



# “CONSTRUCT AND EVALUATE NURSING CARE PROTOCOL FOR MECHANICALLY VENTILATED PATIENTS IN CRITICAL CARE UNITS”

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**Abstract:** This study aims to construct and validate nursing care protocol for mechanically ventilated patients in critical care units

**Objective:** To construct nursing care protocol for mechanically ventilated patients in critical care units.

**Material and methods:** Mixed approach with The Delphi method is used to gather experts' data on a nursing care protocol for critically ill patients. The Delphi method is a systematic communication process in which judgments are made with the assistance of a panel of experts.

**Result:** In this present study, it was found that total 26 items were included in protocol under the 8 subheadings, the frequency and percentage of 26 items was 55-100%.

**Conclusion:** The study came to a conclusion with a draft nursing care protocol for mechanically ventilated patients that was constructed using Delphi technique. For critically ill patients admitted to intensive care units, the validated nursing care protocol for mechanically ventilated patients was extremely reliable.

**Keywords:** Nursing care protocol, mechanically ventilated patients, critical care unit

**Introduction:** Mechanical ventilation (MV) is a common reason for a patient's admission to an intensive care unit (ICU). The most common vital organ failure encountered in critically ill patients is airway protection and respiratory failure, which are the main reasons for Mechanical ventilation. Mechanical ventilation is required by 40–65 percent of ICU patients during their stay.

A nurse's clinical practice in the intensive care unit must involve the management of mechanically ventilated patients (ICU). Although there is more published work on the many nursing concerns of mechanically ventilated patient care in the ICU, it is still fragmented. The goal of this research is to compile a thorough overview of mechanically ventilated patient care in one location.

Mechanical ventilation (MV) is one of the most utilised techniques in the intensive care unit (ICU), but it can cause sequelae that can negatively influence the patient's health-related quality of life (HRQL). Nursing-sensitive outcomes (NSOs) can also influence the HRQL. Assessing the HRQL of mechanically ventilated patients admitted to an ICU and its relation to nurse-sensitive outcomes will give healthcare professionals with valuable information to improve patient care.

Following hygiene practices can help to lower the number of bacteria on a patient. For example, keeping bacteria out of oral secretions can help reduce the risk of VAP. This routine includes brushing the patient's teeth twice a day and applying oral moisturizers every two to four hours.<sup>4</sup> Physical mobility and movement, such as promptly extubating the patient, performing range-of-motion exercises, and moving and positioning the patient, will prevent a catabolic state and reduce the risk of VAP. Even though they are immobile, patients must move. Additionally, adequate nutrition may aid in the prevention of infections and illnesses. In the fight against VAP, an endotracheal tube with a suction lumen above the endotracheal cuff is also useful. Suction can be maintained indefinitely as a result of this.

VAP (ventilator-associated pneumonia) is one of the most prevalent nosocomial infections in ventilated patients in critical care units (ICUs), and it has been linked to an increase in ICU days, morbidity, and mortality. Preventing it is a top priority in every hospital. The majority of the interventions and preventative measures are commonplace in nursing. Care giver, manager, instructor, coordinator, and evaluator are just a few of the vital roles' nurses play in preventing VAP. The lack of information among nurses regarding infection prevention and appropriate nursing care may make it difficult for them to follow evidence-based guidelines for reducing ventilator-associated pneumonia.

Intensive care unit patients typically receive inadequate nourishment, despite the fact that healthy eating has been demonstrated to play a crucial impact in patient outcomes. Furthermore, critically ill patients who are mechanically ventilated on a daily basis receive significantly less nutrition, according to research. Inadequate nutrition has been linked to a weakened immune system, increased infection susceptibility, slow wound healing, and neuromuscular dysfunction. These variables contribute to a long-term reliance on ventilators, a longer length of stay, and higher morbidity and mortality.

