International Journal of Engineering Applied Sciences and Technology, 2024
Vol. 9, Issue 08, ISSN No. 2455-2143, Pages 27-32
Published Online December 2024 in IJEAST (http://www.ijeast.com)

A STUDY TO ASSESS THE EFFECTIVENESS OF IEC PACKAGE ON KNOWLEDGE REGARDING PREVENTION OF OCCUPATIONAL HEALTH HAZARDS AND PRACTICE OF SAFETY MEASURES AMONG BEEDI WORKERS IN SELECTED URBAN COMMUNITY, BANGALORE.

Mrs. Vidyadhare G Professor
Department of Community Health Nursing
Raja Rajeshwari College of Nursing, Bangalore, Karnataka

Prof. Dinesh Selvam S
Department of Community Health Nursing
Sarvodaya College of Nursing, Bangalore, Karnataka

Abstract— **Background of the study: Beedi workers across India work in filthy, disease-causing conditions, breathing in tobacco fumes, often assisted by child workers who must be paid by the adult workers they help. Asthma, bronchitis, and tuberculosis are widely reported. More than 50% of beedi workers are women. A study to assess the effectiveness of IEC package on knowledge regarding prevention of occupational health hazards and practice of safety measures among beedi workers in selected urban community, Bangalore was conducted.**

Methodology: Quasi experimental-one group pre-test and post-test design was adopted in this study. Beedi workers were selected by simple random sampling technique. Collected data were analyzed using descriptive and inferential statistics beedi workers 42(70.0%) had adequate knowledge, whereas 18(30.0%) of them had moderate knowledge and none of them had inadequate knowledge and 9(15.0%) had adequate practice of safety measures whereas 51(85.0%) had moderate practice of safety measures none of them had inadequate practice of safety measure.

Results: The findings revealed that in pre-test, majority of the beedi workers 54(95.0%) had inadequate knowledge and 6(5.0%) had moderate knowledge and 21(35.0%) had inadequate practice of safety measures and 39(65.0%) had moderate practice of safety measures. This shows that the beedi workers had inadequate knowledge and practice of safety measures in the pre-test before administering structured IEC package. The findings revealed that in post-test knowledge majority of the beedi workers had 18(30.0%) moderate knowledge and 42(70.0%) had adequate knowledge and 9(15.0%) had adequate practice of safety measures whereas 51(85.0%) had moderate practice of safety measures none of them had inadequate practice of safety measure. There was a statistically significant association with religion and habits evidenced at $p<0.05$ level.

Conclusion: The assessment of knowledge regarding occupational health hazards and practice of safety measures among beedi workers revealed that the overall mean score was 10.17 and the percentage was 36.32% for knowledge and 1.56 and 11.57% for practice. Hence there was adequate knowledge level and good practice among beedi workers.

Keywords **-Knowledge, Occupational health hazards, Practice of safety measures, Beedi workers**

I. INTRODUCTION

Health is very much essential for individual to live in this world. Health has evolved from an individual concern to a worldwide social group**.** WHO has developed "The Global Plan of Action on Worker" Health (2008-2007). According to WHO and ILO estimates for the year 2000 there are 2.0 million work related death per year. WHO estimates there are

International Journal of Engineering Applied Sciences and Technology, 2024
Vol. 9, Issue 08, ISSN No. 2455-2143, Pages 27-32
Published Online December 2024 in IJEAST (http://www.ijeast.com)

only 10-15 % of workers who have access to a basic standard of occupational health service[1].

India's 4.5 million private sector beedi workers are among the most exploited workers in India. Beedi workers across India work in filthy, disease-causing conditions,breathing in tobacco fumes, often assisted by child workers who must be paid by the adult workers they help. Asthma, bronchitis, and tuberculosis are widely reported. More than 50% of beedi workers are women.[2,16]

Beedi is a forest product and also called poor man's smoke or poor man's cigarette. A standard beedi contains about 0.2grams of rolled tobacco flakes. Tobacco\tendu leaf is also known as kendu or tamburni[3]. Beedi rolling is an entirely manual process. Laborers painstakingly place tobacco inside a small tendu leaf, tightly roll the leaf and secure the product with a thread. This process is largely home-based and is dominated by women and children. An average roller achieves an output of about1000 beedis per day[3,17].

