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Effectiveness of planned teaching programme on knowledge and practice regarding prevention of occupational health hazards among domestic waste handlers

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Abstract
Aim: To find out the effectiveness of planned teaching programme on knowledge and practice regarding prevention of occupational health hazards among domestic waste handlers.
Settings and Design: Domestic waste handlers at selected corporation area of vijayapur.
Methods and Material: By using Non probability purposive sampling technique considered that 50 Domestic waste handlers are samples.
Statistical Analysis Used: As a descriptive statistics mean, median, standard deviation was used and as an inferential statistics to find the significant difference between pre test and post test knowledge and practice of regarding prevention of occupational health hazards t test was used and unpaired t test was used to compare the difference knowledge and practice of regarding prevention of occupational health hazards.
Results: The study results shows that 88% of clients had average knowledge regarding prevention of occupational health hazards in pretest and in post test 30% of clients had good knowledge regarding prevention of occupational health hazards. Also in pretest practice group 84% had adequate practice score regarding prevention of occupational health hazards and in post test 58% had highly adequate practice score regarding prevention of occupational health hazards. The calculated t value shows that there is a significant difference between pre test and post test effect of knowledge regarding prevention of occupational health hazards (t_{49}=5.99, df49= 1.678) and pre test and post test effect of regarding practice prevention of occupational health hazards (t_{49}=17.75, df49=1.678).
Conclusions: The finding of the study supports the effectiveness of planned teaching programme on knowledge and practice regarding prevention of occupational health hazards.

Keywords: Planned teaching. Knowledge. Practice. Occupational Health. Occupational hazards

Introduction
The word "waste" is derived from the Latin word vastare, meaning "to lay waste," which comes from the adjective vastus meaning "desolate" or "empty". It entered English through Old French and Middle English, initially referring to desolate or uninhabited regions, before its meaning broadened to include useless activity or refuse [1]. Waste is defined as any unwanted or unusable material discarded after primary use, or something of no further use. It can also refer to the careless or bad use of resources, such as "a waste of time". Waste can be solid, liquid, or gaseous and can come from various sources, including domestic, industrial, or medical activities [2]. Waste is derived from a wide range of sources, including human activities in homes, industries, and agriculture, as well as natural processes. Key sources include domestic waste (like food scraps and packaging), industrial waste (chemicals and metals), and agricultural waste (crop residue and manure) [3].

Rapid industrialization and population explosion in India has led to the migration of people from villages to cities, which generate thousands of tons of municipal solid waste (MSW) daily. The Municipal solid waste amount is expected to increase significantly in the near future as the country strives to attain an industrialized nation status by the year 2020 [4]. The problem of domestic waste is drawing increasing attention of the people as huge garbage is lying down uncollected beside the roads, streets dustbins and on the ground which is causing threat to the environment as well as endangering public health. This waste is generated as consequences of household activities such as the cleaning, cooking, repairing empty containers, packing, huge use of plastic carry bags [7]. Many times these wastes gets mixed with biomedical waste for hospital and clinics. There is no system of segregation of organic, inorganic and recyclable wastes at the household level [5]. Door to door collection rarely practiced community collection bins are poorly managed and usually no more than open dumps on the roadside. The improper handling and management of domestic waste from households are causing adverse effect on the public at large and this deteriorates the environment.[6]

Materials and Methods
Problem Statement
"A Study to Evaluate Effectiveness of Planned Teaching Programme on Knowledge And Practice Regarding Prevention of Occupational Health Hazards Among Domestic Waste Handlers at Selected Corporation Area of Vijayapur."

Objectives
- To assess the knowledge regarding prevention of selected occupational health hazards among domestic waste handlers.
- To assess the practice regarding prevention of selected occupational health hazards among domestic waste handlers.
- To evaluate the effectiveness of planned teaching programme regarding prevention of occupational health hazards.
- To find out the co relation between pre-test knowledge scores and practice scores regarding prevention of selected occupational health hazards among domestic waste handlers.
- To find out the association between knowledge and their selected demographic variables.
- To find out the association between practice and their selected demographic variables.

