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A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING SELECTED OCCUPATIONAL HAZARDS & IT'S PREVENTION AMONG BEEDI ROLLERS IN NATUNGRAM, MURSHIDABAD, WEST BENGAL.

Community Health Nursing

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ABSTRACT

Background: Beedi is a low-cost and widely used tobacco product in India. Many women from disadvantaged communities work as beedi rollers and are exposed to tobacco dust, nicotine, and other occupational hazards through inhalation and skin contact.**Objectives:** This study aimed to assess the existing knowledge of beedi rollers regarding occupational hazards and it's prevention, evaluate the effectiveness of structured teaching programme regarding occupational hazards and it's prevention among beedi rollers and find the association between pre-test knowledge score with their selected socio-demographic variables.**Methods:** A quantitative, pre-experimental one-group pre-test post-test design was used. Data were collected from 72 beedi rollers in Natungram, Murshidabad, using a knowledge structured questionnaire and convenience sampling. A structured teaching programme was provided after the pre-test, followed by a post-test after seven days. **Results:** In the pre-test, 95.8% had average knowledge, 4.2% had poor knowledge, and none had good knowledge. After the intervention, 44.4% achieved good knowledge, 55.6% had average knowledge, and none had poor knowledge, indicating that the structured teaching programme effectively improved knowledge.

KEYWORDS

Structured teaching programme, knowledge, occupational hazard and it's prevention, beedi rollers.

BACKGROUND

Beedi rolling continues to be a highly common occupation, despite being recognized as a hazardous activity. The task is typically performed at home, often requiring workers to maintain a fixed posture for long durations. Most people are engaged in beedi rolling at home, which increases their exposure to nicotine, tobacco dust, and toxic fumes through inhalation, skin contact, and the pharyngeal route.[1]This prolonged exposure may lead to multiple health risks. Tobacco use is responsible for more than 8 million deaths worldwide each year and contributes to approximately 229.77 million disabilities.[2] **In India**, the beedi rollers are constantly exposed to smoke when rolling beedis, beedi rollers faced serious health concerns. Prolonged contact leads to various occupational health conditions, such as high rates of musculoskeletal disorders (99.0%), gastrointestinal problems (65.5%), respiratory complaints (65.5%), neurological symptoms (74.5%), eye irritations, skin disorders, gynecological complications, and blood-related abnormalities have all been reported in studies.[3] **In 2022**, WHO-India commissioned the George Institute to carry out a comprehensive analysis of the occupational health risks faced by Indian beedi workers. Beedi workers had a significant prevalence of respiratory, musculoskeletal, gastrointestinal, neurological, cutaneous, and cardiovascular problems, according to analysis of 95 Indian research publications. This is in addition to illnesses affecting the nose, throat, ears and eyes.[4]

PROBLEM STATEMENT

"A study to assess the effectiveness of structured teaching programme on knowledge regarding selected occupational hazards & it's prevention among beedi rollers in Natungram, Murshidabad, West Bengal."

OBJECTIVES

1. To assess the existing knowledge of beedi rollers regarding occupational hazards and it's prevention.
2. To evaluate the effectiveness of structured teaching programme regarding occupational hazards and it's prevention among beedi rollers.
3. To find the association between pre-test score with their selected socio-demographic variables.

HYPOTHESIS

Hypothesis is tested at 0.05 level of significance.

H_1: The mean post-test knowledge score is higher than mean pre-test knowledge score regarding occupational hazards and it's prevention among beedi rollers at 0.05 level of significance.

H_2: There is a significant association between pre-test knowledge score and their selected socio-demographic variables at 0.05 level of

significance.

METHODOLOGY

A quantitative, pre-experimental one-group pre-test post-test design was used to assess the effectiveness of a structured teaching programme among beedi rollers. Convenience sampling included 13 participants in the pilot study and 72 in the main study at Murshidabad. Data were collected through an interview using a validated and reliable structured knowledge questionnaire (r = 0.93). After the pre-test, a 45-minute teaching programme was conducted, followed by a post-test after seven days. Data were analyzed using frequency, percentage, paired t-test, Chi-square, and Fisher's Exact Test. Necessary permissions and informed consent were obtained.

