



E-ISSN: 2663-2268  
P-ISSN: 2663-225X  
IJARMSN 2021; 3(2): 86-89  
Received: 14-05-2021  
Accepted: 18-06-2021

**Meghavarsha Rajen Lakra**  
Msc Nursing, Medical surgical  
Nursing, DES Smt Subhadra  
K Jindal College of Nursing,  
Pune, Maharashtra, India

**Shubhangi Malavade**  
Lecturer, Medical surgical  
Nursing, DES Smt Subhadra  
K Jindal College of Nursing,  
Pune, Maharashtra, India

**Corresponding Author:**  
**Meghavarsha Rajen Lakra**  
M.Sc Nursing, Medical  
Surgical Nursing, DES Smt.  
Subhadra K Jindal College of  
Nursing, Pune, Maharashtra,  
India

## Effectiveness of information booklet on knowledge regarding critical care nutrition among ICU Staff Nurses from selected Hospitals

Meghavarsha Rajen Lakra and Shubhangi Malavade

### Abstract

Proper nutrition is one of the most essential elements of being healthy and living a long life. People deal with food every day, and food has been a part of life since the beginning of civilization. Diet plays a major role in deciding how healthy we are and how well our body functions.<sup>1</sup> Critically ill patients require adequate nutritional support to meet energy requirements both during and after intensive care unit stay to protect against severe catabolism and prevent significant deconditioning. ICU patients often suffer from chronic critical illness causing an increase in energy expenditure, leading to proteolysis and related muscle loss.<sup>3</sup>

**Title:** Effectiveness of information booklet on knowledge regarding Critical Care Nutrition among ICU staff nurses from selected hospitals. A Quasi-experimental one group pre-test post-test research design was adopted for the study. Sixty ICU staff nurses were selected from different hospitals. Non-probability convenient sampling technique adopted. A structured questionnaire was prepared.

**Result:** In pre-test, the data revealed that 18 (30%) of the respondents had poor knowledge, around 41 (68.33%) respondents had average knowledge and only 1 (1.66%) respondent had good knowledge. In post-test, after administration of information booklet, the data showed that none of the respondents had poor knowledge, about 40 (66.66%) of respondents had average knowledge and 20 (33.33%) of total respondents had good knowledge regarding Critical Care Nutrition. There was difference in the pre-test mean score 12.35 (41.16%) and post-test mean score 18.93 (63.1%). The 'z' test shows significant difference between the pre-test and post-test knowledge score.

**Conclusion:** The information booklet was effective in providing knowledge regarding Critical Care Nutrition to ICU staff nurses.

**Keywords:** Effectiveness, knowledge, information booklet, critical care, nutrition

### Introduction

Our diet plays a major role in deciding how healthy we are and how well our body functions. Without proper diet, our body cannot carry out the functions it needs to perform.<sup>1</sup> Critical illness is life threatening and results from trauma, surgery, sepsis, shock or severe burns usually requiring Intensive Care. Critical illness is characterized by severe morbidity, often resulting in mortality. In this state, patients are susceptible to dysfunction of multiple organ systems including respiratory, cardiovascular, and digestive systems. Critically ill patients usually experience stress, inflammatory responses and hyper-metabolism. In critical illness states there is a higher ratio of catabolic compared to anabolic activities. During the catabolic state stored nutrients such as fats, protein and carbohydrates are depleted due to the body's additional demands for substrates for tissue repair. Additionally, accelerated lipolysis, insulin resistance, protein catabolism, and weight loss are readily observed during critical illness due to the increased metabolic changes that patient's undergo<sup>[2]</sup>.

Critically ill patients require adequate nutritional support to meet energy requirements both during and after intensive care unit (ICU) stay to protect against severe catabolism and prevent significant deconditioning. ICU patients often suffer from chronic critical illness causing an increase in energy expenditure, leading to proteolysis and related muscle loss. Careful supplementation and modulation of caloric and protein intake can avoid under-or overfeeding, both associated with poorer outcomes. After liberation from the ventilator or during non-invasive ventilation, oral intake should be carefully evaluated and, in case of severe dysphagia, should be avoided and replaced by enteral or parenteral nutrition. Upon transfer from the ICU to the ward, adequate nutrition remains essential for long-term

rehabilitation success and continued emphasis on sufficient nutritional supplementation in the ward is necessary to avoid a suboptimal nutritional state <sup>[3]</sup>.

### Need of the study

In the critically ill patients, the rate of catabolism is high. This in turn increases body protein loss, increased calorie expenditure, and no food intake will precipitate severe muscle atrophy and diminish adipose tissue stores. Nutrition authorities have long recommended providing generous amounts of protein and calories to critically ill patients, either intravenously or through feeding tubes, to counteract the catabolic state associated with this condition. In practice, however, patients in modern intensive care units are substantially underfed. Several large randomized clinical trials were recently carried out to determine the clinical implications of this situation. Contradicting decades of physiological, clinical, and observational data, the results of these trials have been claimed to justify the current practice of systematic underfeeding in the intensive care unit <sup>[4]</sup>.