Operational Definition
- **Effectiveness**: It refers to gain in the difference between pre-test and post-test knowledge and practice score.
- **Planned teaching programme**: It is a detailed description of instruction or learning trajectory on prevention of selected occupational health hazards.
- **Prevention:** Prevention refers to measures or activities taken prevent complications which occur at workplace.
- **Occupational health hazards**: Refers to the health problems due to occupational hazards like respiratory, skin, ophthalmic infections, injury, falls and allergies.
- **Knowledge:** In this study it refers to the understanding and awareness of the stone crushers regarding preventive measures of selected occupational hazards.
- **Practice:** In this study it refers to activity performed by domestic waste handlers for prevention of selected occupational health hazards.

Assumptions
- The domestic waste handlers have inadequate knowledge regarding prevention of occupational health hazards.
- The domestic waste handlers may have poor practice regarding prevention of occupational health hazards & Proper methods of waste disposal.
- Training programme will improve knowledge &practice of domestic waste handlers regarding prevention of occupational health hazards.

Hypotheses
Following hypothesis will be tested at 0.05 level of significance
- **H_1:** There will be significant difference between pretest and post-test knowledge score regarding prevention of selected occupational health hazards among domestic waste handlers.
- **H_2:** There will be significant difference between pretest and post-test practice scoreregarding prevention of selected occupational health hazards among domestic waste handlers & Proper methods of waste disposal.
- **H_3:** There will be significant association between pretest knowledge and practice scores with selected demographical variables.
- **H4:** There will be a significant correlation between pre test knowledge & practice Score on prevention of selected occupational health hazards domestic waste handlers.

Delimitation
- The study is limited to domestic waste handlers.
- The study area is limited to workers of Corporation Vijayapur.

Population: Population for the study comprises of 50 Domestic Waste Handlers at Selected Corporation Area of Vijayapur.

Sample: Sample for the study would consist of 50 Domestic Waste Handlers at Selected Corporation Area of Vijayapur.

Sampling technique: Domestic Waste Handlers will be selected using purposive sampling technique.

Criteria for selection of samples.
Inclusion Criteria
- Both male and female domestic waste handlers of corporation Vijayapura are included in the study.
- Those who understand Kannada.
- Domestic waste handlers present during the time of study.

Exclusion Criteria
- The domestic waste handlers not working in corporation Vijayapura.
- The domestic waste handlers who are less than 15 years of age.
- The domestic waste handlers who are not present during the time of study.

Method of data collection
Data collection is the gathering of information needed to address a research problem.
1. A prior formal permission was obtained from the medical officer and Municipale Corporation Department.

2. Information consent was obtained from the subjects after explaining the purpose of the study.
3. Sample were selected by using purposive sampling technique.
4. Pretest was done to assess the existing knowledge and practice regarding prevention of occupational health hazards among domestic waste handlers.
5. On the same day PTP was given to knowledge and practice regarding prevention of occupational health hazards among domestic waste handlers for 45 minutes duration.
6. On the 8th day post test was taken.

Tools used for the study

Structured knowledge questionnaire was used to assess the knowledge and practice questionnaire is used to assess practice regarding prevention of occupational health hazards among domestic waste handlers. The questionnaire had two parts.

Part-I: Included 10 items of demographic variables such as age, gender, educational status, economic status, type of family, working experience, history of previous illness, source of information and training programme on domestic waste management.

Part-II: Consists of 2 sections

- **Section I:** Consists of structured knowledge questions to assess the knowledge regarding prevention selected occupational health hazards among domestic waste handlers
- **Section-II:** Consists of practice questionnaire on prevention of selected occupational hazards among domestic waste handlers.

Each item was scored as 1 and the total score of knowledge was 45. And the total score of practice check list was 16. The score was categorized on arbitrary basis as follows.

