The effectiveness of a planned teaching program on knowledge regarding selected health hazards among Vitbhatti workers.

Mrs. Snehalata Reddy,[1] Mr.Rohit Kamble[2], Mrs.Manisha Kulkarni,[3] Dr.Bahubali Geddugol ,[4] Mr.Yogesh Bhosale,[5] Mr.Vishal Ghorpade ,[6] Ms. Indrayani Devadiga,[7] Ms. Asmita Yadav,[8] Mr. Sanee Mohite.[9]

[1]Dept of Community Health Nursing, Bharati Vidyapeeth (Deemed to be University), College of Nursing, Sangli. Email: snehalata.waghmare@bharatividyapeeth.edu

[2]Dept of Paediatric Nursing, Bharati Vidyapeeth (Deemed to be University), College of Nursing, Sangli

[3]Dept of Psychiatric Nursing, Bharati Vidyapeeth (Deemed to be University), College of Nursing, Sangli

[4]Dept of Medical Surgical Nursing, Bharati Vidyapeeth (Deemed to be University), College of Nursing, Sangli

[5,6,7,8,9]Bharati Vidyapeeth (Deemed to be University), College of Nursing, Sangli

***Corresponding author: Mrs. Snehalata S. ReddyEmail: snehalata.waghmare@bharatividyapeeth.edu**

Abstract:

Purpose: Vitbhatti workers are frequently exposed to various occupational health hazards due to their working environment. Lack of awareness regarding these hazards can lead to serious health problems. Therefore, an educational intervention in the form of a planned teaching program was introduced to improve their knowledge. **Objectives:** To assess the existing knowledge regarding selected health hazards among Vitbhatti workers. To assess the post-test knowledge score. To compare pre-test and post-test knowledge scores. **Material and Methods:** A quasi-experimental one-group pre-test post-test research design was used. The study was conducted among 90 Vitbhatti workers selected by simple random sampling technique. Data were collected using a structured knowledge questionnaire. Content validity was established by 22 experts from different fields, and necessary modifications were made. Reliability was tested using the test-retest method, and Karl Pearson's correlation coefficient was found to be r = 0.97, indicating high reliability. **Results:** The study findings were organized into four sections: demographic variables, pre-test knowledge score, post-test knowledge score, and comparison between pre-test and post-test scores. The mean pre-test score was 5.81, while the mean post-test score was 14.02. The calculated p-value was 0.00001, which is less than 0.05, indicating a statistically significant improvement in knowledge after the intervention. **Conclusion:**The study concluded that Vitbhatti workers had poor knowledge regarding selected health hazards before the intervention. After the planned teaching program, their knowledge improved significantly. Hence, the planned teaching program was found to be effective in increasing knowledge among Vitbhatti workers.

Keywords: Effectiveness, Health Hazards, Vitbhatti, Workers, personal protective equipments

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Introduction

India's brick industry is one of the oldest and rapidly expanding sectors, currently ranking second after China in global brick production. Workers in brick kilns are highly vulnerable to occupational health hazards, particularly respiratory problems such as asthma, bronchitis, emphysema, and reduced lung function due to prolonged exposure to dust, heat, and particulate matter. According to the International Labour Organization, approximately two million people die annually due to occupational causes, with construction workers accounting for a significant proportion of fatalities and injuries. Brick kiln workers face hazardous working conditions, including exposure to coal dust, ash particles, extreme heat, and poor ventilation, which increase the risk of chronic respiratory and occupational diseases. The brick-making process involves manual labor under harsh environmental conditions, including prolonged sun exposure, coal handling, and exposure to respirable suspended particulate matter (RSPM) containing silica, alumina, and metal oxides. These factors significantly contribute to long-term health risks such as lung diseases and

occupational disabilities.Despite the availability of safety measures, the use of personal protective equipment (PPE) remains inadequate, especially in developing countries. Studies show that although workers are aware of occupational hazards, the consistent use of PPE such as masks, gloves, and boots is limited. Socio-demographic factors, workplace conditions, and behavioral practices influence PPE usage. Therefore, promoting occupational health awareness and improving safety practices among brick kiln workers is essential to reduce health risks, prevent injuries, and enhance productivity.

Materials Methods:

Research Approach: Quantitative Research Approach. **Research Design:** Quasi-experimental one-group pre-test post-test design **Variables:** Independent Variable**:** planned teaching program. Dependent Variable**:** knowledge Demographic Variables: These include age, gender, and educational status, prior information about health hazards, monthly family income, and years of work experience in vitbhattis. **Setting of the Study:** vitbhatti workers in selected brick kilns located in Miraj, Kupwad, and Sangli**.** **Population**: Target Population**:** Vitbhatti workers **Sample Selection Criteria:** Inclusion Criteria**:** Workers who could read, write, and understand Marathi, Hindi, or English Workers with more than one year of work experience Exclusion Criteria**:** Workers who were not willing to participate in the study **Sample Size: 90 vitbhatti workers Sampling Technique:** simple random sampling technique **.**

Statistical analysis:

SectionI: Analysis of the demographic characteristics of the study participants.

