

A Study to Assess the Effectiveness of Moulage Based Learning on Knowledge Regarding Assessment of Degrees of Burn Among Students of B.Sc. Nursing 4th Semester at Era College of Nursing, Lucknow

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Abstract

A burn is an injury to the skin or other organic tissue caused by heat, radiation, electricity, friction, radioactivity, or chemical contact. Accurate assessment of the degree of burn is essential for proper treatment and management, as misclassification can lead to ineffective therapy, delayed recovery, and increased risk of complications. Traditionally, nursing students learn about burn assessment through classroom lectures, textbooks, and visual aids; however, these methods often lack the practical exposure required for identifying burn severity in real clinical situations. Moulage Based Learning, which uses prosthetics and cosmetics to create realistic wound simulations, provides an experiential learning opportunity that helps students visually and practically understand different degrees of burns. The present study was conducted to assess the effectiveness of Moulage Based Learning on Knowledge regarding assessment of Degrees of Burn among B.Sc. Nursing 4th semester students at Era College of Nursing, Lucknow. A quantitative research approach with a quasi-experimental one-group pre-test and post-test design was adopted based on Kolb's Experiential Learning Theory. A total of 59 students were selected using a Simple Random Sampling technique, and data were collected using a self-structured questionnaire. The results showed that the mean pre-intervention knowledge score was 15.29, which increased to 21.37 in the post-intervention assessment, indicating that moulage-based learning significantly improved the students' knowledge regarding assessment of burn degrees. The findings also revealed that students initially had a moderate level of knowledge, which improved significantly after the intervention.

Keywords: Assess, Knowledge, Moulage Based Learning, Degrees of Burn, Nursing Students, Experiential Learning, Burn Assessment.

Introduction

A burn is an injury to the skin or other organic tissue that is caused largely by heat, radiation, radioactivity, electricity, friction, or chemical contact. When some or all of the skin's or other tissues' cells are killed by hot liquids (scalds), hot solids (contact burns), or flames (flame burns), the result is a thermal burn.¹

Misclassification may lead to ineffective therapy, a longer recovery time, or even a higher chance of problems. Traditionally, classroom lectures, textbooks, and visual aids have been used to teach the theoretical aspects of burn assessment. But in practical clinical settings, these approaches frequently fall short in offering the experiential learning required to correctly identify and distinguish between burn severity.

The accuracy of simulation experiences is increased by moulage, a specialised method that uses prosthetics and cosmetics to create realistic wound simulations. Moulage aids in the integration of theory and practice by providing a tactile and visual representation of burn damage. It enables nursing students to actively participate in their education, sharpen their critical evaluation abilities, and boost their self-esteem in their clinical aptitude.

Background of the study

A burn is an injury to the skin or other organic tissue that is caused largely by heat, radiation, radioactivity, electricity, friction, or chemical contact. The characteristics of burns depend on how much they affect the skin. Misclassification may lead to ineffective therapy, a longer recovery time, or even a higher chance of problems. Traditionally, classroom lectures, textbooks, and visual aids have been used to teach the theoretical aspects of burn assessment. But in practical clinical settings, these approaches frequently fall short in offering the experiential learning required to correctly identify and distinguish between burn severity. The accuracy of simulation experiences is increased by moulage, a specialised method that uses prosthetics and cosmetics to create realistic wound simulations.

Research methodology

This study was conducted using Quantitative Research Approach at Era College of Nursing Lucknow. Quasi experimental one group Pre-Test Post-Test research design has been adopted. The conceptual framework utilized in this study was Kolb's experiential learning theory. The total sample was 59. Simple Random Sampling technique was done using self-structured questionnaire to assess the effectiveness of Moulage Based Learning

Data analysis

Section – A

Description of Demographic Profile

This section describes the demographic characteristics of the sample under study. The data obtained describes the characteristics pertaining to the age of students, gender, Previous exposure to Burn, Posted in Burn Unit, Previous knowledge on Moulage.

