Research Article

A Study to Evaluate the Effectiveness of Planned Video-assisted Health Educational Program on Knowledge of Health Hazards and its Prevention Among Selected Sanitary Workers of City Corporation Kalaburagi District of Karnataka State

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Abstract

Aim: The aim of the study is to evaluate the effectiveness of a planned video-assisted health educational program on knowledge of health hazards and its prevention among selected sanitary workers of the city corporation Kalaburagi district of Karnataka state.

Materials and Methods: This study used quasi-experimental methods. In this study, a single-group pre-test and post-test research design was used. City corporation Kalaburagi district hosted this study. This study has 100 participants. The sample size is 100. The researcher employed basic random sampling in this investigation.

Results: Most subjects (50%) were 30–39 years old. The sample was 51% male. Most subjects (40%) were high school graduates. Most sanitary workers were married (65%). Hindus make up 54% of respondents. About 31% had 1–5 years of experience. About 48% of subjects obtain TV info. It also found that 98% of sanitary staff had poor pre-test knowledge. In the post-test, 46% of subjects had enough knowledge of health hazard prevention after the scheduled video-assisted health educational course The respondents' mean pre-test knowledge scores were 19.43 (38.86%) with a standard deviation of 3.143, indicating poor knowledge. After the planned video-assisted health educational session, respondents' mean knowledge scores improved to 37.28 (74.56%) with a standard deviation of 2.985. Furthermore, at 0.01 significance, the "t" = 40.378 was bigger than the table value. Age, gender, education, marital status, religion, prior employment experience providing sanitary services, and information source were not significant at the 0.05 levels. There is no significant correlation found between the knowledge level of sanitary workers and the studied factors.

Conclusion: It appears that pre- and post-test sanitary workers' health hazard prevention knowledge differs and program of video-assisted health education on health dangers and preventive for chosen sanitation personnel of City Corporation, Kalaburagi district, Karnataka.

Keywords: Effectiveness, planned video assistance, health educational program, health hazards, prevention, sanitary workers, city corporation

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Introduction

India produces 62 million tons of municipal solid trash every year, which poses serious environmental issues. There are a few waste treatment projects available in the nation, including composting, recycling, pyrolysis, bio-refining and biogas plants, and incineration. The October 2, 2014, launch of sustainable solid waste management (SWM) is seen as a turning point in the history of the SWM movement in India.[1]

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India, as a developing nation, has to deal with numerous public health issues, including infectious diseases, undernourishment, unsanitary surroundings, and insufficient medical attention. However, in recent years, globalization and fast industrial growth have led to the creation of challenges relating to occupational health.[2]

There are two categories of employment related to sanitation: Formal and informal. Workers in sanitation encounter numerous difficulties. These include problems with legal and institutional matters, social and financial difficulties, occupational safety and health (diseases associated with contact with excrement, injuries, and the hazards of working in confined spaces), and injuries. The social stigma associated with working in sanitation is one of the key problems.[3]

The goal of our living environments is to prevent a significant portion of avoidable illness. Sanitary workers are an essential part of most communities, but they have also made a big contribution to the advancement of urban and semi-urban ecology and modern urban civilization, as well as to achieving socially sustainable development and fulfilling people's aspirations for physical, spiritual, political, and ecological civilization. Workers in the sanitation industry provide a vital giving back to their communities by gathering trash and transporting it to approved disposal sites, such landfills or dumps. A sanitation worker needs to be physically strong to move huge trash containers and get on and out of big trucks fast. It is a physically tough job. Workers in the sanitation industry frequently lift large objects and operate outside in all weather. The work carries a considerable danger of harm as well. Cleaning and emergency response are tasks that sanitation professionals perform during both man-made and natural disasters.

The foundation of the civic cleaning system is made up of sanitation workers. The majority of urban locality cleaning in underdeveloped nations like India, where resources are scarce, is done by hand. These employees deal with dirt, infectious, chemicals, animal excrement, organisms, sharp items, and other dangerous materials due to improper waste material segregation at the source and the street disposal of all garbage. They thus experience a variety of morbidities.[4]

Waterborne illnesses pose a greater risk of illness to sanitation workers. There have been recommendations for occupational health measures to lessen this risk and guard against illnesses like diarrhea. Sanitation workers should be trained in basic hygiene practices (such as washing their hands) and should be equipped with the suitable personal protective equipment (PPE), such as overalls, gloves, boots, goggles, and facemasks, as well as vaccinations (such as those for tetanus, polio, typhoid fever, and Hepatitis A and B). Leptospirosis, which is contracted by contact with rat urine, is one particular illness that sewer workers need to be aware of. Technology must adapt to workers' demands. The process of emptying container-based facilities, when pathogen concentrations in the trash are at their maximum, is the most significant exposure point. If workers have an option for appropriate attire, they are more likely to wear protective gear.[5]