During the clinical experience the investigator witnessed that nurses had less knowledge regarding Critical Care Nutrition that had serious impact on the critically ill patient's quality of life and wellbeing. The researcher designed an information booklet on nutritional requirements for the critically ill patients including points of nutritional assessment, enteral and parenteral nutrition, etc. Researcher identified and expressed the need as a significant problem and was interested to assess the effect of information booklet which is a simple and effective measure to increase the knowledge of ICU staff nurses, which emerged as her

present study.

### Objectives of the study

The study objective was to assess the pre-existing level of knowledge regarding critical care nutrition among ICU staff nurses from selected hospitals, to assess the post-test level of knowledge regarding critical care nutrition among ICU staff nurses from selected hospitals, to determine the effectiveness of information booklet on the level of knowledge regarding critical care nutrition among ICU staff nurses from selected hospitals, to find association between the pre-test levels of knowledge regarding critical care nutrition among ICU staff nurses from selected hospitals with the selected demographic variables.

### Research methodology

Adopted Research Approach is Quantitative research approach to assess the pre-existing level of knowledge regarding critical care nutrition among ICU staff nurses. Quasi-experimental One group pre-test and post-test research Design use to analysis the effect on the 60 staff nurses. Data collection done using

**Section A:** Structured questionnaire to assess demographic variable.

**Section B:** Structured questionnaire to assess the knowledge of ICU staff nurses regarding Critical Care Nutrition. Pilot study was conducted on 6 sample in order to test the present study tools for its validity, clarity, applicability, and it was found to be feasible.

### Result

**Table 1:** Description of samples (ICU staff nurses) based on their personal characteristics

n = 60				
Sr. No.	Demographic variable	Category	Frequency	Percentage
1.	Age in years	20-30 yrs	37	61.66%
		31-40 yrs	16	26.66%
		41 and above	7	11.66%
2.	Gender	Male	17	28.33%
		Female	43	71.66%
3.	Marital status	Married	35	58.33%
		Unmarried	23	38.33%
		Divorced	2	3.33%
		Widowed	0	0%
4.	Qualification	GNM	20	33.33%
		B.Sc.	23	38.33%
		P.B.B.Sc.	15	25%
		M.Sc. Nursing	2	3.33%
5.	Total years of experience	0-5 yrs	30	50%
		6-10 yrs	17	28.33%
		11-15 yrs	9	15%
		16 yrs and above	4	6.66%
6.	Years of experience in ICU	0-3 yrs	32	53.33%
		4-6 yrs	13	21.66%
		7-9 yrs	10	16.66%
		10 yrs and above	5	8.33%
7.	Attended any workshop/lecture on Critical Care Nutrition	Yes	27	45%
		No	33	55%
8.	Whether Enteral feeding protocol is available in hospital	Present	35	58.33%
		Absent	25	41.66%

The table shows the description of demographic data with regards to Age majority 61.66% is 20-3-years, Gender wise distribution shows 71.66% are female, Marital status depicts majority 58.33% are Married, Qualification shows 33.33%

are GNM 38.33% are BSC Nurses, majority 50% are having 0-5 years of experience, out of that majority 53.33% are having 0-3 years of experience in ICU, Majority 55% are not Attended any workshop/lecture on Critical Care

Nutrition and mostly 58.33% are agreed that enteral feeding protocol is available in hospital.

**Knowledge level of ICU staff nurses regarding critical care nutrition in pre-test and post test**

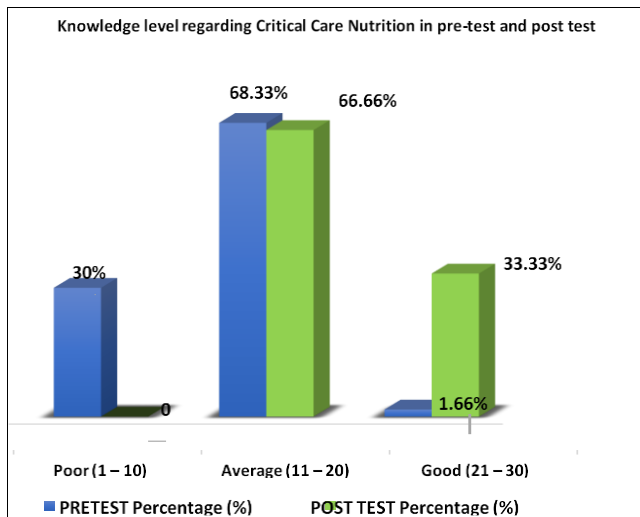
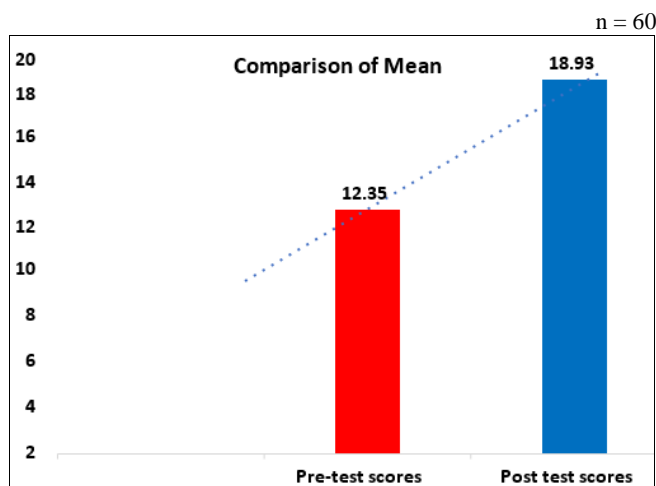