DATA ANALYSIS & INTERPRETATION

Section A: Frequency percentage distribution of beedi rollers according to their socio-demographic characteristics. (n=72)

Sl No	socio-demographic characteristics.	Category	Frequency	Percentage
1.	Gender	Female	72	100%
2.	Religion	Hindu Muslim	3 69	4.2% 95.8%
3.	Marital status	Married Widowed	70 2	97.2% 2.8%
4.	Income	Rs 23870 – 39829/- Rs 7989 – 23869/- < Rs 7988/-	3 36 33	4.2% 50% 45.8%
5.	Working experience	1-5 years 6-10 years >10 years	12 17 43	16.7% 23.6% 59.7%

(n=72)

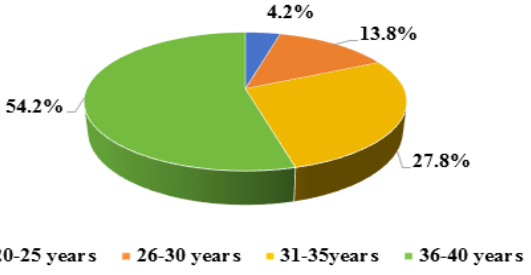

Fig No 1: Pie Diagram of Age of Beedi Rollers

(n=72)

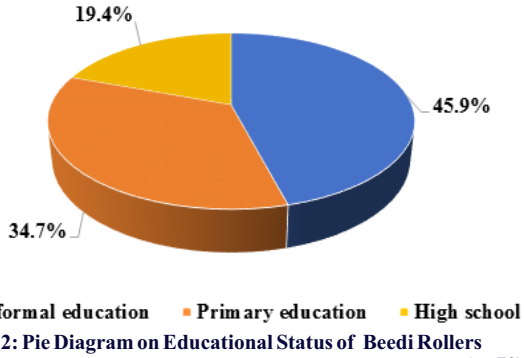

Fig No 2: Pie Diagram on Educational Status of Beedi Rollers

(n=72)

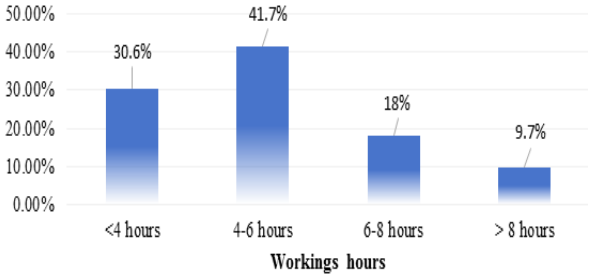

Fig No 3: Bar graph on working hours of beedi rollers

(n=72)

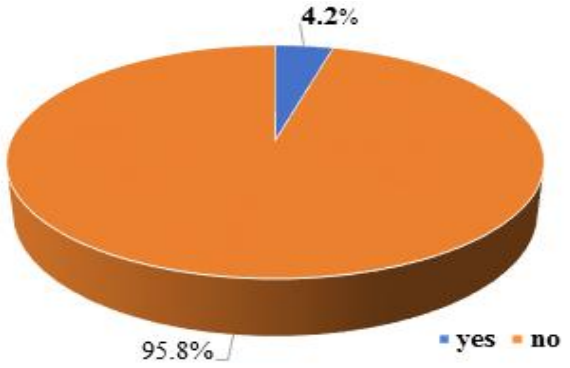

Fig No 4: Pie diagram on safety measures of beedi rollers

Section B: Level of knowledge among beedi rollers in pre-test and post-test.

Table No. 3: Depicts range, mean, median and standard deviation of pre and post-test knowledge score.

Sl No	Knowledge assessment	Range	Mean	Median	Standard deviation
1.	Pre-test	14	12.8	13	3.1
2.	Post-test	11	18.9	19	2.3

Table No 4: Level of knowledge regarding selected occupational hazards and it's prevention among beedi rollers in pre-test and post-test.

Level of knowledge	Pre-test	Post-test		
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Good knowledge (>19)	-	-	32	44.4%
Average knowledge (6.5-19)	69	95.8%	40	55.6%
Poor knowledge (<6.5)	3	4.2%	-	-

Section C: Effect of structured teaching programme on knowledge regarding selected occupational hazards and it's prevention among beedi rollers.

The pre-test mean score was 12.8 with a mean deviation of 6.1 and a standard deviation of 3.1. After the intervention, the post-test mean score increased to 18.8 while the standard deviation of 2.3. The paired t-test value of 22.14 for df (71) indicates a statistically significant improvement in knowledge following the teaching programme.

Section D: Association between the level of knowledge regarding selected occupational hazards and it's prevention among beedi rollers with their selected socio-demographic variables.

