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To assess the effectiveness of self-instructional module on knowledge regarding occupational health hazards among waste collection workers at Kalaburagi

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Abstract

Background: Waste handling is associated with various adverse effects because of the way and manner by which the waste collectors perform their duty with its perceived negative health impacts associated with improper handling of such waste. This has remained a source of concern to many local authorities and researchers alike.

Objectives: To evaluate the effectiveness of self-instructional module program on knowledge regarding occupational health hazards among waste collectors at selected areas of Kalaburagi.

Methodology: A evaluative approach with pre experimental one group pre-test post-test design was adopted for the study. The samples from the selected areas were selected using convenient sampling technique. The samples consisted 30 garbage waste collectors. The tools used for data collection was structured knowledge questionnaire.

Data collection procedure: Data was collected from 15.01.2024 to 31.01.2024 after obtaining administrative permission from selected areas of Kalaburagi.

Results: With regard to pre-test level of knowledge it shows that, maximum 15(50%) respondents were having average knowledge, 12(40%) respondents were having poor knowledge and remaining 3(10%) of respondents were having good knowledge. During post-test maximum 19(63.3%) of respondents were having average knowledge and 11(36.7%) of respondents were had good knowledge. With respect to knowledge scores of participants, the findings reveal that the post-test mean knowledge scores was found higher [mean=15.13, SD of 2.96] when compared with pre-test mean knowledge score value which was 10.20 with SD of 3.97. The statistical paired 't' implies that the difference in the pretest and post-test value was found statistically significant at 5% level ($P < 0.05$) with a paired 't' value of 10.14.

Conclusion: The findings revealed that, Knowledge of garbage collection workers regarding occupational health hazards was moderate. Health education programs needs to be organized such group of workers to educate and prevent them from occupational related health hazards.

Keywords: Occupational health hazards, waste collectors, knowledge, self-instructional module

Introduction

One of the most effective places to improve people's health is their community. It is a known truth that a person's health is significantly influenced by the social, physical, and cultural aspects of their neighborhood. Health is a complex phenomenon that is influenced by a person's lifestyle as well as the culture in which they live. These variables interact, and the interactions may be beneficial or detrimental to health.

The amount of waste produced rises along with the population, eventually filling up landfills. The growing expense of building is contributing to the increasing cost of landfills. Solid waste management, particularly in developing nation cities, heavily relies on operation recycling.

Municipal solid waste (MSW) is made up of things that people discard after using them. Refuse is a category of solid trash produced by a family that includes rotten goods, broken glass, empty cans, scrap paper, and leftover meals. Larger items that are often not thrown in a trash bin, like tree limbs and old appliances, could be considered trash (Lincoln, J. 1996)^[1]. Materials that have no economic worth are considered waste, and at the time of disposal, the owner is willing to get rid of any attributes that might be viewed as garbage.

Meanwhile, the current study is more concerned with trash generation, collection, and handling techniques.

Because of the manner in which garbage collectors carry out their duties and the anticipated negative health effects of inappropriate disposal of such waste, waste handling is linked to a number of unfavorable outcomes. Both scholars and numerous local officials continue to be concerned about this. Waste is defined as any material or item that the holder disposed of, planned to dispose of, or was obliged to dispose of. Each day, approximately 0.2 to 0.6 kilogramme of waste are generated per capita.

The International Labour Organization reported in 2002 that there are 270 million workplace accidents and 160 million occupational disorders among workers worldwide, with millions of people dying as a result (ILO 2002). Injuries and accident rates in India were 32.7% and 46.5%, respectively. Solid waste collectors' duties include telling clients about the requirements for proper disposal and emptying waste containers into a vehicle using a hydraulic lift or their own strength. However, waste's volume and diversity make it a problem for the purposes of this work. Clinical wastes, however, are outside the purview of this study. So, the purpose of the solid waste type and collection would be to research health risks connected to the processing of solid waste [2].

Bins, barrels, paper or plastic bags, as well as two- or four-wheeled containers, might all be used as collection containers. However, with the constant emergence of new neighborhoods, eateries, and other solid trash sources, collecting solid waste has grown to be an extremely challenging and complex operation in our metropolitan regions. It requires frequent heavy lifting of containers and other similar physical activities. Despite the significance of their work, waste collectors encounter numerous risks while performing their responsibilities [3].