For knowledge questions

- **0-10:** Poor
- **11-20:** Average
- **21-30:** Good
- **Check list knowledge of practice**
- **0-05:** Inadequate
- **06-10:** Adequate
- **11-15:** Highly adequate

The findings were presented under the following headings

- **Section 1:** Demographic variables of respondents
- **Section 2:** Assessment of knowledge of respondents
- **Section 3:** Assessment of practice of respondents
- **Section 4:** Determine the effectiveness of planned teaching programme on knowledge and practice
- **Section 5:** Association of knowledge with selected demographic variables
- **Section 6:** Association of practice with selected demographic variables.
- **Section 7:** Assessment of correlation between pretest knowledge scores and practice scores.

Results

Section 1: Demographic Variables of Respondents

Frequency and percentage distribution according to their age, gender, educational status, Religion, Economic status per month, Type of family, Year of experience, History of previous illness, Source of information about occupational health hazards, training program.

Demographic variables	Category	Domestic waste handlers	
		Frequency	**%**
Age (in years)	20-30	9	18
	30-40	28	56
	40-50	13	26
	Above 50	00	00
Gender	Male	22	44
	Female	28	56
Educational status	Non formal	11	22
	Primary	38	76
	Secondary	01	02
	Degree	00	00
Religion	Hindu	40	80
	Muslim	08	16
	Christian	02	04
	Others	00	00
Economic status per month	Below 5000	00	00
	5000-10000	00	00
	10000-15000	33	66
	Above 15000	17	34
Type of family	Nuclear	35	70
	Joint	15	30
	Extended	00	00
	Single parent	00	00
Year of experience	Below 1year	01	02
	1-5 years	27	54
	5-10 years	05	10
	More than 10 years	17	34
History of previous illness	Yes	22	44
	No	28	56

Source of information about occupational health hazards	Mass media	10	20
	Friends & relatives	20	40
	Health personnel	15	30
	Any other	05	10
Attended any training program	Yes	40	80
	No	10	20

Distribution of respondents according to age

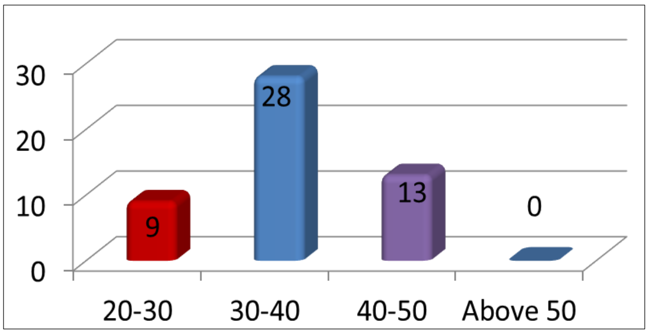


Fig 1: Shows the distribution of respondents by age

The above graph shows the distribution of respondents by age, in which 9 (18%) are of 20-30 years, 28(56)% are of 30-40 years, 13(26%) are of 40-50 years and nobody above 50 years of age group.

Distribution of respondents by Gender

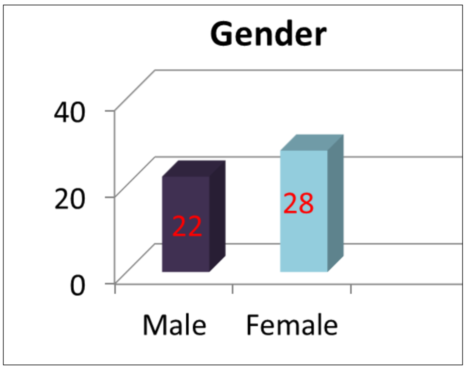


Fig 2: Shows the distribution of respondents by gender

The above graph shows the distribution of respondents by gender in which all 22 (44%) are belongs to males and remaining 28 (56%) members are females.

