significant association between the post test knowledge score of the adults with demographic variables such as age, education, religion and occupation at the probability level of $p < 0.05$. Conclusion: The present study attempted to assess the effectiveness of structured awareness programme on knowledge of adults regarding environmental hazards of plastic in a Urban PHC, Chitradurga, and concluded that there was a significant difference between the knowledge level of adults and structured awareness programme program was effective in improving the knowledge of adults.

Keywords: Environmental hazards of plastic; knowledge; adults

1. Introduction

Do something drastic – cut the plastic! (Jennifer Nini)

The word “plastic” comes from the Greek word “plastikos” meaning “to form”. Plastic is used in place of other materials, such as glass, wood, and metals, in construction and decoration, for making many articles, as coatings, and drawn into filaments, for weaving. The term “plastics” includes materials composed of various elements such as carbon, hydrogen, oxygen, nitrogen, 2 chlorine, and sulphur¹.

A plastic material is any of a wide range of synthetic or semi - synthetic organic solids used in the manufacture of industrial products. Plastics are typically polymers of high molecular mass, and may contain other substances to improve performance and reduce costs. Monomers of plastic are either natural or synthetic organic compounds².

People are exposed to these chemicals not only during manufacturing, but also by using plastic packages, because some chemicals migrate from the plastic packaging to the foods they contain. Examples of plastics contaminating food have been reported with most plastic types, including Styrene from polystyrene, plasticizers from PVC, antioxidants from polyethylene, and Acetaldehyde from PET

Combating the menace of plastic waste pollution has become a global environmental challenge. Plastic pollution is capable of affecting land, waterways and oceans as a large percentage of marine and land creatures have died due to the fact that plastic is non - biodegradable and it causes hazards to soil⁶.

Plastics in the waste stream are dealt with in one of three ways: incineration, burial, or recycling. Incineration, used to dispose about 16% of all municipal wastes in developed countries burn garbage in waste - to - energy facilities that use heat energy to generate steam or electricity. Because plastics are typically derived from petroleum or natural gas, they can generate almost as much energy as fuel oil, although the much higher amount of energy initially required to produce the plastic is lost. Potential hazardous emissions from incinerating plastics include hydrogen chloride, dioxin, cadmium, and fine particulate matter. Even with stricter air pollution standards in place, there is considerable public opposition to incineration

Assumptions

This study assumes that

- 1) Adults may not have adequate knowledge regarding environmental hazards of plastic

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- 2) Structured awareness programme may increase the knowledge of adults regarding environmental hazards of plastic.

2. Research Methodology

- **Research Approach:** quantitative evaluative approach
- **Research Design:** pre - experimental with single group pre test and post test research design

Variables under the study:

- **Independent variable:** Structured awareness programme regarding environmental hazards of plastic.
- **Dependent variables:** Knowledge of adults regarding environmental hazards of plastic.
- **Population:** The target population for the present study comprised all the adults and residing in Urban PHC, Chitradurga.
- **Sample Size:** 60 adults.
- **Sample:** either male or female Adults, residing in Urban PHC in Chitradurga.
- **Sampling Technique:** In this study, Non probability convenient sampling technique was adopted

Criteria for Selection Samples

Inclusion Criteria

- The study includes the adults,
- Who are residing at Urban PHC
- Who are willing to participate.
- Who are available at the time of data collection

Exclusion Criteria

- The study excludes the adults,
 - Who are not willing to participate in the study.
- Who don't know to read and write Kannada.

Part - I: Demographic Data

This section consisted of items seeking personal information such as Age, Gender, religion, education status, occupation, type of family, family income and source of information.

Part - II: Knowledge questionnaires

The knowledge questionnaires consisted of 30 items on 3 knowledge aspects such as General concept of plastic, Hazards of plastic and Prevention of plastic use.

Each question had 4 responses with which one correct response and 3 distracters. Score '1' was given for correct response in a single question and score '0' was given for wrong response. The total numbers of items were 30 giving rise to maximum score of 30.