### Material and methods:

- **Research approach:** The Delphi approach is now being utilised to collect information from experts in order to construct a nursing care Protocol for mechanically ventilated patients in critical care units. In its original form, the Delphi method was a structured communication approach or process developed as a methodical, participatory forecasting method that relied on a panel of experts to generate forecasts. eight sets of questions are posed to the experts. As a result, experts are being urged to revise their opinions in light of the new information.
- **Sample size:** To select and list the items for the nursing care protocol, a group of 15 experts participated in this study.

### Identification and Selection of Delphi Experts

- **Criteria to identification of Delphi experts**

To conduct the current study, nonprobability Convenience sampling was used to identify and choose specialists from a variety of hospitals, with the results being published online. The following criteria were used to choose the Delphi specialists for the Delphi project.

- Registered Nurse with 5 year experience in Critical care unit
- Critical Care Consultants
- Nurse practitioner with minimum 1 year experience
- Willing to take part in all three rounds
- Accessible during the research project

## Selection of Delphi experts

Nurse practitioners, staff nurses, and nurse managers are among the ten registered Critical care unit nurses. The study's specialists were agreed upon by three nursing superintendents and two Critical care unit consultants. The researcher contacted each expert and got informed consent to participate in the study by explaining the objective and process to them.

### Tool 1: Open ended questionnaire

The researcher structured the questionnaire into two sections to get the opinions of Delphi experts.

#### Section A: Demographic data with the following five items

1. Name of the expert

2. Designation

3. Qualification

4. Area of experience

5. Years of experience

#### Section B: Contains eight open ended questions which included

1. Assessment

2. Emergency trolley

3. Ventilator care

4. Suctioning

5. Hygiene care

6. Positioning

7. Monitoring

8. Medication

The Delphi experts must fill in the blanks under the corresponding questions with their recommendations by stating the topics that should be included in the nursing care protocol.

## Result

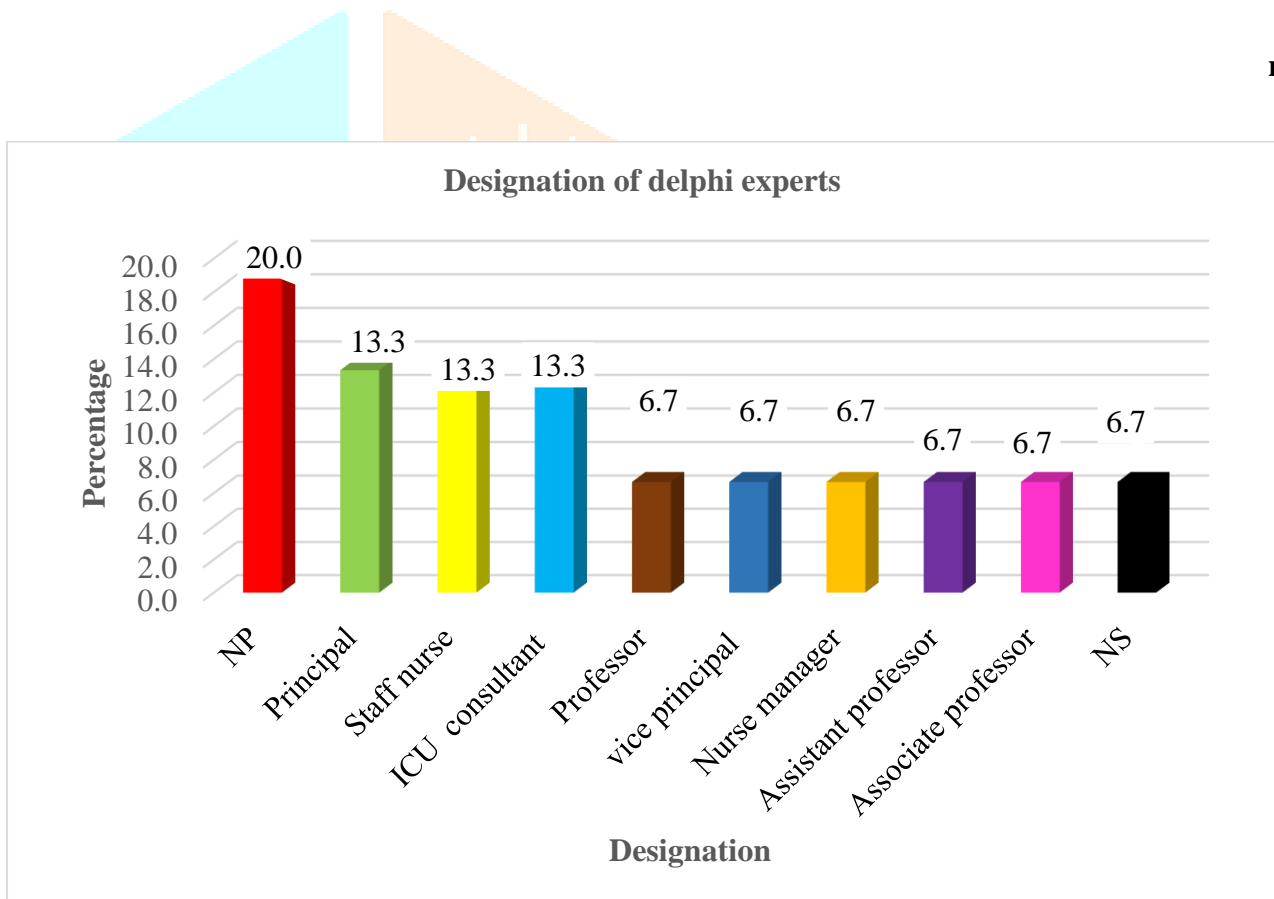
**Analysis of the study is organized and presented in the following sections:**