Table No 1: Demographic Profile of the Subjects

Demographic Variables	Options	Percentage (%)	Frequency (f)
Age	18-20	54%	32
	21-23	44%	26

	24-26	2%	1
	27-29	0%	0
Gender	Male	0%	0
	Female	100%	59
Previous Exposure to Burn cases	Yes	14%	8
	No	86%	51
Posted In Burn Unit	Yes	0%	0
	No	100%	59
Previous Knowledge On Moulage	Yes	58%	34
	No	42%	25

- **Age:** The majority of the participants (54%) are between 18-20 years, followed by (44%) between 21-23 years and (2%) between 24-26 years and 0% in between 27-29 years.
- **Gender:** The overall respondents were female (100%).
- **Previous Exposure to Burn Cases:** 14% of the population were exposed to previous burn cases meanwhile majority (86%) didn't have any previous exposure to burn cases.
- **Posted in Burn Unit:** None of the population were posted in Burn Unit (100%).
- **Previous Knowledge on Moulage:** Most of the participants (58%) have previous knowledge on moulage whereas 42% don't have any knowledge on moulage.

Section – B

Main Analysis and Interpretation of Data

TABLE NO. 02: Frequency and Percentage Distribution of Pre Intervention Level of Knowledge

Criteria Measures of Pre-Intervention Knowledge Level				
S.No	Knowledge Level	Scores	Frequency	Percentage(%)
1.	Inadequate Knowledge	0-8	0	0 %
2.	Moderate Knowledge	9-17	49	83 %
3.	Adequate Knowledge	18-25	10	17 %
	Total	25	59	100 %

Maximum Score = 25

Minimum Score =0

- **Inadequate Knowledge** is reported in **0%** (0 participants) which is relatively very low.
- **Moderate Knowledge** is reported in only **83 %** (49 participants), which is relatively very high and suggests that majority of the participants have basic to average knowledge but **not strong** level of knowledge.
- **Adequate Knowledge** is reported in **17%** (10 participants) which is relatively very low indicating that they need targeted intervention to improve the adequate knowledge about the topic.