Beedi rolling remains extremely popular in India especially amongst women though being identified as hazardous occupation. Hour after hour of rolling beedis, takes a huge toll on the health of the beedi workers, many of whom live in unspeakable poverty. Even as the WHO carries on a relentless global campaign against the consumption of tobacco, little concern is exhibited about women beedi workers. These women who sit in one position for 10-16 hours a day rolling beedis inhale huge amounts of tobacco dust.[4,5]

According to the government of India 36, 25,000 lakh women making beedis belong to lower socio-economic groups (extreme poverty). They have long working hours and limited or no alternative sources of livelihood; they face exploitation at the hand of the middlemen or contractors, and legislative provisions that would be of assistance to them are not implemented[6,13].

Experience over the years has shown that increasing 'feminization of the work force' or the segregation of women into certain kind of low-paid, dis-empowering jobs has adverse implication on their health. The resulting health problems include weakening of the eye sight, backache, headache, loss of weight, loss of hearing, extreme tiredness and fatigue[6,5,15].

A study was conducted by the National Institution of occupation Health (NIOH),Ahmedabad and the result showed that the main hazard in the beedi industry is tobacco dust, burning of the eyes, conjunctivitis, bronchitis and emphysema. The report of public hearing on women beedi workers organized by Deepshikha nari niketan, Sagar stated that the occupational health risks and medical problems are many and medical facilities are very inadequate[7]. The present was undertaken to make beedi workers aware and concerned about occupational health hazards and practice of safety measures[7,14,12].

II. . MATERIALS AND METHODS

Sample and Sampling Technique: The present study's sample comprise male and female beedi workers and their age between 20-50 years and who works for at least 6 hours per day. The beedi workers who are involved in rolling beedi for less than 2 years and who cannot understand Kannada. In the present study 60 beedi workers were selected using a simple random sampling technique.

Description of Instrument: The instrument used in this study consists of three sections, which are as follows section I consists of Demographic data which gives base line information of the workers such as age, marital status, religion, educational status, income, habits, length of working hours per day and years of service in the beedi making. Section II consists of Structured interview schedule to assess the knowledge regarding prevention of occupational health hazards and practice of safety measures among beedi workers. Section III consists of Check list to assess the practice of safety measures regarding prevention of Occupational health hazards among the beedi workers.

Reliability: The reliability of the tool was determined after pilot study with a sample size of 6. The reliability was established through split half method. r =0.94 for structured interview schedule and for check list the r =1.0 and the developed tool was found to be statisticallyreliable.

Procedure for Data Collection: Formal permission was obtained from Beedi workers association Bangalore, Karnataka. The study was conducted among 60 subjects who were selected by using simple random sampling technique. Structured Knowledge interview schedule and checklist was given. Then Information, Education and Communication package was administered on the same day. The posttest was done after 6 days of administration of IEC package to the same subjects by using the same structured interview schedule and checklist.

this process, after that apply the inverse wavelet transform to the image for find out watermark image.

III. RESULTS

Description of demographic variables of Beedi workers

For the current research, majority of subjects 35(58.3%) belong to 41-50 years, 18(30.0%) of them belong to 30-41 years and 7(11.7%) of them belong to 20-30 years. With regard to religion, 11(18.3%) of beedi workers belong to Hindu religion, 49(81.7%) of beedi workers belong to Muslim religion. With regard to marital status, 54(90.0%) belong to married, 6(10.0%) belong to widow. With regard to education of beedi worker, 49(81.7%) of beedi workers did not have formal education, 6(10.0%) of beedi workers were studied primary, 5(8.3%) of beedi workers were studied secondary. With regard to sex, 11(18.3%) were male and 49(81.7%) were female. monthly family income in rupees, 35(58.3%) had income of rupees below 4000, 25(41.7%) had income of rupees 4001-6000. With regard to type of family,