The resulting score were ranged as follows

- Adequate knowledge: more than 75 % (23 - 30 marks)
- Moderately adequate: 50 – 75 % (16 - 22 marks)
- Inadequate adequate: less than 50 % (less than 15 marks)

3. Results

Table 1: Frequency Distribution of adults according to age, N = 60

Age	Frequency	Percentage
a. 20 - 30 years	13	21.7
b. 31 - 40 years	15	25.0
c. 41 - 50 years	17	28.3
d. 51 - 60 years	15	25.0
Total	60	100

The table 1 depicts that 28.3% of subjects were in the age group of 41 - 50 years, 25% of subjects were in the age group of 31 - 40 years, 25% of the subjects were aged between 51 - 60 years and remaining 21.7% of them were aged 20 - 30 years.

Table 2: Frequency distribution of adults by Gender, N = 60

Gender	Frequency	Percentage
a. Male	32	53.3
b. Female	28	46.7
Total	60	100

The table 2 depicts that among participants majority 53.3% were males and remaining 46.7% of them were females.

Table 3: Frequency distribution of adults according to religion, N = 60

Religion	Frequency	Percentage
a. Hindu	12	20.0
b. Christian	9	15.0
c. Muslim	39	65.0
Total	60	100

The table 3 shows that majority 65% of the subjects belongs to Muslim religion, 20% of them were Hindus and remaining 15% were belong to Christian religion.

Table 4: Frequency distribution of adults according to Educational status, N = 60

Educational status	Frequency	Percentage
a. No formal education	7	11.7
b. Primary education	21	35.0
c. Secondary education	10	16.7
d. PUC	16	26.7
e. Graduates	6	10.0
Total	60	100

The table 4 reveals that the 35% of subjects had Primary education, 26.7% of the subjects had completed PUC, 16.7% of them had Secondary education, 10% of them completed degree and remaining 11.7% of them were no formal education.

Section II: Knowledge Level of Adults Regarding the Environmental Hazards of Plastic

Table 9: Overall pretest and post test knowledge scores of the adults, N = 60

Knowledge level	Pre test		Post test	
	Frequency	%	Frequency	%
a. Inadequate knowledge	37	61.7	0	0.00
b. Moderate knowledge	23	38.3	43	71.7
c. Adequate knowledge	0	0.00	17	28.3
Total	60	100	60	100

Table 9 depicts that majority 61.7% of the adults had inadequate knowledge and 38.3% had moderate knowledge in the pretest. After administration of structured awareness

programme 28.3% of the subjects had adequate knowledge, 71.7% had moderate knowledge regarding environmental hazards of plastic in the post test

4. Implications of the Study

The findings of the study can be used in the following areas of nursing profession.

1) Nursing Practice

Nurses are the key persons of the health team, who play a major role in health promotion and maintenance. The nursing personnel need to prepare and provide structured awareness programme which should be simple, clear and understandable that can be studied at home with other internet. Health teaching is an integral part of health and family welfare services.

2) Nursing Education.

As a nurse educator, there are abundant opportunities for nursing professionals to educate the adults as well as their internet regarding environmental hazards of plastic. The study emphasizes significance of short term in - service education programmes for nurses related to structured awareness programme regarding environmental hazards of plastic. Nursing personnel working in hospital and community should be given in - service education.

3) Nursing Administration

Nursing administrators should take interest in motivating the nursing personnel's especially community health nurses to improve their professional knowledge and skill by attending the health conferences, workshops, seminars and training program on environmental hazards of plastic. The nursing administrator should arrange regular in - service education program on environmental hazards of plastic.

4) Nursing Research

Research provides nurses credibility to influence decision making, policy and protocol formulation regarding environmental hazards of plastic among adults. Findings of the present study suggest that educators and administrator should encourage nurses to read, discuss and conduct research studies so as to enable the nurse to make data base decision rather than intuitive decisions.

5. Conclusion

This chapter presents the conclusions drawn, implications, limitations, suggestions and recommendations.

The focus of this study was to evaluate the effectiveness of structured awareness programme on knowledge of adults regarding environmental hazards of plastic at the Urban PHC, Chitradurga, Karnataka. A pre - experimental design and evaluative approach was used in the study. The data was collected from 60 samples through Non probability convenient sampling technique.

The data collected was subjected to analysis using descriptive statistics in terms of frequencies, percentage and inferential statistics like 't' test and chi square test to find the association.

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