Distributions of respondents according their educational status

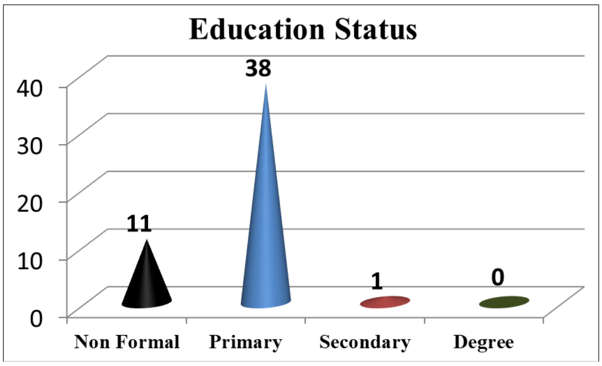


Fig 3: Shows the distribution of respondents according to their educational status

The above graph shows the distribution of respondents according to their educational status in which 11(22%) are non formal, 38(76%) are primary, 1(2%) are Secondary education, and no one has completed Degree.

Distributions of respondents according to Religion

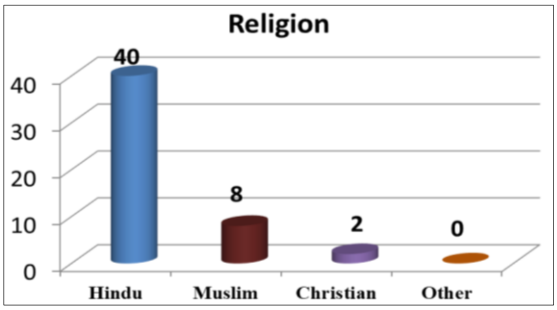


Fig 4: Shows the distribution of respondents according to religion

The above graph shows the distribution of respondents according to religion in which 40(80%) are Hindu, 8(16%) are Muslims and 2(4%) are Christians.

Distributions of respondents according to Economical Status

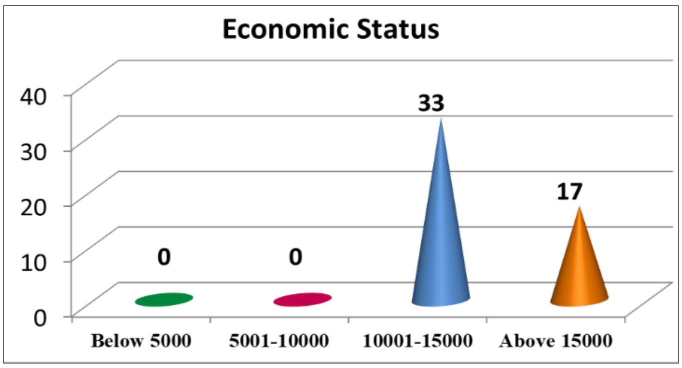


Fig 5: Shows the distribution of respondents according to Economical status

The above graph shows the distribution of respondents according to Economical status in which 33(66%) are having 10001-15000 and remaining 17(34%) are having above 15000 rupees as monthly income.

Distributions of respondents according to Type of family

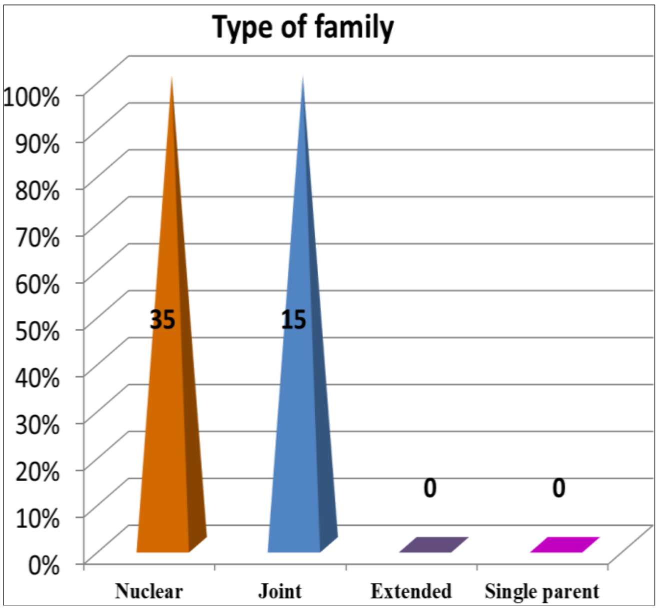


Fig 6: Shows the distribution according to Type of family

The above graph shows the distribution according to Type of family in which 35(70%) belongs to nuclear family and remaining 15(30%) belongs to joint family.