**Section 1** Distribution of demographic variables of Delphi experts

**Section 2:** Distribution of response in round one

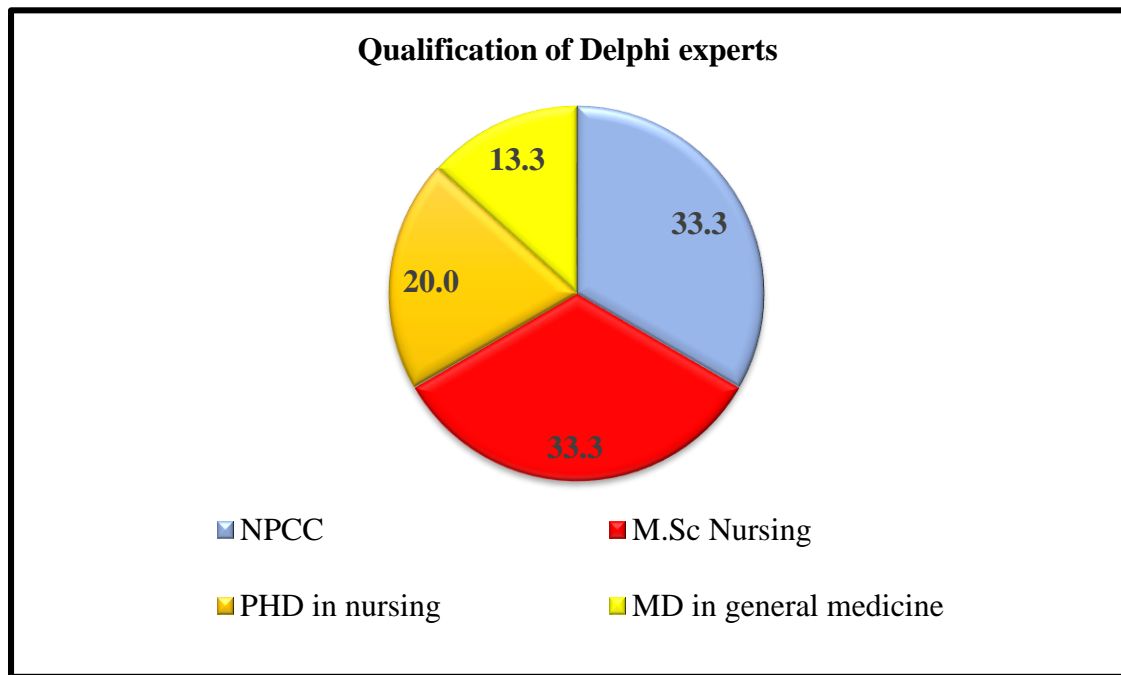
**Section 1** Distribution of demographic variables of Delphi experts