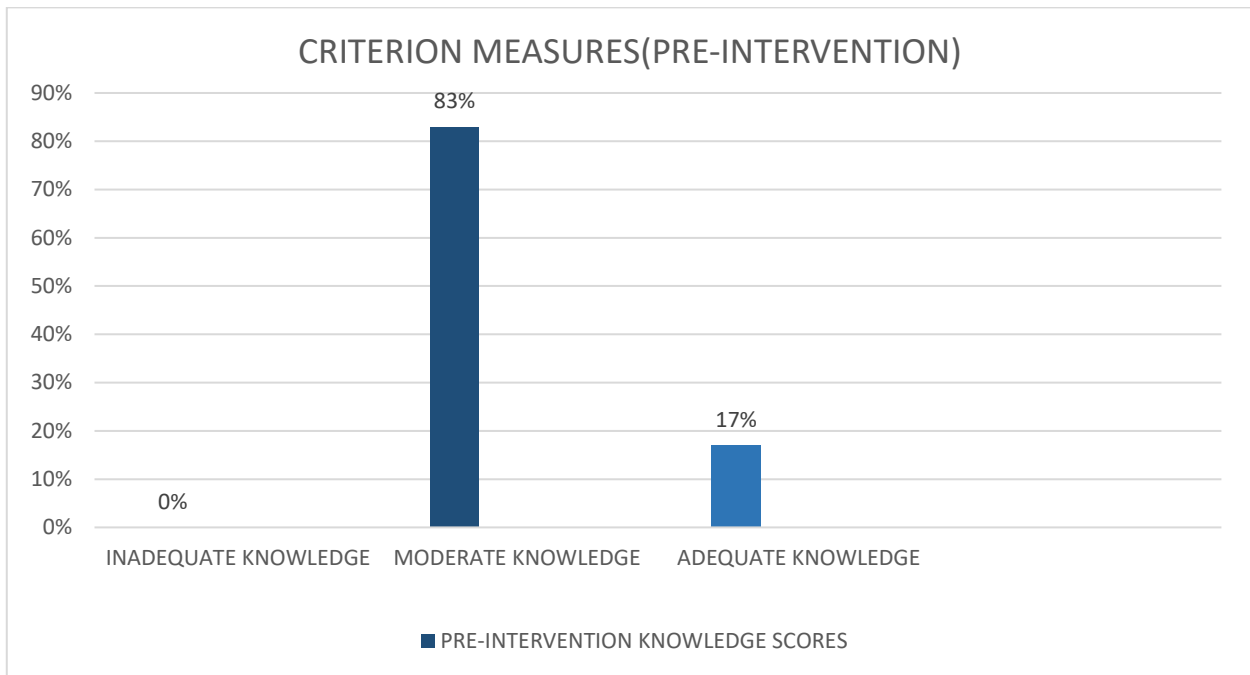


FIG 01: Bar diagram showing percentage distribution of Pre-Intervention Knowledge

TABLE NO 03: Frequency and Percentage Distribution of Post-Intervention Level of Knowledge

Criteria Measures of Post-Intervention Knowledge Level				
S.No	Knowledge Level	Scores	Frequency	Percentage (%)
1.	Inadequate Knowledge	0-8	0	0 %
2.	Moderate Knowledge	9-17	6	10 %
3.	Adequate Knowledge	18-25	53	90%
	Total	25	59	100 %

Maximum Score = 25

Minimum Score =0

- **Inadequate Knowledge** is reported in **0%** (0 participants) which is relatively very low indicating that none of the participants have inadequate level of knowledge.
- **Moderate Knowledge** is reported in only **10 %** (6 participants) which is relatively very low and suggesting they have basic to average knowledge.
- **Adequate Knowledge** is reported in **90%** (53 participants) which is relatively very high indicating that they have adequate knowledge about the topic indicating the **effectiveness of the given intervention**