Distributions of respondents according to Year of Experience

The above graph shows the distribution of respondents according to year of experience in which 1(2%) are below 1year of experience, 27(54%) are between 1-5 years of experience and 5(10%) are having 5-10years of experience, 17 (34%) are having experience more than 10 years.

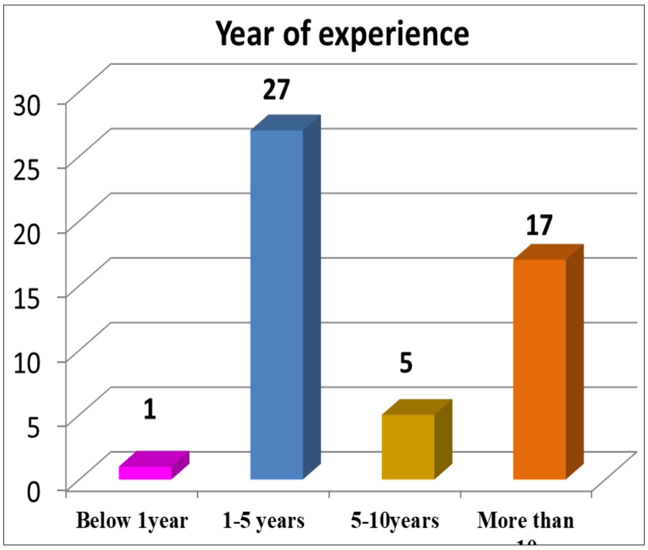


Fig 7: Shows the distribution of respondents according to year of experience

Distributions of respondents according to history of previous illness

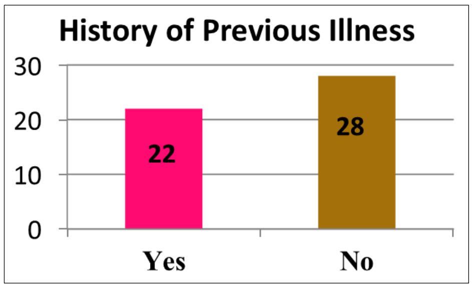


Fig 8: Shows the distribution of respondents according to history of previous illness

The above graph shows the distribution of respondents according to history of previous illness in which 22(44%) are having previous history of illness and remaining 28(56%) don't had any history of previous illness.

Distributions of respondents according to Source of Information

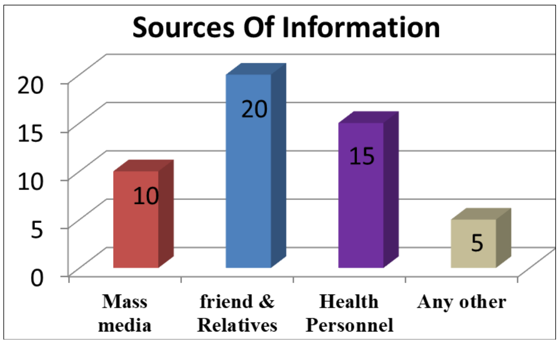


Fig 9: Shows the distribution of respondents according to Sources of information

The above graph shows the distribution of respondents according to Sources of information in which 10(20%) people receive information from mass media,20(40%) people receive information from Friends and relative, 15(30%) people receive information from Health personnel and remaining 5(10%) people rely on other sources.

