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## A STUDY TO ASSESS THE EFFECTIVENESS OF VIDEO ASSISTED TEACHING ON KNOWLEDGE AND ATTITUDE REGARDING HAZARDS OF USE OF PLASTIC PRODUCTS AMONG THE SCHOOL CHILDREN AT SELECTED URBAN SCHOOLS, AT MYSURU DISTRICT

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## ABSTRACT

The main aim of this study was to assess the effectiveness of video assisted teaching on knowledge and attitude regarding hazards in use of plastic products among the school children at selected urban schools, at Mysuru district.

#### **Objectives**

- 1. To assess the knowledge and attitude regarding hazards of use of plastic products among the urban school children.
- 2. To evaluate the effectiveness of video assisted teaching regarding the hazards of use of plastic products among the urban school children.
- **3.** To determine the association between the pretest level of knowledge and attitude regarding the hazards in use of plastic products among the urban school children and their selected demographic variables

**Results:** The statistical analysis revealed that the knowledge and attitude of the experimental group was calculated by the paired 't' test for knowledge ('t'= 24.11) and for attitude ('t'=16.00). Where as in control group the knowledge level was ('t'=1.83) and for attitude ('t'=1.12). This proves that there is a significant difference in pre test and post test level of knowledge and attitude of the experimental group at 0.05 level. Where as in correlation between the post test scores of knowledge and attitude of the experimental and control group states the 'r' value (r=0.8) it revealed that there is a positive and highly significant correlation between the knowledge and attitude regarding hazards of use of plastic products in control group the 'r' value (r=0.3) it reveals that there is a positive and moderate significant correlation between the knowledge and attitude regarding hazards of use of plastic products. It indicated that the given CAI was effective.

**KEYWORDS:** The statistical analysis revealed that the knowledge and attitude of the experimental group was calculated by the paired 't' test for knowledge ('t'=24.11) and for attitude ('t'=16.00).

## INTRODUCTION

The early twentieth century saw an invention that has gone to effect the ecology of our earth more than its inventors probably imagined. The invention of plastic, which undoubtedly gave man an easier life but also left him with a burden to carry that of protecting his environment from the myriad damages caused by this material, is virtually unthinkable today.<sup>[1]</sup>

Plastic is all around us, it forms much of the

packaging for the food and drink. For many of us it is throughout our home, our work place, our cars and the buses. It can be in our clothes, eyeglasses, computers, dishes, utensils and toys.<sup>[2]</sup>

#### Need for the study

The increase in consumption of plastic products and its negative impacts on health put urgency to this problem. Since in 1800s, the industrial revolution has been raised and it leads to increase the plastic pollution. According to World Health Organization (WHO 2022) plastic accounts for 10% of all of the waste we generate. Every year, close to five hundred billion plastic bags are used around the world. Above eight million tons of plastic wind up in the oceans every year, the equivalent of a full garbage truck every minute. To offer favored surroundings many moves must be taken with the aid of using fitness experts which include interactive and powerful lectures in the educational systems and encouraging its stability throughout the life is important. Egypt provided six million metric heaps of plastic every year, making it the most important plastic polluter within side the Arab world. World Wildlife Fund (WWF) reported in 2019 that Egypt also contributes the most plastic pollution among Mediterranean countries, at 250,000 tons each year.<sup>[3]</sup>

Child health nurse taking an active role in the planning, implementation, and evaluation of comprehensive educational programs depended on a theoretical framework to improving the health of society, motivating them, also, discovering unhealthy habits and modifying them through nursing care plans. So, this research aimed to determine the effect of a health education program about plastic use hazards on knowledge, and attitude among school children's.

A study conducted states that plastics proves their injurious nature towards human health in many direct or indirect ways. Phthalates mainly used as plasticizers in Poly Vinyl Chloride (PVC). including extensive use in toys and other children's products. Phthalates with a variety of adverse outcomes, including increased adiposity and insulin resistance, decreased anogenital distance in male infants, decreased the sex hormone level and other consequences for the human reproductive system, both for females and males, Infants and children may be especially vulnerable to the toxic effects of phthalates given their increased dosage per unit body surface area, immature metabolic system capability and developing endocrine and reproductive system.<sup>[4]</sup>

A study conducted stated that plastic pollution by plastic debris in the Laurentian Great Lakes, it affects the open water shoreline, typically more than 80% of anthropogenic litter along the shoreline of the Great Lakes is comprised of plastics. Sources of plastic debris where from the products used by the consumer, pellets from the plastic manufacturing industries.<sup>[5]</sup>

