

NURSING DIAGNOSES IN PATIENTS HAVING MECHANICAL VENTILATION SUPPORT IN A RESPIRATORY INTENSIVE CARE UNIT IN TURKEY

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Introduction: Critical care units provide continuous and expert care for critically ill patients. Mechanical ventilation which is used for treatment in respiratory insufficiency is a common treatment modality among these patients (4,5). In spite of numerous benefits of mechanical ventilation, it can cause major distress resulting from fear, thirst, sleeplessness, discomfort, agitation, immobility, confusion, dyspnea, communication difficulties and inability to relax (7).

Critical care nurses must know how to intervene quickly to help critically ill patients receiving mechanical ventilation support (8). Suitable diagnosing of these needs is critical to achieving quality nursing care. Diagnosing of individuals' reactions is a complex process including interpersonal, technical and intellectual processes. Therefore, nurses must plan holistic care for these patients in a organized and scientific manner by using the Nursing Process (1, 6).

Aim: This study has been conducted to find out the nursing diagnoses in patients having mechanical ventilation support in a respiratory intensive care unit.

Method: This descriptive observational study, was conducted with 51 evaluations of critically ill adult patients undergoing invasive and noninvasive mechanical ventilation. Data collection was based on Gordon's 11 Functional Health Patterns and from these problems diagnoses were developed according to North American Nursing Diagnosis Association (NANDA) Taxonomy II (1, 2). Data were collected in a chest diseases hospital from March 1 to August 20, 2008. Patients over 18 years and under mechanical ventilation were included in study. Data were collected three ways: a) observation of each patient by the researchers, b) patient charts, and c) interviews with clinical nurses. Reliability of data collection was strengthened by including only the data that were found through at least two of the three data collection methods. Data analysis consisted of totals and percentages. Approval of the study was obtained from the relevant committees in the university and participating hospital.

Findings: There were 40 men (78.4%) and 11 women (21.6%) in the study. The mean age of the sample was 70.19 years. Length of ICU stay ranged from 1 to 36 days with a median of 15 days and the time of mechanical ventilation therapy ranged from 1 to 27 days with a median of 12.5 days. There were 21 patients (41.2%) with an endotracheal tube, and 30 (58.8%) with a tracheostomy. Two most common diagnoses were chronic obstructive lung disease (92.15%), and pneumonia (31.37%). All patients were taking pulmonary drugs, 69% were receiving cardiovascular drugs, and 55% were under sedation. Eighteen patients were physically restrained. Some nursing diagnoses couldn't be evaluated because some patients were unconscious, or under heavy sedation, or had dementia.

The problems using Gordon's Functional Health patterns are listed in Table 1. The most frequent problems were with communication, eating and sleeplessness. (Table 1).

Table I. The Distribution of The Most Problems of The Patients

PROBLEMS	VALUE (n:51)	%
Communications problems	51	100
Eating difficulty	49	96.1
Sleeplessness	48	94.1
Respiration problems	39	76.5
Problems about body mass index	39	76.5
Infection	24	47.1
Oral problems	24	47.1
Deficits about daily life activities	20	39.2
Anxiety	10	19.6
Pain	9	17.6
Edema	9	17.6
Bed sores	8	15.7

Patients had many nursing diagnoses. Most of those were related to activity-exercise and safety. Nineteen subgroups of nursing diagnoses about safety-

protection, and 15 subgroups about activity exercise were seen at different rates in the patients. Nineteen safety protection diagnoses and 15 activity and exercise diagnoses were identified (**Figure 1**).

Figure 1. The Distribution of Frequency of Nursing Diagnoses' Categories in The Sample