Distributions of respondents according to Training programme

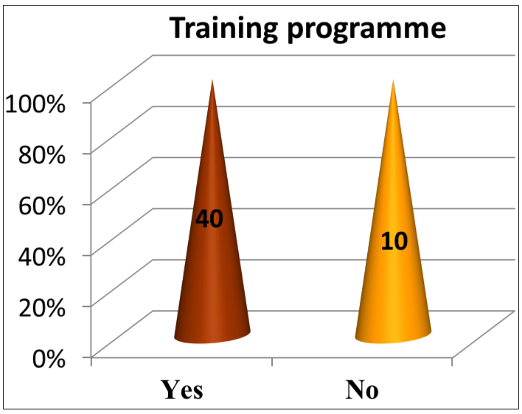


Fig 10: Shows the distribution of respondents according to attendance of training programme previously

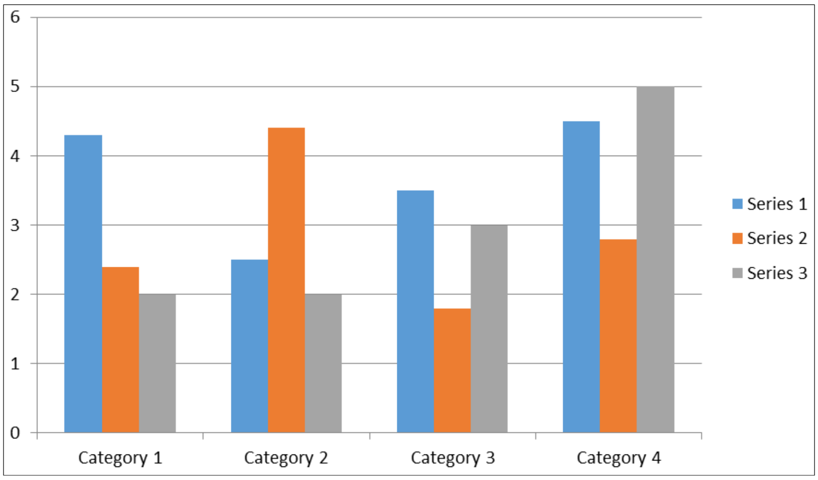
The above graph shows the distribution of respondents according to attendance of training programme previously in which 40(80%) have attended training programmes and 10(20%) have not attended any training programme on domestic waste management.

Section 2

Section 2: Knowledge Assessment of Domestic waste Handlers.

Table 1: Revels that knowledge pre test score

		No. of. Respondents				
			Pre test Percentage	Post test	Percentage	Total
Level of knowledge	Poor	6	12	05	10	11
	Average	44	88	30	60	74
	Good	00	00	15	30	15
	Total	50	100	50	100	100



The above table revels that knowledge pre test score 12% had poor, 88% had average, 00% had Good level of knowledge and post test score reveals that 30% had good level, 60% had average and 10% had poor level of knowledge.

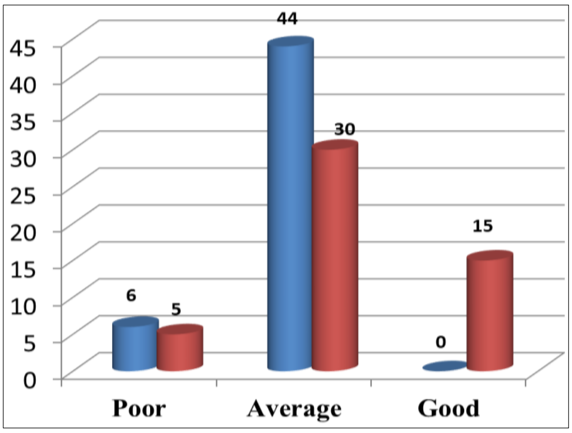


Fig 11: Distribution Domestic waste handlers according to knowledge level.

Section 3

Assessment of practice of respondents

Table 2: Practice Assessment of Domestic waste handlers

		No. of. Respondents				
		Pre test	Percentage	Post test	Percentage	Total
Practice	Inadequate	8	16	00	00	08
	Adequate	42	84	21	42	63
	Highly adequate	00	00	29	58	29
	Total	50	100	50	100	100

The above table revels the pre test practice score of Domestic waste handlers in that 16% had inadequate, 84% had adequate and post test practice score reveals that 58% had highly adequate and 42% had adequate practice levels.