Across all variables study- including working experiences and safety measures the calculated values didn't exceed the tabulated values, and all p-values were > 0.05. Thus, **no socio-demographic variables showed a statistically significant association.**

DISCUSSION:

Section A: Frequency percentage distribution for socio demographic characteristics

The socio-demographic findings of 72 beedi rollers revealed that the majority were females aged 36–40 years (54.2%), Muslim (95.8%), and married (97.2%). Nearly half had no formal education (45.8%), while 50% had a monthly family income of ₹7,989–23,869. Most participants (59.7%) had more than 10 years of work experience and 41.7% worked for 4–6 hours daily. A large majority (95.8%) did not use any safety measures during beedi rolling.

Section B: Level of knowledge among beedi rollers in pre-test and post-test

In pretest, average knowledge level frequency is 69 and percentage is 95.8%, poor knowledge level frequency is 3 and percentage is 4.2%. In post-test good knowledge level frequency is 32 and percentage is 44.4%, average knowledge level frequency is 40 and percentage is 55.6%.

Prof. Vidyadhare G, Dinesh Selvam S (2024) a study was conducted to assess the effectiveness of an IEC package on knowledge regarding

occupational health hazard prevention and safety practices among beedi workers. The pre-test results showed that 90% had inadequate knowledge and 10% had moderate knowledge, while none had adequate knowledge. After the intervention, 70% achieved adequate knowledge and 30% had moderate knowledge, indicating the effectiveness of the IEC package in improving knowledge.[5]

Section C: Effect of structured teaching programme on knowledge regarding occupational hazards and its prevention among beedi rollers

The findings shows that the post-test knowledge score improved compared to the pre-test knowledge score. The mean knowledge score increased from 12.8 in the pre-test to 18.8 in the post-test, and the median increased from 13 to 19, indicating an overall improvement in the participants' knowledge level after the intervention. The standard deviation decreased from 3.1 to 2.3, suggesting that the post-test scores were more consistent and less widely distributed. Although the range decreased from 14 in the pre-test to 11 in the post-test, the overall findings indicate that the structured teaching programme was effective in improving the knowledge of the participants regarding selected occupational hazards and their prevention.

Lakshman Rao R L et al. (2020) conducted a study among women beedi workers in Telangana to assess occupational morbidity and related health problems, found low awareness of preventive measures and a high prevalence of respiratory problems, musculoskeletal pain, and eye irritation. The researchers recommended structured awareness programmes to promote safer work practices. This supports the present study, where a structured teaching programme effectively improved knowledge regarding occupational hazards and their prevention among women beedi rollers, particularly those working from home due to family responsibilities.[6]

Section-D: Association between the level of knowledge regarding occupational hazards and its prevention among beedi rollers and their selected socio-demographic variables

Fisher's Exact Test revealed no significant association ($p > 0.05$) between pre-test knowledge regarding occupational hazards and their prevention and selected socio-demographic variables. This indicates that the participants' baseline knowledge was independent of their socio-demographic characteristics.

Madhusudan M, Patil D, et al. (2021) Madhusudan M, Patil D, et al. (2021) conducted a cross-sectional study among 381 beedi workers in coastal Karnataka, India, to assess knowledge of occupational health hazards and its association with socio-demographic variables. Data were collected through a structured interview schedule and analyzed using frequency, percentage, and Chi-square test. The findings showed that most workers had low to moderate knowledge, with limited awareness of welfare schemes, preventive measures, and long-term health effects. A significant association ($p < 0.05$) was found between knowledge and selected variables, particularly age, education, and income.[7]

IMPLICATIONS

In nursing education, this study highlights the importance of including occupational health hazards among beedi rollers in the nursing curriculum.

In nursing services, the findings of the study support nurses in providing health awareness and preventive practices on occupational hazards and their prevention among beedi rollers during community visits, home visits, and health camps.

In nursing administration, the findings of this study can be utilized by integrating structured teaching programmes (STPs) on selected occupational hazards into routine community outreach activities and occupational health education programmes for beedi rollers.

In nursing research, it provides a basis for future nursing research on occupational health hazards among beedi rollers.

RECOMMENDATIONS

A similar study can be conducted with a larger sample size to improve the generalizability of the findings.

A Similar study can be conducted in different community settings and geographical areas to assess and improve the knowledge related to occupational hazards and their prevention.

Comparative studies may be undertaken between rural and urban beedi rollers to assess differences in knowledge regarding occupational hazards and their prevention.

CONCLUSION

The structured teaching programme was effective in enhancing knowledge about the occupational hazards and it's prevention among beedi rollers in the selected community area. The results support the need for educational interventions as a means to increase public awareness for prevention of selected occupational hazards among the beedi rollers.

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