n=15



**Figure 1: Designation of Delphi experts**

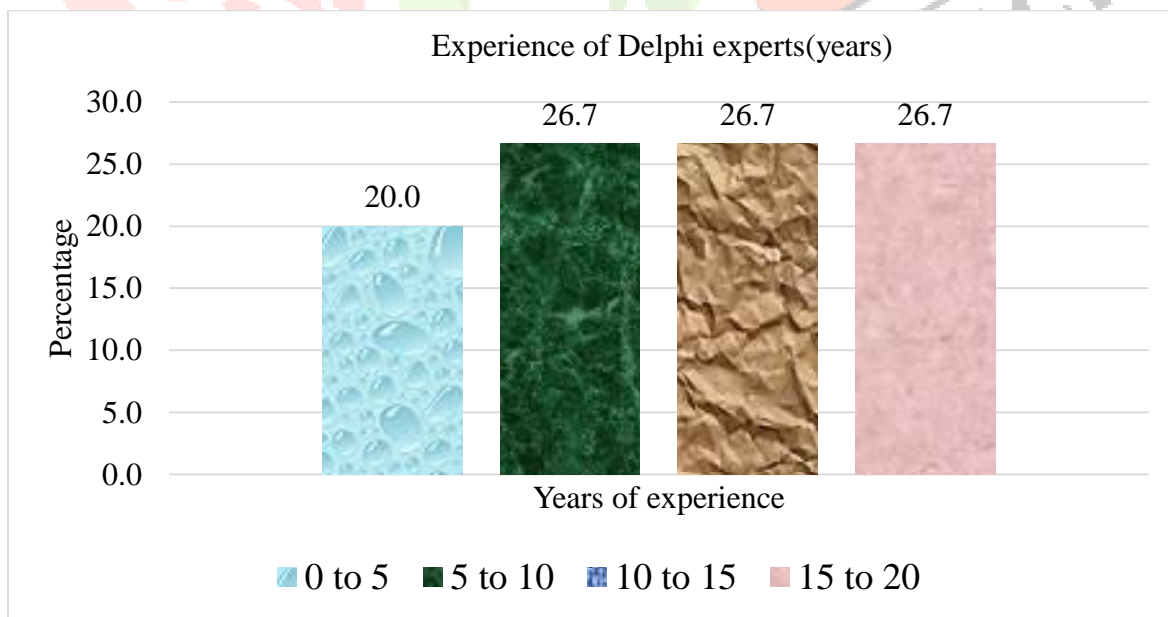
Figure 1 illustrates that out of 15 expert's majority experts were (20.0 %) nurse practitioner, 13.3% were principals of various college of nursing, staff nurse and ICU consultant, and 6.7 % remaining were vice principal, professor, assistant professor, associate professor, nurse manager and nursing superintendent.



**Figure 2: Qualification of Delphi experts**

Figure 2 illustrate that out of 15 experts 33.3% were nurse practitioner and M.Sc. Nursing, 20 % were PHD in nursing and 13.3% were MD in general medicine.

n=15



**Figure 3: Experience of Delphi experts(years)**

Figure 3 illustrate that out of 15 experts, 20 % had 0-5 years of experience and 26.7 % had 5-10, 10 to 15 and 15-20 years of experience.