A Study on marine debris have gained worldwide attention since many types of debris have found their way into the food chain of higher organisms. This study was conducted to quantify plastic debris buried in sand at selected beaches in Malaysia. A total of 2542 pieces (265.30 J P-2) of small plastic debris were collected from all six beaches. This demonstrates that commitments and actions, such as practices of the 'reduce, reuse, recycle' (3R) approach, supporting public awareness programmes and beach clean-up activities, are essential in order to

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reduce and prevent plastic debris pollution.<sup>[6]</sup>

## **OBJECTIVES**

- 1. To assess the knowledge and attitude regarding hazards of use of plastic products among the urban school children.
- 2. To evaluate the effectiveness of video assisted teaching regarding the hazards of use of plastic products among the urban school children.
- 3. To determine the association between the pretest level of knowledge and attitude regarding the hazards in use of plastic products among the urban school children and their selected demographic variables.

## HYPOTHESES

 $H_{i}$ - there will be significant difference in pretest and posttest level of knowledge and attitude score regarding the hazards in use of plastic products among the urban school children.

 $H_2$  -there will be significant association between pretest level score regarding the hazards in use of plastic products with their selected demographic variables.

## ASSUMPTIONS

- The use of plastic items may cause ill effects to environment and human health.
- The urban school children may not aware of hazards of plastic products usage.
- The video assisted teaching will help to improve the knowledge and positive attituderegarding hazards of use of plastic products among the urban school children.

#### **OPERATIONAL DEFINITION**

In this study, evaluate is to determine the outcome of video assisted teaching to improve the knowledge and attitude among urban school children.

#### EFFECTIVENESS

In this study, it refers to the extent to which the video teaching influences in improving the knowledge and attitude regarding hazards of use of plastic products among the urban school children.

#### VIDEO TEACHING

In this study, it refers to the Video assisted planned teaching strategies regarding the hazards of use of plastic products with the help of computer to educate the urban school children.

#### KNOWLEDGE

In this study, it refers to the information acquired by the urban school children about the hazards of plastic products use which was measured by using semi structured self- administered questionnaire.

## ATTITUDE

In this study, it refers to the perception & belief towards the hazards of use of plastic products among the urban school children which was measured using Likert scale.

#### SCHOOL CHILDREN

In this study, it refers to the children who were studying in eighth, ninth and tenth standard in the schools.

## **URBAN SCHOOL**

In this study, it refers to the schools located in a geographic area inside the selected District Mysuru.

#### HAZARDS OF USE OF PLASTIC PRODUCTS

In this study, it refers It refers to the ill effects caused by the usage of plastic items which affect the environment and health of the human beings especially children and resulting in many problems such as water pollution, soil pollution, acute respiratory disease, poor immune response, precocious puberty, infertility, obesity.

### **DELIMITATION OF THE STUDY**

- The study is delimited to a selected urban school at Mysuru.
- The data collection period was delimited to a period of 6 weeks.
- The study is limited to 60 samples

#### **CONCEPTUAL FRAME WORK**

General System Theory serve as a Model for viewing people as interacting with the environment.

The Theory was developed by **LUDWIG VON BERTALANFFY** during 1968s.

## METHODOLOGY

#### **Research** approach

Research approach indicates the basic procedure for conducting research. The choice of the appropriate approach depends on the purpose of the study. Research approach selected for this study is the evaluatory approach.

#### **Research Design**

Quasi experimental design - Non equivalent pre testpost test control group design was used in this study.

#### VARIABLES

**Independent variable:** Video Assisted Instruction regarding hazards of use of plastic products.

**Dependent variables:** Knowledge & attitude regarding hazards of use of plastic products.

**Demographic variables:** Age, Gender, Education of the father, Education of the mother, Monthly income of the family, Area of residence, Previous source of information.

### SETTING OF THE STUDY

The settings selected for the study is selected urban schools at Mysuru.

#### Population

School Children in selected urban school Mysuru and who full fills the inclusion criteria of sample selection.

#### SAMPLE AND SAMPLING TECHNIQUES

The sample of this study was the school children studying in eighth, ninth and tenth standard at urban school at Mysore district.

#### SAMPLE SIZE

The sample size comprised of 120 eighth, ninth and tenth standard school children who were studding in the selected urban schools, Mysore District.

Experimental group: 60 students Control group: 60 students.

## CRETERIA FOR THE SAMPLE COLLECTION INCLUSION CRITERIA

- The school children who were aged between 13 & 15 years.
- The school children who were studying in the urban schools.
- The urban school children who could understand, read and write English.
- The urban school children who were available at that time of data collection.

## **EXCLUSION CRITERIA**

- The school children who were not willing to participate in this study
- The school children who were sick at the time of study.