Based on the most recent data, there are about 5 million sanitation workers in India. Their kind of work exposes them to several health risks. Some of these health problems include cardiovascular disorders; musculoskeletal conditions such as intervertebral disc herniation, and osteoid arthritic changes; exposure to toxic gases such as methane and hydrogen supplied; infections such as helicobacter, leptospirosis, and hepatitis; dermatological conditions; respiratory conditions; and altered parameters of pulmonary function. Every year, about 800 incidents involving sewage work are reported nationwide.[6]

With the aforementioned information in mind, the researcher set out to evaluate the sanitary staff's level of understanding. The researcher observed that several of the sanitation workers were not wearing their personal safety equipment during the community posting. The majority of sanitation workers use tobacco products; they smoke cigarettes right away after handling trash without cleaning their hands, and they also drink alcohol to help them tolerate the unpleasant stench that comes from the sewage particles. Despite the fact that there is a lot of research on the impact sanitation workers have on their occupational health. Studies on the health risk prevention program for sanitation workers are quite rare. To prevent health risks, the researcher therefore made the decision to offer a planned video-assisted health education program. Hence, this present study was intended to evaluate the knowledge of health hazards and its prevention among sanitary worker's goal to educate them using a planned video-assisted health educational program.

Objective of the study

The objectives of the study are as follows:

1. To assess the knowledge on prevention of health hazards among selected sanitary workers
2. To implement and evaluate the planned video-assisted health educational program
3. To find the association between the knowledge with their selected demographic variables.

Assumptions

1. Planned video-assisted health educational program will improve the knowledge on the prevention of health hazards among selected sanitary worker
2. The knowledge of the sanitary workers will influence the prevention of health hazards
3. Demographic variables may or may not be influence on knowledge of the prevention of health hazards among sanitary workers.

Materials and Methods

Research approach

The quasi-experimental research approach was employed for this investigation.

Research design
This study employed a pre-experimental, single-group pre-test-post-test research design.

Setting of the study
The Kalaburagi district of the municipal corporation served as the study's site.

Population of study
The current study's target population includes the selected sanitary workers of City Corporation, Kalaburagi district.

Sampling technique
The researcher employed a basic random sample methodology in the current investigation.

Sample size
The sample size is 100 (including male and female).

Description of tool
There were two sections to the tool.
- Part I: Sociodemographic factors
- Part II: A planned knowledge questionnaire was designed to gauge the sanitation workers' level of awareness about potential health risks in the municipal corporation Kalaburagi.

Statistics
- Descriptive: Standard deviation, mean, and mean percentage were employed
- Inferential: The "t" test and the Chi-square test were used to assess and compare the knowledge from the pre- and post-test.

Results
According to Table 1, 24% of the population was of 20–29 years range, 21% was of 40–49 years range, and 5% was over 50. Males made up 51% of the total, with females making up 49%. A little over 40% had finished high school, 30% had finished primary school, 15% had finished PUC, and 15% were illiterate. Of the sanitary workers, 5% were divorced, 11% were widowed, 19% were single, and 65% were married. There were 54% Hindus, 24% Muslims, 15% Christians, and 7% other people. Of those with experience, 31% had 1–3 years, 25% had less than a year, 17% had 6–10 years, and 27% had more than 11 years. Information is gathered by 48% of respondents via TV and mobile devices, 23% from friends, 19% from medical professionals, and 10% from publications.

Table 2 shows that, in the pre-test, 98% of the sanitary workers had insufficient knowledge, and the remaining 2% had moderate understanding. In the post-test, the majority of respondents (46%), who had received the intended video-assisted health education program, reported having adequate understanding (54%) and moderate knowledge (54%), respectively, related preventing health dangers.

Table 3 indicates that respondents' mean knowledge scores on the pre-test were 19.43 (38.86%), with a standard deviation of 3.143, indicating insufficient knowledge in the pre-test. Following the carrying out of the planned video-assisted health education program, the respondents' mean knowledge scores were 37.28 (74.56%) with a standard deviation of 2.985, indicating an improvement in the subjects' knowledge base.

Table 4 makes it clear that, at 0.01 level significance, the obtained "t" = 40.378 is more than the value in the table. The "t" value is therefore determined to be noteworthy. Therefore, it can be concluded that there exists a notable disparity with the knowledge of sanitary workers before and after the test with respect to preventing health dangers.

