Research Article

A Pre-Experimental Study to Assess the Effectiveness of Information Booklet Regarding Occupational Health Hazards among Painters in Selected Areas of Pune City

Dr. Lairikyengbam Sushila Devi[1*], Ms. Sanjana Nangare[2a], Ms. Girija Palkar[2b], Mr. Atharva Made[2c]

[1]Assistant Professor, Bharati Vidyapeeth (Deemed to be University) College of Nursing, Pune.
[2a,2b,2c]GNM Nursing Students, Bharati Vidyapeeth School of Nursing, Pune.
***Corresponding author**: Dr. Lairikyengbam Sushila Devi

Abstract

Introduction: Occupational health hazards are a major concern among workers engaged in painting occupations due to frequent exposure to chemicals, dust, fumes, unsafe working conditions, and ergonomic strain. Painters are at increased risk of respiratory disorders, skin diseases, musculoskeletal problems, eye irritation, and accidental injuries because of inadequate safety practices and limited awareness regarding occupational hazards. Lack of proper education and insufficient use of personal protective equipment further increase their vulnerability. [2,5,9]

Methodology: A pre-experimental one group pre-test post-test design was used on 100 painters in selected areas of Pune city. Non-probability purposive sampling technique was used.

Result: The findings revealed that in the pre-test, 42% of participants had poor knowledge, 48% had average knowledge, and only 10% had good knowledge regarding occupational health hazards, with a mean score of 9.6 (SD = 3.8). After administration of the information booklet, 75% achieved good knowledge, 22% had average knowledge, and only 3% remained in the poor category, with a mean score of 16.8 (SD = 2.6). The calculated paired t-test value was 20.45, which was statistically significant at $p < 0.05$.

Conclusion: The study concluded that the information booklet was highly effective in improving knowledge regarding occupational health hazards among painters. Educational interventions can play a significant role in promoting occupational safety, preventing work-related diseases, and improving health awareness among workers.

Keywords: Occupational health hazards, painters, information booklet, occupational safety, health education

Introduction

Occupational health is an important aspect of workers' well-being and safety in every profession. Occupational health hazards refer to harmful conditions or risks that workers may experience while performing their job. These hazards may affect physical, mental, and social health. Workers in industrial, construction, agricultural, and service sectors are often exposed to multiple occupational risks that may result in injuries, illnesses, disabilities, and reduced productivity. [9]

Painters are one of the occupational groups highly exposed to workplace hazards. During painting work, they frequently come into contact with paints, solvents, thinners, dust, and toxic fumes. Continuous exposure to these substances can lead to respiratory problems, skin allergies, eye irritation, headaches, dizziness, and other chronic health conditions. Painters also work at heights and maintain awkward postures for prolonged periods, increasing the risk of falls, musculoskeletal disorders, and physical injuries. [2,5]

In many unorganized sectors, painters lack awareness regarding occupational safety measures and proper use of personal protective equipment such as gloves, masks, goggles, and protective clothing. Due to limited education, lack of training, and poor access to occupational health services, many workers continue unsafe practices that negatively affect their health. [2,6]

Health education is one of the most effective methods for improving awareness and encouraging safe practices among workers. Information booklets are simple, economical, and easy-to-understand educational tools that provide essential knowledge regarding workplace hazards and preventive measures. Such educational materials can motivate workers to adopt healthy and safe occupational behaviours. [1,3,4,10]

Pune city has a large number of painters working in construction and maintenance sectors who may be unaware of occupational health hazards and preventive strategies. Therefore, the present study was undertaken to assess the effectiveness of an information booklet regarding occupational health hazards among painters in selected areas of Pune city. [8]

Need of the Study

Occupational health hazards are a major public health concern among workers employed in risky environments. Painters are particularly vulnerable because of continuous exposure to harmful chemicals, paints, dust, and fumes during their work. These hazards may lead to respiratory illnesses, skin diseases, eye irritation, musculoskeletal disorders, and accidental injuries. [5,9]

Many painters do not possess adequate knowledge regarding occupational hazards and preventive measures. They often fail to use personal protective equipment and may not follow safe working practices. Lack of awareness, low educational status, and limited occupational health services contribute to increased health risks among painters. [2,6,8]

In developing regions and unorganized sectors, workers rarely receive structured occupational health education. As a result, many painters continue unsafe practices without understanding the long-term consequences on their health. Health education programmes can significantly improve workers' awareness and encourage healthy occupational practices. [1,4,7]

An information booklet is a practical and effective educational strategy because it provides simple and clear information regarding occupational hazards, prevention, and safety measures. Educational materials can improve workers' understanding and help them adopt safer work practices. [3,10]

There is limited research available regarding awareness of occupational health hazards among painters in selected areas of Pune city. Therefore, the present study was conducted to assess the effectiveness of an information booklet in improving knowledge regarding occupational health hazards among painters. [8]

Aim of the Study

To assess the effectiveness of an information booklet regarding occupational health hazards among painters in selected areas of Pune city.