# SELECTION AND DEVELOPMENT OF THE TOOL

"The instrument is a vehicle that could best obtain data pertinent to the study and at the same time adds to the body of general knowledge in the discipline".

#### SELECTION OF THE TOOL

The investigator developed a structured questionnaire on knowledge and attitude scale to assess the effectiveness of video assisted teaching program regarding hazards in use of plastic products.

#### **Development of the tool**

The tool developed for the study consists of a closed ended questionnaire on to assess the effectiveness of video assisted teaching program regarding hazards in use of plastic products.

The tool was developed from the researcher's experience. The following steps were carried out for preparing tool.

#### **Literature Review**

Books, journals, articles published and electronic media were reviewed and used to develop the tool.

#### Preparation of the blue print

A blue print was prepared prior to the construction of structured knowledge questionnaire on video assisted teaching program regarding hazards in use of plastic products. Which included three areas and indicated the

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distribution of the items according to the various aspects regarding hazards in use of plastic products.

#### Content validity of the tool

"Validity refers to the degree to which an instrument measures what it is supposed to be measure".

The prepared instruments along with the objectives, operational definition, scoring key consist of two criteria's – yes or no. A remark column was provided for each item, where experts would give their suggestions and remarks. The prepared tool for validation was submitted to 10 experts, which include General Physician, nurse educators, statistician and English literature to establish content validity.

There was 100% agreement on the items of socio demographic profile which 7 in number.

The structured knowledge questionnaire regarding hazards in use of plastic products consists of 30 items out of which 25 items had 100% agreement. The 25 items were retained and 05 items does not measure the area of study were removed according to the expert's opinion.

Attitude scale consist of 12 items of five-point Likert scale Strongly agree to Strongly Disagree.

#### Reliability

After construction of questionnaire for "A study to assess the effectiveness of video assisted teaching on knowledge and attitude regarding hazards of use of plastic products among the school children at selected urban schools, at Mysuru district" it was tested for its validity and reliability.

Validity of the tool was assessed using content validity. Content validity was determined by experts from Nursing and Medical. They suggested certain modifications in tool. After the modifications they agreed this tool for assessing the effectiveness of video assisted teaching on knowledge and attitude regarding hazards of use of plastic products among the school children at selected urban schools, at Mysuru district.

Reliability of the tool was assessed by using Test-retest method. Knowledge score reliability correlation coefficient value was 0.85 These correlation coefficients were very high and it is good tool for assessing the effectiveness of video assisted teaching on knowledge and attitude regarding hazards of use of plastic products among the school children at selected urban schools, at Mysuru district.

#### PILOT STUDY

The pilot study is a small-scale version of a preliminary try out method to be used in a large study, which acquaints the research with the research method, tools and problems that can be corrected before assessing out of the large study.

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After obtaining the formal permission from principal, college of nursing and ethics committee, cauvery college of Nursing. Pilot study was conducted among patient children of urban school, SNS school Mysore who was met the inclusion criteria. It was carried over among 10 selected samples for the period of 7 days from 22.3.24 to 30.3.24.

#### **Data collection Method**

The data collection was scheduled from 06-04-2024 to 15-04-2024 before the data collection the investigator obtained the permission from head master of selected school at Mysore.

Investigator visited the urban school and with the help of head master, introduced herself to the school children explained the purpose of the study. 120 children were selected in 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> standard by convenient sampling method. The questionnaire was introduced to each children to assess the pretest knowledge regarding hazards of use of plastic products and attitude Approximately 25-30 minutes were spent with each children for pretest and video assisted teaching program regarding hazards in use of plastic products was administered.

After one week of video assisted teaching programme a post test was conducted to complete data. The data collection procedure has been terminated.

In order to achieve the objectives of the study, quasiexperimental design was adopted. convenient sampling technique was used to select the samples. The data was collected from 120 (60 students experiment group and 60 students in control group) who meet the inclusion and exclusion criteria as the samples selected from the urban schools, Mysore, District by using a self-administer questionnaire. The questionnaire consists of 3 parts (i.e.) socio demographic data, knowledge questionnaire regarding hazards in use of plastic products and attitude scale.

#### RESULT

Assessment of demographic variables of the urban school children regarding hazards of use of plastic products.