International Journal of Engineering Applied Sciences and Technology, 2024
Vol. 9, Issue 08, ISSN No. 2455-2143, Pages 27-32
Published Online December 2024 in IJEAST (http://www.ijeast.com)

24(40.0%) of them were from nuclear family,18(30.0%) of them were from joint family, 18(30.0%) of them were from extended family. With regard to source of information, 20(33.3%) of them from health personnel, 2(3.3%) of them got from television, 34(56.7%)of them got information through friends, 4(6.7%) of them had no formal information. With regard to Habits, 8(13.3%) of them had habit of smoking, 11(18.3%) of them had habit of betel leaves chewing, 41(68.3%) of them had no habits. With regard to length of working hours per day 41(68.3%) were between 4-6 hours and 9(31.7%) were between 6-8 hours. With regard to any other members in the family involved in rolling beedi 8(13.3%) were spouse, 41(68.3%) were parents, 6(10.0%) were siblings, 5(8.3%) were children.

Table 1:Frequency and percentage distribution of knowledge regarding prevention of occupational health hazards among beedi workers before and after administration of IEC package.

n = 60

Level of knowledge	No. of Respondents			
	Pre-test		Post- test	
	Frequency	Percentage	Frequency	Percentage
Inadequate (≤50%)	54	90.0	-	0
Moderately (51-75%)	6	10.0	18	30.0
Adequate (>75%)	-	0	42	70.0

This study showed that in the pre-test, 54(90.0%) had inadequate knowledge and 6(10.0%) had moderate knowledge. In post test, 18(30.0%) had moderately knowledge and 42(70.0%) had adequate knowledge.

Table 2:Frequency and percentage distribution of level of practice of safetymeasures among beedi workers before and after administration of IEC package.

n=60

Level of practice	Pre- test		Post-test	
	Frequency	Percentage	Frequency	Percentage
Poor practice (≤50%)	21	35.0	-	-
Moderate practice (50-75%)	39	65.0	51	85.0
Good practice (>75%)	0	0	9	15.0

This study showed that the pre-test, 21(35.0%) had poor practice, 39(65.0%) had moderate practice and in post-test 51(85.0%) had moderate practice, 9(15.0%) had good practice.

Table 3:Mean, standard deviation and mean percentage for level of knowledgeregarding prevention of occupational health hazards and practice of safety measures among beedi workers before and after administration of IEC package.

n=60

Variable	Max Score	Pre-Test				Post-test			
		Range	Mean	Mean %	SD	Range	Mean	Mean %	SD
Level of knowledge	28	10-16	16.67	59.5	1.43	18-25	21.83	77.9	1.66
Level of practice	13	6-8	6.87	0.74	52.8	7-10	8.33	0.99	64.1

This study showed that the knowledge scores of pre-test range was (10-11), mean was (16.67), mean% was (59.5), SD was (1.43) and post-test range was (18-25), mean was (21.83), mean% was (77.9), SD was (1.66).And practice pre-test mean was 6.87, range was 6-8, SD was 0.74, mean percentage was 52.8% and post-test mean was 8.33, range was 7-10, SD was 0.99 and mean percentage was 64.1

International Journal of Engineering Applied Sciences and Technology, 2024
Vol. 9, Issue 08, ISSN No. 2455-2143, Pages 27-32
Published Online December 2024 in IJEAST (http://www.ijeast.com)

Table 4:Effectiveness on level of knowledge regarding occupational health hazards and practice of safety measures among beedi workers, before and after administration of IEC package and statistical significance.

n=60

Sl No	Variable	Maxscore	Enhancement			Pairedt test	p-value
			Mean	SD	Mean %		
I	Knowledge	28	10.17	2.28	36.32	34.44*	P<0.05
2	Practice	13	1.52	1.33	11.60	8.80*	P<0.05

*Significant at p<0.05 level, 5df.

This study showed that the difference between the ranges, mean, mean%, standard deviation of knowledge regarding occupational health hazards among beedi workers. The mean was (10.17), SD was (2.28) and mean% was (36.32)

This study showed that the difference between the ranges, mean, mean%, standard deviation of practice of safety measures among beedi workers. The mean was (1.52), SD was (1.33) and mean% was (11.60).

