

Effectiveness of Self-Instructional Module on Knowledge and Attitude Regarding E-Waste Management among Workers of selected Electronic Repair Shops at Vijayapur

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Abstract

➤ Background

If we look around, we could easily pick out loads of equipment's and devices that could qualify as potentially hazardous and non-biodegradable electronic waste. The television, the cellular phone, the refrigerator, the computer and printer sitting on our desk, are eventually going to end up in a landfill where they will leach out dangerous carcinogens and chemicals, poisoning the soil and dirtying underground water aquifers.

➤ Aim of the study

To find out the self-instruction module effectiveness on knowledge and attitude regarding e-waste management among workers.

➤ Methods

A pre experimental one group pre-test post-test research design was used, structured knowledge and attitude questionnaire are used to collect the data regarding e-waste management among workers, and Descriptive and Inferential statistics are used to analyse the data.

➤ Results

In pretest 16% of the workers of electronic repair shop had good knowledge regarding e-waste management and 60% good knowledge regarding e-waste management in post-test. This shows that there was an average gain in knowledge of 34%. 28% of the workers of electronic repair shop had favorable attitude regarding e-waste management in pre-test and 64% had favorable attitude

regarding e-waste management in post-test. This shows that there was an average change in attitude of 36%.

➤ Conclusion

The findings of the study support the effectiveness of self-instructional module in increasing the knowledge and attitude regarding e-waste management among electronic repair shop workers.

Keywords:- E-Waste, Effect of E-Waste, Prevention Measures of E-Waste Hazardous, Management of E-Waste, Electronic Repair Shop, Self-Instructional Module.

I. INTRODUCTION

Our world has changed incredibly in the last 30 years. More than anything, this change has been an electronically driven one. Back then, a few far-seeing people were saying that they would change society. Even those who were declaring how great an invention the electronic device was could not see where it would take us².

In recent years, various kinds of consumer electronics have become increasingly popular in all the countries. It is not surprising that these sales of electronic devices are among the highest in the world and the habits of using electronic devices are changing rapidly. Electronic device has become an indispensable communication tool in our everyday life³.

According to the United Nations Environmental Programme (UNEP), global e-waste generation is growing by about 40 million tonnes a year. A report titled "Recycling from e-waste to resources" released in February 2010 by the UNEP and predicts that by 2020 in South Africa and China e-waste from old computers will have jumped by 200 to 400% from 2007 levels and by 500% in India. The specter of hazardous e-waste mountains looms large especially for

developing countries with serious consequences for the environment and public health.¹

The burden of e-waste in Karnataka has been getting rid of e-waste will not be easy, however, as it constitute 700 tonnes of the over 5,000 tonnes of waste that Bengaluru throws up every day. Most of it made up of plastic sheets. Should a ban on plastic bags actually work on city will have 400 tonnes less rubbish to dispose of every day. Says a senior officer of the Karnataka State Pollution Control Board, pointing out that plastic, being non-biodegradable, takes over 500 years to decompose and so pollutes the soil, air and water when dumped in landfills.³

A study conducted by the Department of Science and Technology, Government of India, had revealed that 60% of the plastic waste collected and segregated gets recycled, while 40% is left unutilized. This imposes a large threat to human and aqua life.⁴

➤ *Statement of problem*

“Effectiveness of self-instructional module on knowledge and attitude regarding e-waste management among workers of selected electronic repair shops at vijayapur.”

II. OBJECTIVES

- To assess the pre-test knowledge regarding e-waste management among workers of selected electronic repair shops.
- To assess the attitude regarding e-waste management among workers of selected electronic repair shops.
- To evaluate the effectiveness of self-instructional module on e-waste management among workers of selected electronic repair shop.
- To find the association between the pre-test knowledge and attitude and score with selected demographic variables.

➤ *Hypothesis*

Following hypothesis will be tested at 0.05 level of significance.

- **H₁**:- There will be significant difference between pretest and posttest knowledge And attitude regarding e-waste management among workers of selected electronic repair shops.
- **H₂**:- There will be significant association between pretest knowledge and attitude scores with selected demographical variables.

III. MATERIALS AND METHODS

- *Source of Data*:- This study the data will be collected from electronic repair shops in bijapur.
- *Research design*:- Pre experimental one group pre-test-post test design was adopted for the study.
- *Setting of the study*:- The present study was conducted on workers of selected electronic repair shops at vijayapur, Which most of the welding shop`s are situated in industrial area at vijayapur.
- *Population*:- The population for this present study was workers of selected electronic repair shops at vijayapur.
- *Sample*:- In this study, workers of selected electronic repair shops, who fulfill the sampling criteria was selected as sample.
- *Sampling method*:- In this study simple random sampling technique was used.
- *Sample size*:- The sample size for the present study was 50.