Table 5 displays the computed χ^2 value comparing the knowledge level pre-test of sanitary personnel about health hazard prevention and specific demographic factors. At the

Table 1: Distribution of demographic characteristics of sanitary workers

Demographic variables	Frequency	Percentage
Age		
a. 20–29 years	24	24.0
b. 30–39 years	50	50.0
c. 40–49 years	21	21.0
d. Above 50 years	5	5.0
Gender		
Male	51	51.0
Female	49	49.0
Educational status		
a. Illiterates	15	15.0
b. Primary	30	30.0
c. High school	40	40.0
d. PUC	15	15.0
Marital status		
a. Married	65	65.0
b. Unmarried	19	19.0
c. Widowed	11	11.0
d. Divorced	5	5.0
Religion		
a. Hindu	54	54.0
b. Muslim	24	24.0
c. Christian	15	15.0
d. Others	7	7.0
Sanitary service job experience		
a. <1 years	25	25.0
b. 1–5 years	31	31.0
c. 6–10 years	17	17.0
d. Above 11 years	27	27.0
Source of information		
a. TV, mobile	48	48.0
b. News papers	10	10.0
c. Health personnel	19	19.0
d. Friends	23	23.0

Table 2: Overall pre-test and post-test knowledge scores of the sanitary workers (*n*=100)

Knowledge level	Pre-test		Post-test	
	Frequency	%	Frequency	%
a. Inadequate knowledge	98	98.0	0	0.0
b. Moderate knowledge	2	2.0	54	54.0
c. Adequate knowledge	0	0.0	46	46.0
Total	100	100	100	100

Table 3: Mean, mean percentage, median, and standard deviation of pre-test and post-test knowledge scores of sanitary workers (*n*=100)

Knowledge aspects	Maximum score	Mean	Mean %	Median	SD	Mean	Mean %	Median	SD
General information	8	3.1	38.75	3	1.298	5.9	73.75	6	1.167
Respiratory problems	7	2.78	39.71	3	1.259	5.14	73.42	5	1.206
Skin diseases	8	3.2	40.0	3	1.034	6.07	75.87	6	1.208
Gastrointestinal problems	10	3.93	39.3	4	1.552	7.41	74.1	7	1.422
Eye problems	3	1.11	37.0	1	0.709	2.12	70.66	2	0.714
Musculoskeletal problems	14	5.31	37.92	5	1.495	10.64	76.0	11	1.778
Overall knowledge	50	19.43	38.86	20	3.143	37.28	74.56	37	2.985

Table 4: Comparison of knowledge scores of sanitary workers (*n*=100)

Sl. no.	Knowledge	Pre-test		Post-test		Mean difference	t-value	Do	Inference
		Mean	SD	Mean	SD				
1	General information	3.1	1.298	5.9	1.167	2.8	15.021	99	S
2	Respiratory problems	2.78	1.259	5.14	1.206	2.36	14.590	99	S
3	Skin diseases	3.2	1.034	6.07	1.208	2.87	18.616	99	S
4	Gastrointestinal problems	3.93	1.552	7.41	1.422	3.48	15.821	99	S
5	Eye problems	1.11	0.709	2.12	0.714	1.01	10.535	99	S
6	Musculoskeletal problems	5.31	1.495	10.64	1.778	5.33	23.667	99	S
	Overall knowledge	19.43	3.143	37.28	2.985	17.85	40.378	99	S

Table 5: Association of post-test knowledge score of sanitary workers with the demographic variables (*n*=100)

Variables	Below Median	Median and above	Chi-square	Df	*P*-value (0.05)	Inference
Age in years						
a. 20–29 years	12	12	5.072	3	0.167	NS
b. 30–39 years	19	31				
c. 40–49 years	14	7				
d. Above 50 years	2	3				
Gender						
a. Male	28	23	2.609	1	0.106	NS
b. Female	19	30				
Education						
a. Illiterates	6	9	4.590	3	0.204	NS
b. Primary	11	19				
c. High school	24	16				
d. PUC	6	9				
Marital status						
a. Married	29	36	1.893	3	0.595	NS
b. Unmarried	11	8				
c. Widowed	4	7				
d. Divorced	3	2				
Religion						
a. Hindu	25	29	2.187	3	0.535	NS
b. Muslim	9	15				
c. Christian	9	6				
d. Others	4	3				
Sanitary service job experience						
a. <1 years	10	15	0.771	3	0.856	NS
b. 1–5 years	16	15				
c. 6–10 years	8	9				
d. Above 11 years	13	14				
Source of information						
a. TV, mobile	23	25	1.087	3	0.780	NS
b. Newspapers	5	5				
c. Health personnel	7	12				
d. Friends	12	11				

0.05 level, variables such as age, gender, marital status, and education, experience working in sanitary services, religion, and information source were not significant. Therefore, it can be concluded that no meaningful correlation within the sanitary personnel' knowledge and the chosen variables was observed.