Hypothesis

No significant difference in effectiveness of information booklet regarding occupational health hazards among painters at 0.05 level of significance.

Research Methodology

Research objectives

1. To assess the pre-existing knowledge regarding occupational health hazards among painters before intervention.
2. To assess the effectiveness of information booklet regarding occupational health hazards among painters after intervention.
3. To compare pre-test and post-test knowledge scores regarding occupational health hazards among painters.
4. To associate knowledge scores with selected demographic variables.

Research approach: -

Quantitative research approach was used

Research design

Pre-experimental one-group pre-test post-test design was adopted for the study.

Research setting: selected areas of Pune city.

Sample: Painters

Sample size:100

Sampling method: non-probability purposive sampling technique.

Research tool

Section I: Demographic data (age, gender, educational qualification, work experience, and monthly income)

Section II: Self-structured questionnaire related to occupational health hazards and preventive measures.

Reliability

Reliability of the tool was tested using the test–retest method on 10 samples. Karl Pearson correlation coefficient was calculated and the obtained r-value was +0.8800, indicating that the tool was reliable.

Pilot study

It was conducted on 10 painters to assess feasibility and clarity of the tool. Necessary permission was obtained from concerned authorities before data collection. Written informed consent was obtained from participants, and confidentiality was maintained throughout the study.

The pre-test was conducted using the structured questionnaire, followed by administration of the information booklet regarding occupational health hazards. Post-test assessment was conducted after 7 days to evaluate improvement in knowledge.

Results

Section I: Description of samples based on their demographic characteristics in terms of frequency and percentage

It shows majority of painters were aged from 26–35 years age group with 38%, 82% were male, 36% with secondary education, 34% with 6-10 years of work experience,40% with monthly incomeof₹20,000–30,000.

Section II: Finding related to Knowledge Scores Before Intervention among painters.

Table 1: level of knowledge before intervention.

Level of Knowledge	Frequency	Percentage	Mean	S.D
Poor (0–6)	42	42%	9.6	3.8
Average (7–14)	48	48%		
Good (>15)	10	10%		

Table 1: The distribution of painters based on findings before intervention shows majority had average knowledge with 48% followed by poor knowledge with 42% and good knowledge with 10%. The mean knowledge score was 9.6 (SD = 3.8), indicating inadequate awareness before intervention.

Section III: Finding related to Knowledge Scores after Intervention among painters.

Table 2: Post-Test Knowledge Score Distribution

Level of Knowledge	Frequency	Percentage	Mean	S.D
Poor (0–6)	3	3%	16.8	2.6
Average (7–14)	22	22%		
Good (>15)	75	75%		

Table 2: The distribution of painters based on findings after intervention shows majority had good knowledge with 75% followed by average knowledge with 22% and poor knowledge with 3%. The mean knowledge score improved to 16.8 (SD = 2.6), showing marked improvement.

Section IV: Findings related to effectiveness of information booklet regarding occupational health hazards and preventive measures after Intervention.

Table 3: paired t-test for effectiveness of information booklet regarding occupational health hazards and preventive measures among painters.

Test	Mean	S.D	d.f	t-value	p-value	Result
Pre-Test	9.6	3.8	99	20.45	0.0001	Significant
Post-Test	16.8	2.6				

Table 3: The above table shows that the mean post-test knowledge score (16.8) was higher than the mean pre-test score (9.6). The calculated t-value (20.45) was statistically significant at $p < 0.0001$. Hence, the null hypothesis was rejected and it was concluded that the information booklet was effective in improving knowledge regarding occupational health hazards among painters.

Section V: Analysis of data related to association of findings with demographic variables.

• No statistically significant association was found between post-test knowledge scores and demographic variables such as age, gender, educational qualification, work experience, and monthly income ($p > 0.05$).

• This indicates that the information booklet was equally effective among all categories of painters regardless of demographic differences.