➤ *Sampling Criteria*

Samples were selected with the following predetermined set of criteria.

• *Inclusion Criteria*

Subjects

- ✓ Both male and female workers of selected electronic repair shops are included in the study.
- ✓ Workers of selected electronic repair shop who can read and write Kannada/English.
- ✓ Workers of selected electronic repair shop who are present during the time of study.
- ✓ Workers of selected electronic repair shop who are willing to participate.

• *Exclusion Criteria*

Subjects

- ✓ The Workers of selected electronic repair shop who are not willing to participate.
- ✓ Workers of selected electronic repair shop who are not present during the time of study.
- ✓ Workers who are having age less than 15 year.

➤ *Method of Data Collection*

Data collection is the gathering of information needed address a research problem.

- Prior formal information was obtained from the workers of selected electronic repair shops vijayapur.
- Information consent was obtained from the subjects after explaining the purpose of the study.
- Structured knowledge questionnaire and attitude scale about e-waste management was used to assess the knowledge and attitude of the electronic repair shop workers at selected e-electronic shops vijayapur.

- Demographic data was used to collect information of e-waste management among workers of selected electronic repair shops.

- Self-instructional module was prepared to enhance the knowledge and attitude one-waste management.

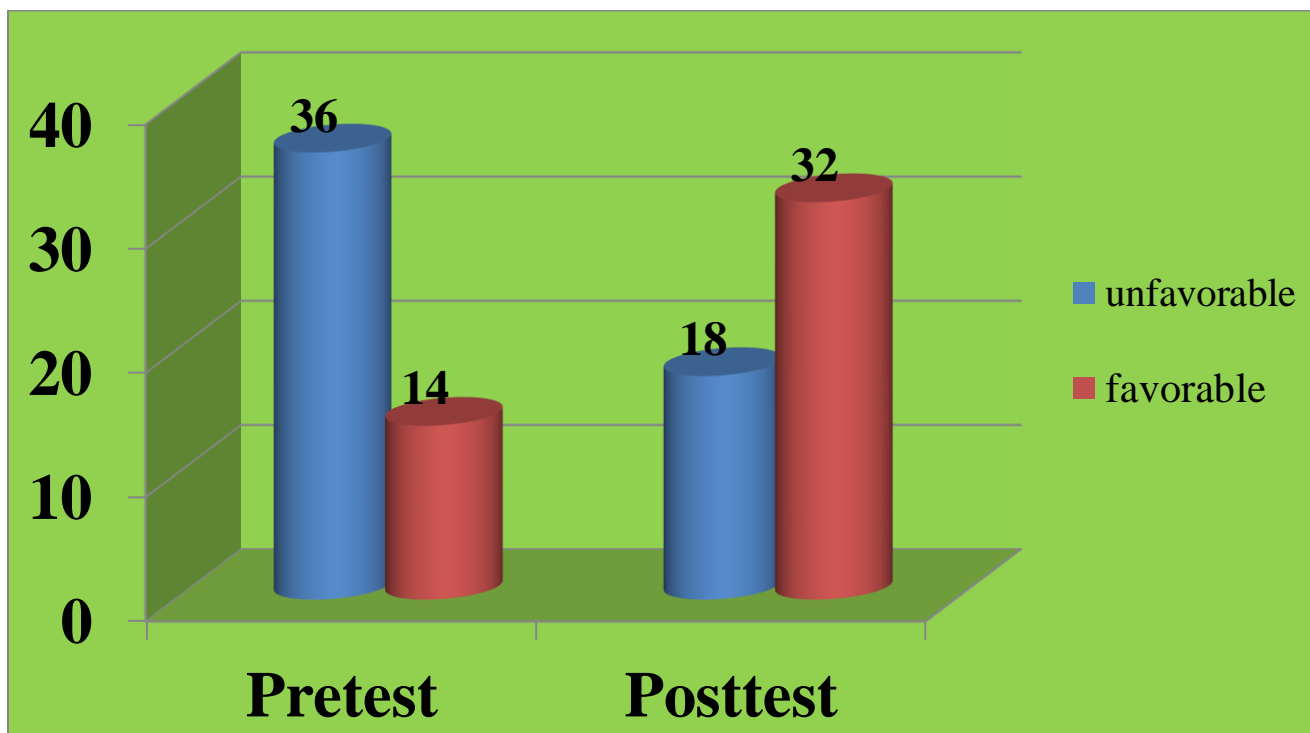
➤ Section 1 Assessment of Knowledge of Respondents

		Knowledge Score				Total
		Pre test	Percentage	Post test	Percentage	
Level of knowledge	Poor	17	34.0	03	6.0	20
	Average	32	64.0	37	74.0	69
	Good	01	2.0	10	20.0	11
	Total	50	100	50	100	100

Table 1 :- Knowledge Assessment of electronic repair shop workers.