Table 5: Correlation between knowledge regarding occupational healthhazards and practice of safety measures among beedi workers.

n=60

Variables	Practice	
	r	p-value
Knowledge	0.431*	p<0.05

This study showed that the there is a positive correlation between knowledge and attitude (p<0.05 level) regarding occupational health hazards and practice of safety measures among beedi workers.

IV.DISCUSSION

Demographic variables of subjects

The study found that among the 60 subjects, there was a diverse range of ages. The largest group of subjects 35(58.3%) belongs to 41-50 years, with regard to religion, the largest group of subjects 49(81.7%) of beedi workers belong to Muslim religion, With regard to marital status, the largest group of subjects 54(90.0%) belong to married, With regard to education of beedi worker, the largest group of subjects 49(81.7%) of beedi workers did not have formal education, With regard to sex, the largest group of subjects 49(81.7%) were female. With regard to monthly family income in rupees, the largest group of subjects 35(58.3%) had income of below 4000 rupees, With regard to type of family, the largest group of subjects 24(40.0%) of them were from nuclear family, With regard to source of information, the largest group of subjects 34(56.7%) of them got information through friends, With regard to Habits, the largest group of subjects 41(68.3%) of them had no habits, With regard to length of working hours per day, the largest group of subjects 41(68.3%) were between 4-6 hours, With regard to any other members in the family involved in rolling beedi, the largest group of subjects 41(68.3%) were parents.

knowledge regarding prevention of occupational health hazards among beedi workers.

A. With regard to the level of pre-test knowledge regarding occupational health hazards, majority of the beedi workers 54(90.0%) had inadequate knowledge and 6(10.0%) had moderate knowledge and no one of them had adequate knowledge. with regard to the level of post-test knowledge regarding occupational health hazards, majority of the beedi workers 18(30.0%) had moderately knowledge and 42(70.0%) had adequate knowledge. The study was supported by the study conducted in Tamilnadu to analyses the frequency of respiratory symptoms and the knowledge about COPD in the general population, together with the use of spirometry in individuals at risk of COPD. A telephone survey was carried out in 6758 subjects. Spirometry was mentioned more frequently by subjects attended by pulmonologists than by GPs (67.6 vs. 28.6%; P<0.001). The term COPD was identified by 58.6% of the participants. The study concluded that many individuals are having lack of knowledge about COPD and an education is required among the people[8,11].

practice of safety measures regarding prevention of occupational health hazards among beedi workers.

With regard to the level of pre-test practice of safety measures, majority of the beedi workers, 21(35.0%) had poor practice, 39(65.0%) had moderate practice. With regard to the level of post-test practice of safety measures, majority of the beedi workers, 51(85.0%) had moderate practice, 9(15.0%) had good practice. The findings of the study was supported by

Study done by National Institute of Occupational Health, Ahmedabad Occupational safety intervention conducted a study among 29 tobacco harvester. Result showed that use of rubber gloves reduced nicotine and cotinine absorption as evidenced by the urinary excretion rate of nicotine and cotinine. Approximately 20 %(n=6) of the subjects reported that symptoms disappeared when they used gloves, but the remaining 23 workers complained of an occasional headache even when using gloves[9,12].

The effectiveness of IEC package on knowledge regarding occupational health hazards and practice of safety measures among beediworkers.

With regard to the effectiveness of IEC package on knowledge regarding occupational health hazards and practice of safety measures among beedi workers, the t value found to be 34.44 and 8.80for knowledge and practice respectively and it was highly significant at 5% (i.e.,$p<0.05$) level.

The correlate between the knowledge regarding occupational health hazards and practice of safety measures among beedi workers.

The table 5 shows that there is a positive correlation ($r=0.431$) between knowledge regarding occupational health hazards and practice of safety measures among beedi workers which was highly significant at $p<0.05$ level.

Association Between knowledge regarding prevention of occupational health hazards and practice of safety measures among beedi workers with their selected demographic variables.