Discussion

The present study aimed to assess the effectiveness of an information booklet regarding occupational health hazards among painters in selected areas of Pune city. The findings of the study clearly indicate that the information booklet was an effective educational tool in improving knowledge among painters regarding occupational health hazards and preventive measures. [3,10]

In the pre-test assessment, the majority of participants demonstrated poor to average knowledge regarding occupational health hazards. Many painters lacked awareness regarding the harmful effects of chemical exposure, inhalation of paint fumes, skin allergies, respiratory problems, musculoskeletal disorders, and safety precautions. This indicates inadequate awareness and highlights the need for structured educational interventions among occupational workers. [2,6,8]

After administration of the information booklet, there was a remarkable improvement in knowledge levels among painters. In the pre-test, 42% of participants had poor knowledge, 48% had average knowledge, and only 10% had good knowledge. However, in the post-test assessment, only 3% remained in the poor category, while 22% had average knowledge and 75% achieved good knowledge regarding occupational health hazards. [3,4,10]

The statistical analysis further supported these findings. The mean knowledge score significantly increased from 9.6 in the pre-test to 16.8 in the post-test. The calculated t-value was 20.45 with $p < 0.05$, indicating that the improvement in knowledge was statistically highly significant. These findings confirm that the information booklet was highly effective in improving awareness regarding occupational health hazards among painters. [1,3,4,10]

The findings of the present study are consistent with previous occupational health studies which reported that educational interventions significantly improve workers' awareness regarding occupational safety and preventive practices. Information booklets are simple, economical, and easy-to-understand educational materials that can be effectively used among workers with different educational backgrounds. [1,3,4,7,10]

Conclusion

The present study assessed the effectiveness of an information booklet regarding occupational health hazards among painters in selected areas of Pune city. A total of 100 painters were included in the study using non-probability purposive sampling technique, and a pre-experimental one-group pre-test post-test design was adopted.

The findings revealed a significant improvement in knowledge regarding occupational health hazards after administration of the information booklet. In the pre-test, 42% of participants had poor knowledge, 48% had average knowledge, and only 10% had good knowledge regarding occupational health hazards. Following the intervention, only 3% remained in the poor category, while 22% had average knowledge and 75% achieved good knowledge.

The mean knowledge score improved from 9.6 in the pre-test to 16.8 in the post-test. The paired t-test showed a highly significant difference ($t = 20.45$, $p < 0.05$), thereby confirming the effectiveness of the intervention.

The analysis also revealed that demographic variables such as age, gender, educational qualification, work experience, and income did not show any significant association with post-test knowledge scores. This indicates that the information booklet was equally effective among all categories of painters.

The study concludes that information booklets are simple, economical, practical, and highly effective educational methods for improving knowledge regarding occupational health hazards among painters. Such educational interventions can help promote occupational safety, reduce work-related health problems, and improve workers' quality of life.

Conflict of Interest

The author certify that they have no involvement in any organization or entity with any financial or non-financial interest in the subject matter or materials discussed in this paper.

Funding Source

There is no funding source for this study.

References

1. Sharma RK, Verma A. Effectiveness of occupational health education programme among construction workers regarding workplace hazards in urban communities. Int J Occup Health Nurs. 2018;6(2):45–50.
2. Gupta S, Kumar P. Awareness regarding occupational hazards and preventive practices among painters in industrial areas of North India. Indian J Community Health. 2019;31(3):210–215.
3. Reddy MM, Kumar P. Effectiveness of information booklet on occupational safety measures among painters in selected urban communities. Asian J Nurs Educ Res. 2017;7(4):355–360.
4. Kaur J. A study to assess the effectiveness of educational intervention regarding occupational health hazards among workers in Punjab. Int J Nurs Educ. 2016;8(3):122–126.
5. Singh J, Kaur H. Occupational exposure and respiratory problems among painters working in construction sectors. Indian J Public Health Res Dev. 2017;8(2):175–180.
6. Basu R, Sharma N. Knowledge and safety practices regarding occupational hazards among industrial workers in Maharashtra. Int J Health Sci Res. 2020;10(5):98–103.
7. Patel R, Mehta S. Impact of health education on prevention of occupational diseases among workers in Gujarat. J Occup Environ Med. 2018;12(1):65–70.
8. Deshmukh P, Jadhav S. Assessment of occupational health awareness among painters in selected communities of Pune city. Int J Community Med Public Health. 2021;8(6):2501–2506.
9. WHO. Occupational health: protecting and promoting workers' health. Geneva: World Health Organization; 2022.
10. Kumar S, Patel R. Effectiveness of informational booklet regarding occupational hazards among factory workers. Asian Pac J Health Sci. 2019;6(4):110–115.