

A Study to Assess the Effectiveness of Structured Teaching Programme on Hazards of Plastic Use Among High School Students in Selected Schools of Sasaram, Bihar

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Abstract—Plastic is widely used in daily life due to its convenience and durability, but its improper use and disposal have caused serious environmental and health problems. Awareness among adolescents regarding plastic hazards is crucial for sustainable living. **Objectives:** To assess existing knowledge of high school students about hazards of plastic use. To evaluate the effectiveness of a structured teaching programme (STP). To compare pre-test and post-test knowledge scores. To find associations between demographic variables and knowledge levels **Methods:** A quantitative, pre-experimental (one-group pre-test post-test) design was used. The study was conducted at Shri Shankar High School, Sasaram, Bihar, among 60 students selected through purposive sampling. A structured questionnaire with 25 items assessed knowledge before and after the teaching session. Data were analyzed using descriptive and inferential statistics (paired *t*-test). **Results:** In the pre-test, 33.3% of students had poor, 50% had average, and 16.7% had good knowledge. Post-intervention, 66.7% showed good knowledge, 30% average, and only 3.3% poor. The mean pre-test score (7.2 ± 2.1) increased to (11.8 ± 1.5) in post-test, showing a significant difference ($p < 0.05$). Class level and source of information were significantly associated with pre-test knowledge. **Conclusion:** The structured teaching programme was effective in improving students' knowledge regarding hazards of plastic use. Educational interventions at the school level can help develop eco-friendly attitudes and reduce plastic dependency.

Index Terms—Plastic hazards, Structured teaching programme, Awareness, High school students, Environmental health.

I. INTRODUCTION

Plastic pollution has become one of the most pressing global environmental issues. The non-biodegradable nature of plastic leads to soil, air, and water contamination, endangering humans, animals, and ecosystems. In India, poor waste management and lack of awareness aggravate the problem. Adolescents are the most receptive group for behavior change, making schools ideal platforms for awareness initiatives. The present study aimed to assess the effectiveness of a structured teaching programme in improving knowledge regarding plastic hazards among high school students of Sasaram, Bihar.

II. METHODOLOGY

Research Approach: Quantitative
Design: One-group pre-test post-test design
Setting: Shri Shankar High School, Sasaram, Bihar
Sample Size: 60 students
Sampling Technique: Non-probability purposive sampling

Tool: Structured questionnaire on hazards of plastic use (validated by experts)

Data Collection: Pre-test conducted → teaching programme administered → post-test after 7 days

Data Analysis: Descriptive (mean, SD, %), Inferential (*t*-test, χ^2 test).

Ethical Considerations: Informed consent obtained; confidentiality maintained.

IV. RESULTS

Test	Mean ± SD	t-value	p-value	Interpretation
Pre-test	7.2 ± 2.1			
Post-test	11.8 ± 1.5	<i>t</i> = 8.36	<i>p</i> < 0.05	Significant

Knowledge Level Distribution

Category	Pre-test (%)	Post-test (%)
Poor	33.3	3.3
Average	50.0	30.0
Good	16.7	66.7

There was a marked improvement in knowledge after the intervention. Class and source of information were significantly associated with baseline knowledge.

V. DISCUSSION

The findings indicate that structured and interactive educational interventions can effectively improve environmental awareness. Similar studies by Sharma et al. (2020) and Sultana (2020) also showed increased knowledge following planned teaching programmes. The results highlight the importance of incorporating environmental education into school curricula to foster responsible behavior among youth.

VI. CONCLUSION

The structured teaching programme significantly enhanced students' knowledge of plastic hazards. Integrating such programmes into school health education can promote eco-friendly attitudes and contribute to environmental sustainability.

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