The above table reveals that knowledge pre test score 64% had average, 34% had poor, 2% had Good and post test score 74% had average, 20% had good, 20% had not adequate

➤ Section 2 Assessment of Attitude of Respondents



Graph 1:- Distribution of electronic repair shop workers According to attitude.

The above graph reveals that attitude pre test score 48% had moderate, 32% had favourable, 20% had unfavourable and post test score 30% had moderate and 70% had favourable.

Demographical Variables	Category	Attitude		X ²	T value	DF	Remarks
		≤ Median	>Median				
Age in year	15-19	8	6	0.008	5.99	2	NS
	20-24	10	7				
	25-29	8	6				
	30 Above	3	2				
Gender	Male	25	15	0.52	3.84	1	NS
	Female	5	5				
Religion	Hindu	18	12	0.07	3.84	1	NS
	Muslim	10	8				
	Christian	1	1				
	Any other	0	0				
Education qualification	ITI	17	13	0.21	5.99	2	NS
	Engineering	5	5				
	BBA,BCA	0	0				
	MBA,MCA	0	0				
	Any other	5	5				
Designation	Senior electronic repair shop worker	13	9	0.01	3.84	1	NS
	Junior electronic repair shop worker	16	12				
Experience	Less than 1 year	9	7	0.24	5.99	2	NS
	1 to 5 years	13	8				
	6 to 10 year	5	4				
	More than 10 years	2	2				
Training attended	Yes	11	9	0.21	3.84	1	NS
	No	17	13				
Type of training program	Orientation programme	5	5	0.01	3.84	1	NS
	workshop	3	2				
	conference	3	2				
	Education programme	0	0				

Table 2:- Associated between Pretest and post test attitude of electronic repair shop workers with selected demographic variables (NS = not significant S=significant)

Table reveals that there were no associations between pre tests and post tests knowledge scores with any of the selected demographic variables such as age, gender religion, education status, total experience and type of programme attended at 0.05% level of significance.

➤ *Section 3 Effectiveness of Self Instructional Module*

t-test	N	Mean	S.D	S.E	p-value
Pre test	50	15.9200	4.8354	0.6838	0.0001
Post test	50	21.5600	3.8181	0.5399	

Table 3:- Comparison of level of knowledge before and after self instructional module.

The above table reveals that Mean post test score of electronic repair shop workers is more than the Mean pre test score which is highly significant as p-value = 0.0001. So the self instructional module is effective in enhancing the knowledge of electronic repair shop workers.

➤ *Instructional Module*

t-test	N	Mean	S.D	S.E	p-value
Pre test	50	15.9200	4.8354	0.6838	0.0001
Post test	50	21.5600	3.8181	0.5399	

Table 4:- Comparison of level of attitude before and after self

The above table reveals that Mean post test score of electronic repair shop workers is more than the Mean pre test score which is highly significant as p-value = 0.0001. So the self instructional module is effective in enhancing the attitude of electronic repair shop workers.

- A study can be conducted to identify the problems faced while practicing e-waste management.
- A similar study can be conducted by using incense and observation checklist by using interview and observation checklist as instruments for data collection.

IV. DISCUSSION

➤ *Major findings of the study*

The pre test mean knowledge score of the electronic repair shop workers regarding e-waste management was found to be 13.1 whereas the mean post-test knowledge score was 21.1. The pre test mean attitude score of the electronic repair shop workers regarding e-waste management was found to be 5.14 whereas the mean post-test attitude score was 8.52 indicating that the self instructional module was effective. The findings using modified gain suggested that the post-test scores in all areas were higher than the pre-test scores.

V. RECOMMENDATIONS

Based on the study findings, the following recommendations were made for further study.

- Similar study can be replicated on a larger sample
- Similar study can be replicated on a general population and public.
- Similar kind of studies can be undertaken in different settings with different target populations such as parents, technical students etc.

VI. CONCLUSION

Majority of welders had moderate adequate knowledge towards prevention of lung cancer. There is time alarm to educate the welders through video assisted mass health education programme, seminar, workshop on preventive aspect and healthy lifestyle. This may help to reduce the morbidity and mortality rate of lung cancer among welders.

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