**Section 2 Distribution of response in round one**

Table 1: Distribution of items based on responses of experts from round one

n=15

<b>Item No.</b>	<b>Item to be included in Protocol</b>	<b>Frequency of experts</b>	<b>Percentage of expert</b>
<b>I) Assessment</b>			
1	Vital signs to be checked hourly	15	100.0%
2	Implement DVT prophylaxis, peptic ulcer disease prophylaxis	15	100.0%
3	Observe and apply sedation vacation	15	100.0%
4	Maintain electrolyte balance	12	80.0%
5	Follow the lab values and any sign and symptoms of presence of infection	12	80.0 %
6	Check for cuff pressure with manometer	12	80.0%
<b>II) Emergency trolley</b>			
1	keep crash cart ready with all equipment's as per requirement along with intubation trolley.	13	86.7%
<b>III) Ventilator care</b>			
1	Check for ventilator mode, parameter, values and functioning of alarms.	13	86.7%
2	Safe guard the ET Tube with plaster	15	100.0%
<b>IV) Suctioning</b>			
1	Strict hand hygiene to be done for airway management.	12	80.0%
2	Check for airway patency.	9	60.0%
3	Perform sterile suctioning as per requirement.	13	86.7%
4	Tracheostomy care to be given every 8 hourly wherein its required with aseptic techniques.	10	66.7%
5	Watch for any signs of aspiration.	9	60.0%
6	Avoid tight adherence of tubes on the lips.	7	46.7%
7	Check ET tube for any obstruction, occlusion or any haematoma.	15	100.0%
8	Aspiration of subglottic secretions.	15	100.0%

<b>V) Hygiene care/personal cleanliness</b>			
1	Eye care, Oral care, Foley's catheter care, Back care. to be provided in each shift.	11	73.3%
2	Provide sponging once in 24 hours.	12	80.0%
<b>VI) Positioning</b>			
1	Provide semi recumbent position at 35 <sup>0</sup> to 45 <sup>0</sup> .	15	100.0%
2	2. Position to be changed every 2 hourly.	15	100.0%
<b>VII) Monitoring</b>			
1	Monitor ABGs Samples and interpret accurately and maintain Acid-Base balance.	12	80.0%
2	Ensure accurate placement of ET tube on X ray	11	73.3%
<b>VIII) Medication</b>			
1	Administer medication as per prescription and prophylactic antibiotics.	9	60.0%
2	Provide Nebulization (if indicated).	8	53.3%
3	Maintain diet of patient via NG tube as per need of the patient.	9	60.0%

Table 1 shows that in assessment, 15 (100%) experts suggested Vital signs to be checked hourly, Implement DVT prophylaxis, peptic ulcer disease prophylaxis and Observe and apply sedation vacation, 12(80%) Maintain electrolyte balance, Follow the lab values and any sign and symptoms of presence of infection and Check for cuff pressure with manometer, in emergency trolley 13 (86.7 %), in ventilator care Check for ventilator mode, parameter, values and functioning of alarms 13 (86.7 %) and Safe guard the ET Tube with plaster 15 (100%), in suctioning Check ET tube for any obstruction, occlusion or any haematoma and Aspiration of subglottic secretions 15 (100.0%), Perform sterile suctioning as per requirement 13 (86.7%), Strict hand hygiene to be done for airway management 12 (80.0%) Tracheostomy care to be given every 8 hourly wherein its required with aseptic techniques 10 (66.7%), Check for airway patency and Watch for any signs of aspiration 9 (60.0%), Avoid tight adherence of tubes on the lips 7 (46.7%), in medication administer medication as per prescription and prophylactic antibiotics and maintain diet of patient via NG tube as per need of the patient 9 (60.0%),provide Nebulization (if indicated) 8 (53.3%).



## Conclusion

The purpose of this study was to construct a critical-care nursing protocol. Experts proposed a total of 26 things.

## Acknowledgement:

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