Section II: Frequency and percentage distribution of pre-test knowledge score.

Section III: Comparison of between pre-test and post-test scores

Result:

Table1: Frequency and percentage distribution of the demographic variables.

n=90

Sr. No.	Demographic variables		Frequency	Percentage Frequency
1.	Age in years	20–30	40	44.44%
		31–40	40	44.44%
		41–50	10	11%
		51&above	0	0%
2.	Gender	**Male**	45	50%
		Female	45	50%
3.	Educational status	Noformal education	10	11%
		Primary education	80	89%
		Secondaryeducation	0	0%
		Highersecondaryeducation	0	0%
		Graduate& above	0	0%
4.	Family monthly income (inRs.)	5,000–10,000	0	0%
		10,001–15,000	80	89%
		15,001–20,000	10	11%
		20,001&above	0	0%
5.	Years of working experience in vitbhattie's	1 -5	15	17%
		6 -11	75	83%
		12–15	0	0%
		16&above	0	0%
		Yes	0	0%

Table no.2: Frequency and percentage distribution of pre-test knowledge score.

n- 90

Level of knowledge	Score	Frequency	Percentage
Poor Knowledge	1 to 8	80	89%
Average Knowledge	9 to 16	10	11%

Good Knowledge	17 to 24	0	0%

The above table shows that, most of the vitbhattie's workers 80(89%) had poor knowledge and 10 (11%) had average knowledge regarding selected health hazards. No vitbhattie workers has good knowledge regarding selected health hazards.

Table no.2: Frequency and percentage distribution of post-test knowledge score

Level of knowledge	Score	Frequency	Percentage
Poor Knowledge	1 to 8	01	1%
Average Knowledge	9 to 16	10	11%
Good Knowledge	17 to 24	79	88%

The above table shows that, most of the vitbhattie's workers 79(88%) had average knowledge, 10 (11%) had good knowledge and 1 (1%) had poor knowledge regarding selected health hazards. This reveals that after the planned teaching program level of knowledge regarding selected health hazards among vitbhattie's workers has increased.

TableNo.4: Comparison between pre-test and post-test knowledge score.

n- 90

Aspects	Mean	S.D.	d.f.	Paired t-test	p-value	Conclusion
Pre-test	5.8111	2.1034	89	47.7368	0.00001	Significant
Post-test	14.0222	2.3748			<0.05	

The above table shows that, according to knowledge level among vitbhattie's workers, the mean score of knowledge before giving planned teaching program regarding selected health hazards was 5.8111, S.D. is 2.1034 and the mean score of knowledge after giving planned teaching program regarding selected health hazards was14.0222, S.D.is2.3748 and t –value is 47.7368 and p – value is 0.00001 < 0.05 (at 5 % level of significance). Since the test is statistically significant p=0.00001at5%level of significant with 9 degrees of freedom. Hence, accept the alternative hypothesis $\square_1$This reveals the planned teaching programme on knowledge regarding selected health hazards among vitbhattie's workers was effective.

Discussion:

The present study assessed the effectiveness of a planned teaching program on knowledge regarding selected health hazards among vitbhatti workers. The findings revealed that most participants initially had inadequate knowledge, with 89% demonstrating poor knowledge in the pre-test. This may be attributed to low educational status, lack of awareness programs, and limited access to health information among workers.Following the intervention, a marked improvement in knowledge was observed, with 88% of participants achieving good knowledge scores in the post-test. This indicates that the planned teaching program was effective in enhancing awareness regarding occupational health hazards.The results are consistent with previous studies, which reported inadequate baseline knowledge among brick kiln workers and significant improvement after structured teaching interventions. Educational programs play a crucial role in improving awareness and promoting preventive practices among workers exposed to occupational risks.The statistical analysis further supported the effectiveness of the intervention, as there was a significant increase in mean knowledge scores from pre-test to post-test ($p < 0.05$). This confirms that structured teaching programs can serve as an effective strategy to improve knowledge and potentially reduce health risks among vitbhatti workers.

Conclusion:

The present study concluded that the planned teaching program was effective in improving the knowledge regarding selected health hazards among vitbhatti workers. The pre-test findings showed that most workers had poor knowledge, whereas the post-test results demonstrated a significant improvement, with a majority achieving good knowledge scores. The statistical analysis also confirmed a significant difference between pre-test and post-test knowledge scores ($p < 0.05$), indicating the effectiveness of the intervention.These findings highlight the importance of structured educational

interventions in increasing awareness among brick kiln workers. Regular health education programs can play a vital role in preventing occupational health hazards and promoting safer working practices in this population.

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