Table depicts that majority 18 (30%) of the respondents had poor knowledge, around 41 (68.33%) respondents had average knowledge and only 1 (1.66%) respondent had good knowledge regarding Critical Care Nutrition in the pre-test. After administration of information booklet, none of the respondents had poor knowledge, about 40 (66.66%) of respondents had average knowledge and 20 (33.33%) of total respondents had good knowledge regarding Critical Care Nutrition.

**Comparison of mean, SD and mean % of pre-test and post-test knowledge scores of staff nurses regarding Critical Care Nutrition**



**Fig 2:** Diagram showing comparison of pre-test and post- test mean scores

Comparison of pre-test and post-test scores shows the effectiveness of information booklet by (21.96%). As the post-test mean percentage, (63.1%) shows that the nurses had higher knowledge than the pre-test mean score (41.16%) indicates the effectiveness of information booklet.

**Discussion**

In the present study Chi Square values were calculated to find out the association between the pre-test knowledge score and demographic variables of nurses. It reveals that there was no significant association between the knowledge scores and the demographic variables i.e., Age, Gender, Marital Status, Qualification, Total years of Experience, Years of Experience in ICU, Attended any workshop/ lecture on critical care nutrition, Enteral feeding protocol available in hospital. The similar study was not identified, so the study conducted by Gaikwad S, Suresh J and Dr. Bhirange S (2021) resulted that there was no significant association between the knowledge scores and the demographic variables of age, gender education and work experience.<sup>55</sup> It can be concluded that there is no association between knowledge score and demographic variables of nurses, but there is a need of providing information to increase the knowledge level of staff nurses regarding Critical Care Nutrition.

**Conclusion**

Analysis and interpretation of data collected to evaluate the effectiveness of information booklet regarding Critical Care Nutrition reveals that on calculating the pre-test knowledge scores, the data indicated that 18 (30%) of the respondents had poor knowledge, around 41 (68.33%) respondents had average knowledge and only 1 (1.66%) respondent had good knowledge regarding Critical Care Nutrition. In post-test, after administration of information booklet, the data indicated that none of the respondents had poor knowledge, about 40 (66.66%) of respondents had average knowledge and 20 (33.33%) of total respondents had good knowledge regarding Critical Care Nutrition. Findings reveal that there is difference in the pre-test mean score 12.35 (41.16%) and post-test mean score 18.93 (63.1%). The ‘z’ test shows significant difference between the pre-test and post-test knowledge score. This interprets that there is significant effect of information booklet on knowledge regarding Critical Care Nutrition among ICU staff nurses.

The Chi Square test was done to find association between the pre-test knowledge score with the selected demographic variables. It showed that there is no significant association between the pre-test knowledge score with selected demographic variables.

**Limitations of the study**

- The sample was only 60, hence the findings cannot be generalized to all staff nurses working in ICU.
- Knowledge of the staff nurses was assessed only through using structured questionnaire.
- Other methods like observation checklist were not used.
- Practice of staff nurses in administration of Nutrition to critically ill patients was not used.

**Recommendations**

- A comparative study can be conducted with a control group.
- A similar study can be generalized using a large population of nursing students.
- A similar study can be generalized using a large population of nursing teaching faculty.
- A comparative study can be conducted to assess knowledge and practices of staff nurses from two hospitals.

- A similar study can be undertaken using different teaching strategies like structured teaching program, video-assisted teaching, etc. to educate the nurses regarding Critical Care Nutrition.
- Similar study can be conducted regarding Critical Care Nutrition knowledge among other staff nurses working in General ward.

**Funding:** There is no funding sources for this study.

**Conflict of interest:** The authors certify that they have no involvement in any organisation or entity with any financial or non-financial interest in the subject matter or materials discussed in this paper.

#### Acknowledgement

I most sincerely convey my deep sense of gratitude to my guide/organization for her/their remarkable guidance and academic support during the study.

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