Therefore, it is necessary to determine the reported exposures and possible dangers to occupational health for employees in each of the aforementioned businesses.

Objectives

1. To assess the knowledge regarding occupational health hazards among waste collection workers.
2. To evaluate the effectiveness of self-instructional module on knowledge regarding occupational health hazards among the waste collection workers.
3. To find the association between the pre-test knowledge scores of waste collection workers regarding occupational health hazards and their selected

demographic variables.

Hypothesis

H₁: The mean post-test knowledge scores of waste collection workers regarding occupational health hazards, who have undergone the self-instructional module, will be significantly higher than their mean pre-test knowledge scores at 0.05 level of significance.

H₂: The levels of knowledge of waste collection workers regarding occupational health hazards will be significantly associated with their selected personal variables at 0.05 level of significance.

Description of the tool

Part I: Demographic data: It consists of 7 items related to demographic data which includes age, gender, educational qualification, years of experience, previous knowledge regarding occupational health hazards, previous exposure to occupational health hazards and source of information.

Part II: Structured knowledge questionnaire

This section consists of 25 structured multiple choice items with the multiple options for each item to assess the knowledge of waste collection workers regarding occupational health hazards. The participant has to choose one right answer from given options. The right answer will be scored as 'one' mark and the wrong answer will be scored as 'zero' comprising the maximum score of 25.

Procedure of data collection

Data collection procedure for main study began from 15.03.2024 to 15.04.2024, After obtaining permission from concerned authority of selected areas Kalaburagi and consent from subjects the pre-test was conducted to 60 participants using structured knowledge scale; approximately 45 minutes were spent for collecting data. The investigator gathered participants in a comfortable room and conducted Pre-Test in selected areas Kalaburagi, Soon after the test, the structured interventional program was administered. On 8th day post-test was given with the same structured knowledge scale and took about 45 minutes to complete the post-test. All the participants co-operated well with the investigator in both pre-test and post-test. The data collection process was terminated by thanking the subjects.

Results

Section I: Demographic Profile

Table 1: Frequency & percentage distribution of respondents by socio demographic variables n=60

Sl. No.	Demographic variables	Frequency (f)	Percentage (%)
1.	Age in years		
	20-60 yrs	20	33.3
	31-40 yrs	22	36.7
	41-50 yrs	18	30.0
2.	Gender		
	Male	36	60
	Female	24	40
3.	Educational qualification		
	No formal education	16	26.7
	Primary school	28	46.7
	High school	10	16.7
	PUC and above	6	10.0
4.	Years of experience		

	0-1 year	20	33.3
	1-5 years	20	33.3
	5-10 years	12	20
	>10 years	8	13.3
5.	Previous knowledge on occupational health hazards		
	Yes	24	40
	No	36	60
6.	Previous exposure to occupational health hazards		
	Yes	34	56.7
	No	26	43.3
7.	Source of information		
	News papers	18	60
	Family & friends	24	40
	Social Media	12	20
	Other	6	10

Section II

Distribution respondent’s scores according to their level of knowledge during pretest and post-test

a) Area wise and total distribution of pre-test and post-test knowledge scores of respondents

Table 2: Mean, median, mode, standard deviation and range of pre-test and post-test knowledge scores of Respondents n = 60

Area of Knowledge	Number of Items	Mean	Median	Mode	Standard deviation	Range
Pre-test	25	10.20	10.50	6	3.97	3-18
Post-test	25	15.13	15.50	17	2.96	9-21

Table 2. Reveals pre-test knowledge score of respondents regarding occupational health hazards, it shows that; The pretest knowledge scores respondents mean was 10.20, median was 10.50, mode was 6 with standard deviation 3.97 and score range was 3-18. The post-test knowledge scores

respondents mean was 15.13, median was 15.50, mode was 17 with standard deviation 2.96 and score range was 9-21.

b) Distribution respondent’s pretest and post-test scores according to their level of knowledge

Table 3: Frequency and Percentage distribution of respondents according to level of Knowledge regarding occupational health hazards n=60

Level of Knowledge					
Pre-test			Post-test		
Poor F (%)	Average F (%)	Good F (%)	Poor F (%)	Average F (%)	Good F (%)
24(40%)	30 (50%)	6(10%)	00	38 (63.3%)	22 (36.7%)

The data presented in the Table 3 depicts the respondent’s level of knowledge during pretest and post-test regarding occupational health hazards; With regard to pre-test level of knowledge it shows that, maximum 30(50%) respondents were having average knowledge, 24(40%) respondents were

having poor knowledge and remaining 6(10%) of respondents were having good knowledge. During post-test maximum 38(63.3%) of respondents were having average knowledge and 22(36.7%) of respondents were had good knowledge.