N=60(E)+60(C) =120

DEMOGRAPHIC	EXPERIMENTAL GROUP		CONTROL GROUP	
VARIABLES	Frequency	Percentage	Frequency	Percentage
Age in years				
a) 13 years	32	53.3%	33	55%
b) 14 years	25	41.6%	24	40%
c) 15 years	3	5.0%	3	5%
Gender				
a) Male	33	55%	33	55%
b) Female	27	45%	27	45%
Education Of The				
Father				
a) Illiterate	27	45%	31	51.6%
b) Primary	22	36.6%	22	36.6%
c) High school	11	18.3%	8	13.3%
d) Higher secondary	0	0%	0	0%
e) Diploma	0	0%	0	0%
f) Degree	0	0%	0	0%
Education Of The				
Mother				
a) Illiterate	34	56.6%	31	51.6%
b) Primary	25	41.6%	28	41.6%
c) High school	1	1.6%	1	1.6%
d) Higher secondary	0	0%	0	0%
e) Diploma	0	0%	0	0%
f) Degree.	0	0%	0	0%
Monthly Income Of				
The Family				
a) < Rs 5,000	30	50%	31	51.6%
b) Rs 5,001-10,000	30	50%	29	48.6%
c ) > Rs10,001.	0	0%	0	0%
Area Of Residence				
a) Rural	39	65%	35	58.3%
b) Urban	0	0%	0	0%
c) Semi urban	21	35%	25	41.6%
Previous Source Of				
Information				
a) Health personnel	0	0%	0	0%
b) Friends	13	21.6%	15	25%
c) Relatives	0	0%	0	0%
d) Media	24	40%	23	38.6%
e) None of the	23	38.3%	22	36.6%
above				

#### The findings are. Comparison of pre and post test levels of knowledge and attitude regarding hazards of use of plastic products among the urban school children in both experimental and control group

The statistical analysis revealed the knowledge and attitude of the experiment group was calculated by the paired 't' test for knowledge ('t'=24.11) and for attitude ('t' =16.00). This proves that there was a significant difference in pre test and post test levels of knowledge and attitude for the experiment group at 0.05 level. Where as in control group the knowledge level was ('t' =1.83) indicates no difference in knowledge and for attitude ('t' =1.12) was revealed there was no difference in pre and post test attitude for the control group at 0.05 level. So the given CAI was effective.

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#### Comparison of experimental and control group levels of knowledge and attitude regarding hazards of use of plastic products among the urban school children

The statistical analysis for the comparison of knowledge and attitude of the experiment group and the control group was calculated by the unpaired 't' test for pre test knowledge ('t' =1.08) it showed no difference in knowledge and for attitude ('t' =1.56). This proved that there is a no significant difference in attitude .Where as in post test the knowledge level was ('t' =20.37) and for attitude('t'=17.79) this revealed that there is a significant difference in post test knowledge and expressed practice for the experiment and control group.

## Assessment of correlation between the post test scores of knowledge and attitude regarding hazards of use of plastic products among the urban school children in both experimental and control group

The statistical analysis for correlation between the post test scores of knowledge and attitude of the experiment and control group was calculated by "Karl Pearson correlation test" stated that in experimental group the post test scores of knowledge mean value is 19.06 with SD 3.39 and the post test scores of attitude the mean value is 42.76 with SD 13.45. And the 'r' value (r = 0.8) it revealed that there is a positive and highly significant correlation between the knowledge and attitude regarding hazards of use of plastic products. In control group the mean post test value of knowledge was 8.50 with SD 2.77and in attitude the mean value 19.3 with SD 8.3 and 'r' value (r = 0.3) it revealed that there was a positive and moderate significant correlation between the knowledge and attitude regarding hazards of use of plastic products.

#### Association between the pre test levels of knowledge and attitude scores regarding hazards of use of plastic products among the urban school children in both experimental and control group with their selected demographic variables

The statistical analysis determined the association between the pre test levels of knowledge and attitude regarding hazards of use of plastic products among the rural school children with their selected demographic variables was calculated by using 'chi square test'. The results were stated that in experiment group towards the knowledge there is a significant association with age, sex, income of the family residence, previous source of information and attitude there is a significant association with age, income of the family, previous source of information. Where as in control group towards the knowledge level there is a significant association with age, income of the family, residence, and attitude level there is a significant association with sex, residence, income of the family.

## CONCLUSION

The study conclude that the knowledge and attitude of the experimental group was calculated by the paired 't' test for knowledge ('t'= 24.11) and for attitude ('t'=16.00). Where as in control group the knowledge level was ('t'=1.83) and for attitude ('t'=1.12). This proves that there is a significant difference in pre test and post test level of knowledge and attitude of the experimental group at 0.05 level. Where as in correlation between the post test scores of knowledge and attitude of the experimental and control group states the 'r' value (r=0.8) it revealed that there is a positive and highly significant correlation between the knowledge and attitude regarding hazards of use of plastic products in control group the 'r' value (r=0.3) it reveals that there is a positive and moderate significant correlation between the knowledge and attitude regarding hazards of use of plastic products. It

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indicated that the given CAI was effective.

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