Discussion

A similar study conducted by Degavi *et al*. states that the response rate of samples was discovered to be 94.4%, with women making up the majority (79.7%). The research samples'

median age was 29 years old. It was discovered that 64% of survey participants reported having adequate awareness about preventing threats to their occupational health. Only 8.9% of solid trash collectors demonstrated appropriate practices for preventing occupational health hazards, compared to about 76.4% who had a positive attitude. Notwithstanding the fact that sanitation workers had received basic PPE, job discontent proved to be a significant factor in the statistical analysis in the implementation of good practice work patterns, together with the usage of PPE. The study concluded that legislation requiring PPE to be worn and supervision of collectors of solid waste, as well as strategies for implementing basic occupational health services, must be implemented.[7]

A study performed in Jamuhar, Rohtas; by Kumar *et al*., shows that 30 samples (16.66%) workers were having poor knowledge, (63.33%) workers were posing mediocre knowledge, and (20%) workers were possessing excellent knowledge. By assessing the knowledge level of workers, we are going to know the majority of employees' mediocre understanding of environment sanitation. Statically, there is no any significant association was found.[8]

Tolera *et al*., studied Lilacs, PubMed, Medline, and Embase between April 2010 and April 2022. Sanitary personnel (5833) included 4990 (85.5%) solid trash collectors, 618 (10.6%) healthcare cleaners, and 225 (3.9%) street sweepers. Age, education, and experience predicted injury occurrence. Other factors include smoking cigarettes (2.6, 1.55–4.34), sleeping disturbance (2.57), eating/smoking/drinking at work (3.85, 1.34–11.06), and lack of PPE. Sociodemographic variables that affect MSD development include age, employment experience, and education (OR: 6.73, 1.92–23.51). Behavioral factors include smoking and work satisfaction (OR: 11.43, 2.04–64.08). Working more than 8 h, working under time pressure, working more than 2 h, and having a bad back are risk factors for MSDs (OR: 15.7, 6.47–38.18) ($P < 0.05$). Government policy and other initiatives are necessary because the available data indicates that behavioral factors, occupational safety with work pattern elements, and sociodemographic indicators all significantly contributed to musculoskeletal disorders and occupational injuries among sanitation workers.[9]

A study conducted by Patil and Kamble shows that numerous environmental factors and workplace dangers that the sanitary workers encountered resulted in musculoskeletal illnesses (85%), respiratory issues (45%), headaches (40%), dermatological issues (35%), gastrointestinal issues (10%), and leptospirosis (10%). Following work, additional observations revealed that 90% of the workers suffered from a cold or cough, 50% from skin problems, 15% from allergies, 15% from typhoid and malaria, 10% from bronchitis, lung, and asthma problems, and 5% from hearing impairments. Workers who were exposed had decreased PEFR readings. The length of exposure was directly correlated with a decrease in PEFR readings. To mitigate occupational health risks, workers must be informed of any possible health risks associated with their profession. Promoting the use of a face mask, gloves, gum boots, caps, aprons, and other PPE, as well as reducing their exposure, is advised.[10]

A study conducted in Indore by Khatri *et al*. showed the majority (63%) of sanitation workers were female, and 71% of them were in the age range of 31–49. 96% of the population experienced one or more health issues, with respiratory issues accounting for the majority (87%). Only 5% of the study population used PPE, despite 85% of them being aware of its existence. About 98% of respondents declared they will employ PPE if it was offered by IMC. Merely 57% of people sought medical advice when ill. Sanitation workers have a high prevalence of health issues. Sanitation workers' attitudes and understanding about protective gear differ significantly from one another. It is necessary to implement strategies to enhance the tracking and management of illnesses and injuries at work.[11]

Conclusion

The primary finding of this study is that occupational health concerns affected all sanitation personnel. The intended video-assisted health education program is highly effective in changing people's knowledge of preventive measures for lowering the risk of work-related illnesses, such as wearing masks, washing clothes, practicing personal hygiene, avoiding prolonged exposure to sunlight, abstaining from alcohol and smoking, consuming less coffee and tea, using separate slippers for work and personal use, and deworming themselves and their families. The study's findings indicate that sanitary workers' propensity to seek medical attention was elevated by the intended video-assisted health education program.

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Conflicts of Interest

No.

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