In reference to the association of knowledge regarding prevention of occupational health hazards and practice of safety measures among beedi workers with their selected demographic variables, there was significant association of practice scores with religion and habits of beedi workers. The present study is supported by descriptive study conducted to associate the level of knowledge regarding occupational health hazards and practice of safety measures among 250 beedi workers. A validate knowledge questionnaire and practice check list was administered to assess the knowledge and practice. And this study concluded that there was a significant association of knowledge and practice among beedi workers within their age and religion[10].

V. CONCLUSION

The investigator conducted the present study to assess the knowledge regarding occupational health hazards and practice of safety measures among beedi workers. This study reveals that there is substantial increase in knowledge of beedi workers after intervention of structured IEC package regarding occupational health hazards and practice of safety measures. The above studies suggested that beedi workers are responsible for their own health. They will be exposed to different occupational health hazards throughout the life span, so they should be able to protect them self.

VI.REFERENCE

[1]. K.Park., Jabalapur.M/S Baranasida Bhanot publisher; 2005.\Text book of preventive and social medicine. 18th edition

[2]. Community health care.sited on 9 oct 2012. Available from URL.http://Beedi work in India.com.

[3]. Sudarshan R and Kaur R. India j labour econ.1999; the tobacco industry and women's employment; old concerned and new imperatives. volume 42: 675-85.

[4]. Aghi MB. Lifeline.October 2001; Exploiting women and children-India's bidi industry. volume 6:8-10

[5]. Rajasekhar D and SreedharG. February 2001;33,identifying alternative employment and income opportunities for women beedi workers- A study in Dakshina Kannada district of Karnataka. Reported submitted to the International Labour organization ,New Delhi,

[6]. Chattopadhyay B P, Kundu S, Mahata A,Jane Alam S K.A August 2006; Study to access the respiratory impairments among the male beedi workers in unorganized sectors. Indian Journal of Occupational and Environment Medicine. volume 10, issue 2: pp. 69-73.

[7]. A Public hearing on women beedi workers organized by Deepshikha Nari Niketan under the sponsorship of NCW ,Sagar, June 24, 2003.

[8]. Hnizdo E, Vallyathan V. April 2005 A controlled biological monitoring study was conducted on the effect of occupational exposure to unburnt beedi tobacco on tobacco processors.

[9]. National Institute of Occupational Health., June 1991; Occupational safety intervention. Ahmedabad volume21, no 2:76-81.

[10]. Jindal SK, et al. 2006; A study to assess the respiratory impairments among the male beedi workers in Aurangabad, district Murshidabad, West Bengal, India. 48 : 23-7.

[11]. Rajasekhar D and SreedharG. February 2001;identifying alternative employment and income opportunities for women beedi workers- A study in Dakshina Kannada district of Karnataka. Reported submitted to the International Labour organization ,New Delhi,33

[12]. J Uitti, H. Nordman, M.S Huuskonen, P.Roto, K Husman, M Reiman 2007;on respiratory health of cigar factory workers occupational exposure to raw tobacco. Indian J public health pp.330-7

[13]. Miravitlles M, de la Roza C, Morera J, et al. 2006Feb; A study was conducted on hospital-based observational case study was at a tertiary eye care

center located in a rural area of south India from March through October 18(4): 479-91.

[14]. Voluntary Health association year 2008 A study was conducted on home based beedi rollers The study examined the health vulnerabilities of beedi workers Jangipur, Murshidabad district (west Bengal) and Anand district India.

[15]. An exploratory study was conducted on the present condition of beedi rolling women in India in 4 states – Madhya Pradesh, Gujarat, Andra Pradesh and Kerala. India from May 2008.

[16]. Hnizdo E, Vallyathan V (April 2005). "Chronic obstructive pulmonary disease due to occupational exposure to dust: a review of epidemiological and pathological evidence". Occup Environ Med 60 (4): 237–43.

[17]. Directorate General of Factory. India from March 2007. A study was conducted on ‘occupational health profile of beedi workers and ergonomic interventions’