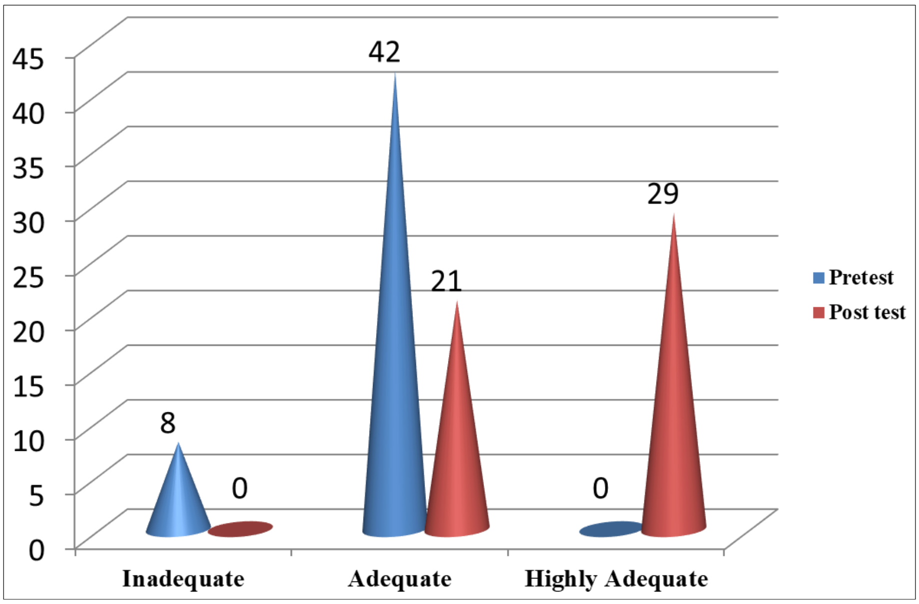


Fig 12: Distribution of Domestic waste handlers according to practice level.

Table 3: Association of demographic variables with Knowledge

Demographic variables	Category	Knowledge		X^2	P value	DF	Remarks
		≤ Median	>Median				
Age (in years)	20-30	5	4	0.25	0.881	2	NS
	30-40	13	15				
	40-50	6	7				
	Above 50	0	0				
Gender	Male	8	14	2.12	0.144	1	NS
	Female	16	12				
Educational status	Non formal	5	6	1.01	0.602	2	NS
	Primary	19	19				
	Secondary	0	1				
	Degree	0	0				
Religion	Hindu	18	22	2.4	0.301	2	NS
	Muslim	6	2				
	Christian	1	1				
	Others	0	0				
Economic status per month	Below 5000	0	0	1.66	0.196	1	NS
	5000-10000	0	0				
	10000-15000	18	15				
	Above 15000	6	11				
Type of family	Nuclear	16	19	0.243	0.621	1	NS
	Joint	8	7				
	Extended	0	0				
	Single parent	0	0				
Year of experience	Below 1year	1	0	7.70	0.0756	3	NS
	1-5 years	17	10				
	5-10 years	2	3				
	More than 10 years	4	13				
History of previous illness	Yes	14	8	2.5	0.108	1	NS
	No	20	18				
Source of information about occupational health hazards	Mass media	6	4	1.118	0.771	3	NS
	Friends & relatives	10	10				
	Health personnel	6	9				
	Any other	2	3				
Have you attended any training program	Yes	16	24	5.127	0.023	1	NS
	No	8	2				

The above table revels none of the demographic variables are having association with knowledge score.