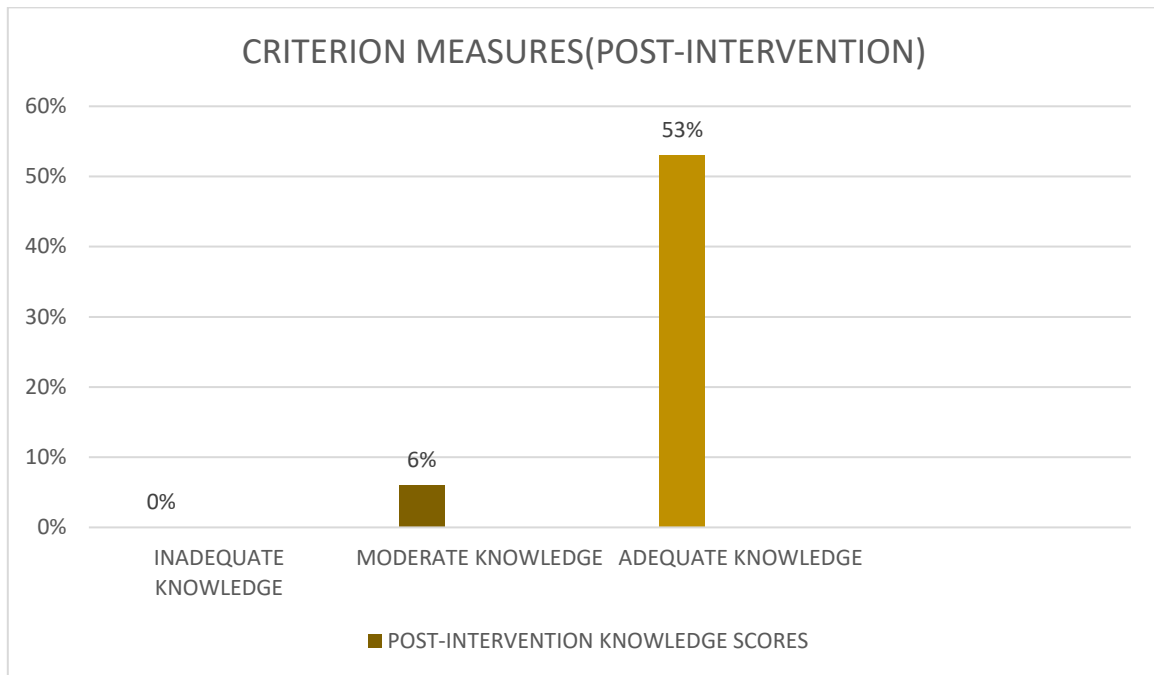


FIG 02: Bar diagram showing percentage distribution of Post-Intervention Knowledge Scores

TABLE NO. 04: Comparison of frequency and percentage distribution of Pre-Intervention and Post-Intervention Level of Knowledge

S. No	KNOWLEDGE LEVEL	SCORES	PRE-INTERVENTION	POST-INTERVENTION
			Frequency & Percentage (%)	Frequency & Percentage (%)
1.	Inadequate Knowledge	0-8	0(0%)	0(0%)
2.	Moderate Knowledge	9-17	49(83%)	6(10%)
3.	Adequate Knowledge	18-25	10(17%)	53(90%)
	TOTAL	25	59(100%)	59(100%)

Maximum Score = 25

Minimum Score = 0

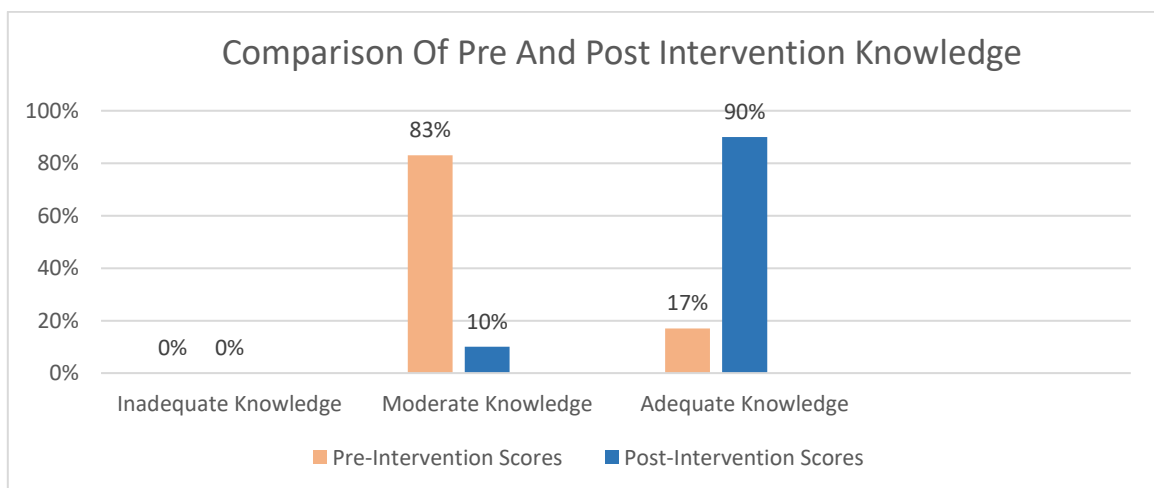


FIG 03: Bar diagram showing comparison of Pre and Post Intervention level of knowledge (Frequency Comparison)

TABLE NO 05: Comparison of Descriptive Statistics of Pre-Intervention and Post-Intervention Knowledge Scores

Paired Samples Test							
	Paired Differences				T	df	p-value
	Mean	Std. Deviation	95% Confidence Interval of the Difference				
			Lower	Upper			
Post Total - Pre Total	6.08	2.99	5.31	6.86	15.63	58	<0.001

The paired samples t-test compared the mean scores of the post-intervention and pre-intervention. The mean difference was 6.08 points, with a standard deviation of 2.99. The 95% confidence interval for the mean difference ranged from 5.31 to 6.86, and the t-value was 15.63 with 58 degrees of freedom, yielding a highly significant p-value (< 0.001). This provides strong statistical evidence that participants performed significantly better on the post-intervention than on the pre-intervention. The large t-statistic and narrow confidence interval further support the effectiveness of the intervention or instruction applied between the tests.