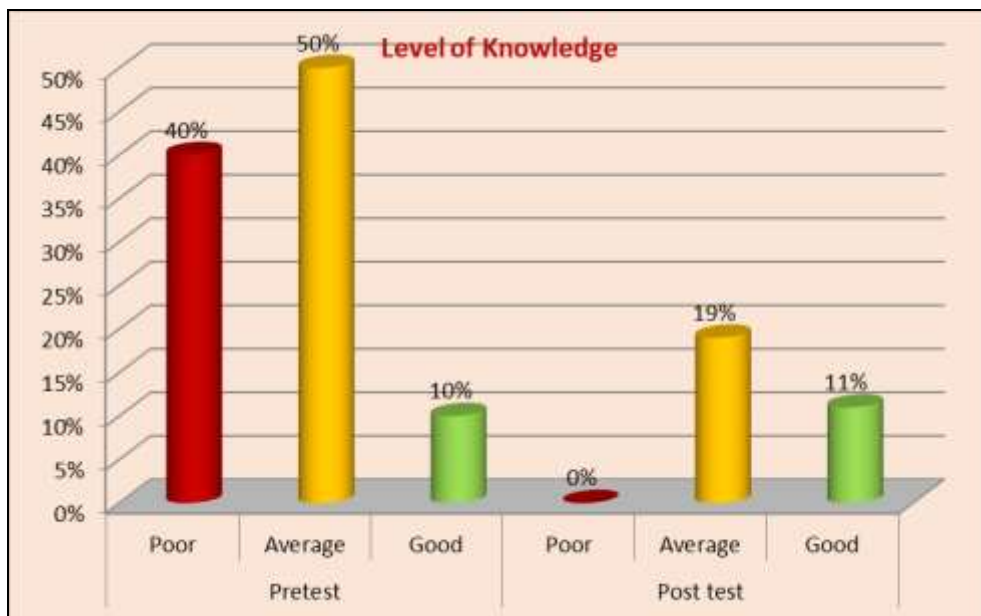


Fig 1: Pre-test and post-test level of knowledge

c) Effectiveness of self-instructional module

Table 4: Mean, standard deviation, standard error of difference and 't' value of pre-test and post-test knowledge scores N = 60

Area	Aspects	Mean	Sd	SEMD	Paired t Test
Knowledge	Pre-test	10.20	3.97	0.48	10.14*
	Post-test	15.13	2.96		

* Significant at 5 % level

Table 4 indicates the overall mean knowledge scores of pre-test and post-test scores:

With respect to knowledge scores of participants, the findings reveal that the post-test mean knowledge scores was found higher [mean=15.13, SD of 2.96] when compared with pre-test mean knowledge score value which was 10.20 with SD of 3.97.

The statistical paired 't' implies that the difference in the pretest and post-test value was found statistically significant at 5% level ($p < 0.05$) with a paired 't' value of 10.14. There exists a statistical significance in the difference of knowledge score indicating the positive impact of self-instructional module. Hence, the research hypothesis H_1 is supported. This indicates that the enhancement in knowledge is not by chance and the waste collection workers who exposed to self-instructional module on occupational health hazards, significantly improved in their knowledge.

d) Association between level of knowledge and selected socio demographic variables

The computed Chi-square value for association between level of knowledge of waste collection workers regarding occupational health hazards and their selected demographic variables is not found to be statistically significant at 0.05 levels for any of the selected socio demographic variables. Therefore, the findings do not support the hypothesis H_2 , inferring that waste collection workers level of knowledge regarding occupational health hazards is not significantly associated with their selected socio demographic variables.

Conclusion

Since a very few studies have been conducted regarding this topic in India, so the nurse researcher can take further studies on the same topic.

Conflict of Interest

Not available

Financial Support

Not available

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