Table 4: Association of demographic variables with Practice

Demographic variables	Category	Practice		X^2	P value	DF	Remarks
		≤ Median	>Median				
Age (in years)	20-30	3	6	6.65	0.03	2	S
	30-40	18	10				
	40-50	3	10				
	Above 50	00	00				
Gender	Male	2	10	0.67	0.411	1	NS
	Female	12	16				
Educational status	Non formal	6	5	1.102	0.57	2	NS
	Primary	18	20				
	Secondary	00	01				
	Degree	00	00				
Religion	Hindu	20	20	2.11	0.36	2	NS
	Muslim	04	04				
	Christian	00	02				
	Others	00	00				
Economic status per month	Below 5000	00	00	0.239	0.615	1	NS
	5000-10000	00	00				
	10000-15000	15	18				
	Above 15000	09	08				
Type of family	Nuclear	17	18	0.01	0.90	1	NS
	Joint	07	08				
	Extended	00	00				
	Single parent	00	00				
Year of experience	Below 1year	1	00	2.54	0.461	3	NS
	1-5 years	11	16				
	5-10 years	02	03				
	More than 10 years	10	17				
History of previous illness	Yes	08	14	2.1	0.14	1	NS
	No	16	12				
Source of information about occupational health hazards	Mass media	06	10	1.35	0.708	3	NS
	Friends & relatives	08	12				
	Health personnel	08	17				
	Any other	02	03				
Have you attended any training program	Yes	16	24	5.11	0.023	1	S
	No	08	02				

The above table revels age and training programmes are significantly associated with practice and remaining demographic variables are having non significance with practice score.

Section 4: Effectiveness of Planned teaching programme

Table 5: Comparison of level of knowledge before and after Planned teaching programme

Knowledge aspect	No of items	Mean	S.D	Mean difference	t value	Inference
Pre test	30	13.32	2.743	4.9	5.990	S
Post test	30	18.22	4.656			

T_{49} =1.678 s=significance

It is evident that the obtained “t” value 5.99 is greater than the table value both at 0.05 level of significance therefore t value is found to be significant. hence it is inferred that there is significant difference between the knowledge levels of domestic waste handlers regarding prevention of occupational health hazards.

Table 6: Comparison of Practice before and after Planned teaching programme.

t-test	No. of items	Mean	S.D	Mean difference	t-value	inference
Pre test	15	6.52	1.616	4.08	17.75	S
Post test	15	10.6	1.01			

T_{49} =1.678 s=significance

It is evident that the obtained “t” value 17.75 is greater than the table value both at 0.05 level of significance therefore t value is found to be significant. hence it is inferred that there is significant difference between the practice levels of domestic waste handlers regarding prevention of occupational health hazards.

Table 7: Correlation between pretest knowledge scores and practice scores.

Variables	Mean	SD	Range	rho Value	Significance
Knowledge	13.32	4.6567	11	0.079	S
Practice	6.52	1.616	4		

The above table reveals that the correlation between pretest knowledge and practice scores is very weakly correlated.

Discussion
In present study that there was no significant association between the prestest knowledge and skill score with selected demographical variables and the mean difference has shown that the Planned teaching programme was effective on prevention of occupational health hazards among domestic waste handlers.

Conclusion
The main aim of the study is conducted on the assessment of knowledge and practice regarding prevention of occupational health hazards among domestic waste handlers. among 50 domestic waste handlers are selected as samples. the interpret the level of knowledge score in 4 levels like, poor, average, good and also interpret the level practice score in 3 levels like, in adequate, adequate, highly adequate. when the pretest and posttest score was collected to do the statistical analysis, the result has shown that the planned teaching programme was effective on domestic waste handlers to improve the knowledge and practice regarding the occupational health hazards.

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

- A similar study can be conducted among the general population.
- Comparative study may be conducted to find out the similarities and differences in knowledge and practices between urban and rural areas.
- Experimental study can be conducted with structured learning programme on knowledge and practice.
- Mass and individual health education in regional languages to enlighten the workers can be organized at all the level of health facilities.
- At community level, during house visits, informational booklet on prevention of occupational hazardsmay be more useful in educating workers, there by encourage them to educate other members of the community.

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