TABLE NO. 06: Comparison of Descriptive Statistics of Pre Intervention and Post Intervention Scores of Knowledge

Diagram Showing Individual Score Gain (Effectiveness)						
Mean%	Pre Test Knowledge	Post Test Knowledge	Difference	Pre Test Knowledge Score %	Post Test Knowledge Score %	Difference %
Average	15.29	21.37	6.08	61.16	85.48	24.32

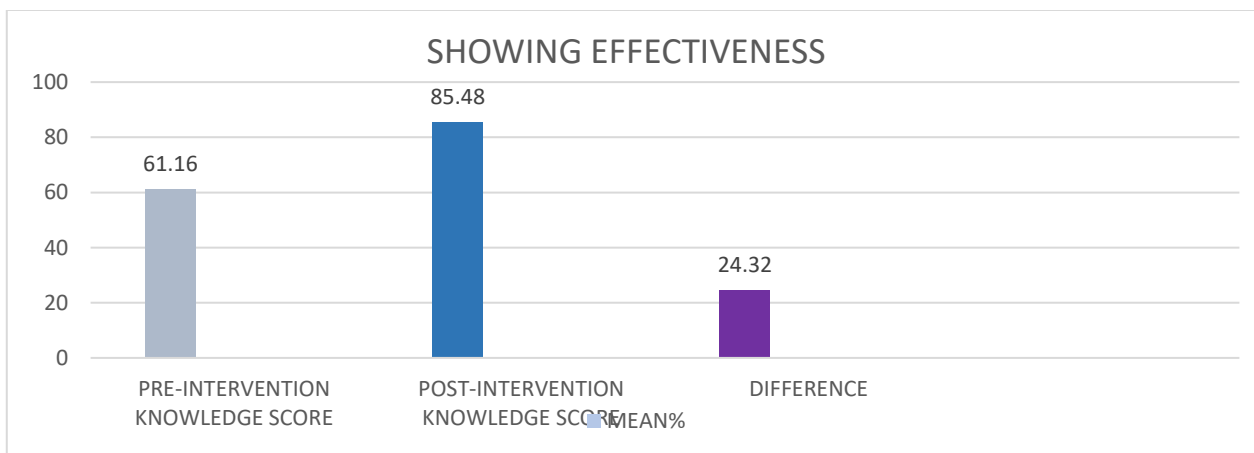


FIG 04: Bar Diagram Representing comparison of Pre-Intervention and Post-Intervention Level of Knowledge Representing Effectiveness

Discussion

One of the most frequent injuries, particularly in poor nations, is a burn, and proper evaluation is essential

for management, prognosis, and efficient treatment. As aspiring medical professionals, nursing students need to be sufficiently knowledgeable about burn assessment in order to avoid problems and guarantee prompt response.

In addition to having an adverse effect on patients' physical and mental well-being, burn injuries also put a significant strain on families and healthcare systems. Insufficient understanding of early burn assessment can result in poor management, raising the risk of morbidity and death. Thus, educational interventions such as Moulage Based Learning can be extremely important in helping nursing students improve their knowledge base and get ready for real-world clinical scenarios.

The purpose of this study was to assess the effectiveness of Moulage Based Learning in improving the understanding of Degrees of Burn assessment. The data was collected from 59 samples using Simple Random Sampling technique through a Self-Structured Questionnaire among B.Sc. Nursing 4th Semester students at Era College of Nursing, Lucknow.

Conclusion

The study finding revealed that the knowledge significantly improved following the implementation of Moulage Based Learning. In the pre-intervention knowledge, the majority of respondents 83% (49 participants) have moderate knowledge but in post-intervention knowledge majority of them 90% (53 participants) have adequate knowledge.

There is no significant association between the level of knowledge with selected demographic variables

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