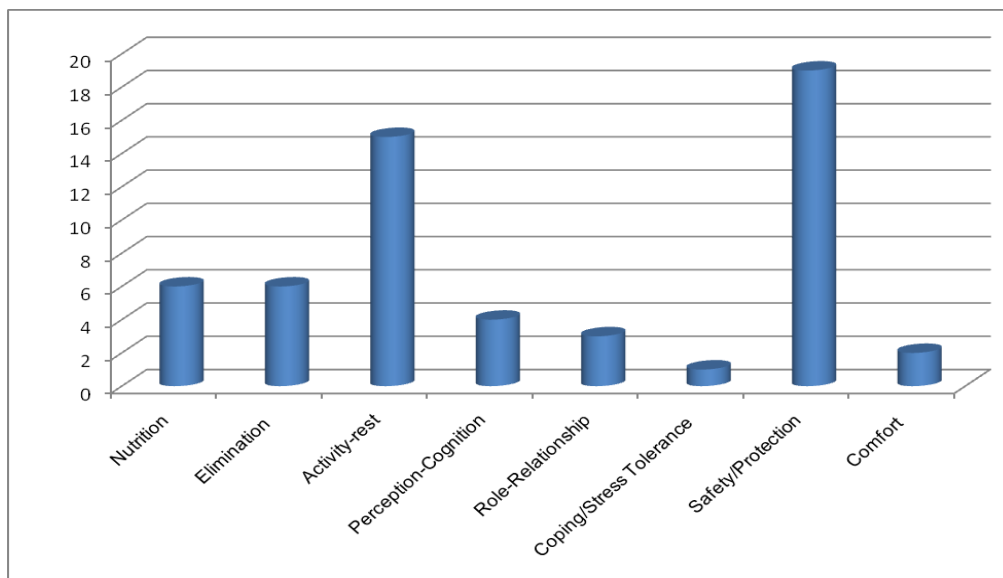


Table 2 lists all the diagnoses found in the survey. As can be noted there were 41 diagnoses in 8 categories overall. Of these 20 were found in all patients. The incidence of other diagnoses ranged from 9.8% to 96.1%. The categories with the highest incidence were Safety/Protection and Activity/Rest. The categories with the lowest incidence were Comfort and Role Relations.

Table 2. The Distrubution of Nursing Diagnoses Seen in Patients According to The Classification

Nursing Diagnoses	N (51)	Percentiles (%)
Nutrition		
Impaired swallowing	43	84.3
Imbalanced Nutrition: Less/more than body requirements	38	74.5
Risk for deficient fluid volume	25	49.0
Excess fluid volume	14	27.5
Elimination		
Impaired urinary elimination	51	100.0
Impaired gas exchange	48	94.1

Diarrhea	16	31.4
Constipation	5	9.8
Activity/Rest		
Impaired mobility (walking, wheelchair, bed, etc.)	51	100.0
Risk for activity intolerance	51	100.0
Activity intolerance	51	100.0
Energy field disturbance	51	100.0
Risk, impaired spontaneous ventilation	51	100.0
Impaired spontaneous ventilation	51	100.0
Ineffective breathing patterns	51	100.0
Disturbed sleep patterns	51	100.0
Impaired physical mobility (activity and exercise)	49	96.1
Ineffective tissue perfusion	29	56.9
Decreased cardiac output	6	11.8
Perception/Cognition		
Impaired verbal communication	51	100.0
Readiness for enhance communication	5	9.8
Disturbed sensory perception	5	9.8
Coping/Stress tolerance		
Deficient diversional activity	51	100.0
Anxiety	7	13.7
Ineffective coping	7	13.7
Safety/Protection		
Risk for aspiration	51	100.0
Ineffective airway clearance	51	100.0
Risk for infection	51	100.0
Risk for injury	51	100.0
Risk for peripheral neurovascular dysfunction	51	100.0
Energy field disturbance	51	100.0
Ineffective protection	51	100.0
Ineffective airway clearance	45	88.2
Risk for falls	45	88.2
Risk for trauma	44	86.3
Risk for injury	44	86.3
Ineffective protection	43	84.3
Risk for infection transmission	37	72.5
Comfort		
Acute pain	9	17.6
Role relations		
Ineffective role performance	51	100.0
Impaired social interaction	51	100.0

Conclusion: The study has shown that the patients receiving mechanical ventilatory support had multiple nursing diagnoses in 8 categories, indicating that this is a complex nursing situation. Future analysis of these findings can provide direction for the development of nursing interventions that address the many needs of this population to support their recovery.

Standard and evidence-based nursing evaluation and diagnosing guidelines specific to ICU patients must be prepared and used effectively in all ICUs. Furthermore, comprehensive assessment and interventions that address all diagnostic categories will lead to more successful outcomes.

REFERENCES

1. Canero TR, Carvalho R, Galdeano LE, Nursing diagnoses for the immediate postoperative period of patients submitted to liver transplantation, Einstein. 2004; 2(2):100-104
2. Carpenito LJ - Translation: Erdemir F (1999) Handbook of Nursing Diagnosis. Nobel Tıp kitabevleri.
3. Carpenito LJ (2004). Handbook of nursing diagnosis.10th Edition. Lippinott Williams & Wilkins.
4. Couchmana BA, Wetzig SM, Coyer FM, Wheeler MK (2007). Nursing care of the mechanically ventilated patient: What does the evidence say? Part one. Intensive and Critical Care Nursing 23, 4-14.
5. Coyer FM, Wheeler MK, Wetzig SM, Couchman BA (2007). Nursing care of the mechanically ventilated patient: What does the evidence say? Part two. Intensive and Critical Care Nursing 23, 71-80.
6. de Fátima Lucena A, de Barros AL (2006). Nursing Diagnoses in a Brazilian Intensive Care Unit. International Journal of Nursing Terminologies and Classifications 17 (3),139-146.
7. Samuelson KAM, LundbergD, Fridlund B(2007) Stressful Experiences in relation to in depth of sedation in mechanically ventilated patients. Nursing inm critical care, 12(2): 93-104.
8. Zeitoun SS, Bottura Leite de Barros AL, Marlene Michel JL, Ca´ssia de Bettencourt AR. (2007) Clinical validation of the signs and symptoms and the nature of the respiratory nursing diagnoses in patients under invasive mechanical ventilation, Journal of Clinical Nursing 16, 1417–1426.