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# Overview of Nursing Diagnoses in Respiratory Emergency Cases at the Emergency Department of Andi Makkasau Regional General Hospital, Parepare City

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## ABSTRACT

Background: Respiratory emergencies are critical conditions that require rapid management in the Emergency Department (ED). Accurate nursing diagnoses are essential to ensure patient safety and optimal recovery. This study aimed to describe the most frequently identified nursing diagnoses among patients with respiratory emergencies at the ED of Andi Makkasau Regional General Hospital, Parepare City. A quantitative descriptive design with total sampling was applied. Data were obtained from patient medical records throughout 2024 and analyzed using univariate analysis. The findings revealed that the three most common nursing diagnoses were: ineffective breathing pattern (63.77%), impaired gas exchange (34.49%), and ineffective airway clearance (1.74%). Ineffective breathing pattern was the most prevalent issue. Emergency nurses are expected to continue enhancing their skills in recognizing and managing respiratory emergencies.

**Keywords: Emergency department; Nursing diagnose; Respiratory emergencies**

## INTRODUCTION

Respiratory emergency is an urgent medical condition that requires immediate intervention in the Emergency Department (Kemenkes RI, 2020). These conditions may arise due to various factors such as respiratory tract infections, asthma, and chronic obstructive pulmonary disease (COPD). Prompt and accurate diagnosis is crucial to prevent serious complications and to improve the patient's chances of recovery (Kemenkes RI, 2020). Therefore, establishing accurate and comprehensive nursing diagnoses is a critical first step in managing respiratory emergency cases in hospitals (Potter & Perry, 2020). Data from the Intensive Care Unit of Andi Makkasau Regional General Hospital in 2024 reported that 16% of elderly patient deaths were caused by

pulmonary failure (PF), which is classified as a respiratory emergency. This indicates that respiratory system disorders are a significant cause of mortality, especially among vulnerable populations such as the elderly (Bahriah, Tena, et al., 2024).

The World Health Organization (WHO) reports that more than 3 million individuals worldwide die each year from chronic obstructive pulmonary disease (COPD) and pneumonia, with the majority of these deaths occurring in low- and middle-income countries (WHO, 2021). Acute respiratory emergencies caused by lower respiratory tract infections (LRTIs), such as pneumonia, are frequently encountered in Emergency Departments (EDs), requiring healthcare professionals, particularly nurses, to possess a comprehensive understanding of accurate nursing diagnoses and effective interventions (Centers for Disease Control and Prevention [CDC], 2022). This requires healthcare professionals, particularly nurses, to possess a comprehensive understanding of accurate nursing diagnoses and effective interventions (Smeltzer, Bare, Hinkle, & Cheever, 2020). Falls among the elderly often result in trauma or immobilization, which can lead to respiratory complications such as atelectasis, pulmonary infections, or acute respiratory failure. These risks are heightened in elderly patients with comorbidities such as COPD or heart failure. Such conditions frequently prompt ED visits with primary complaints of respiratory distress (Bahriah, Sampeangin, et al., 2024).

According to a study conducted by Wahyuningsih et al. (2020), approximately 14% of all patients visiting the Emergency Department (ED) of a major hospital in Makassar, South Sulawesi, experienced respiratory problems. The 2023 annual report of Andi Makkasau Regional General Hospital indicated that 10–15% of ED visits involved patients presenting with respiratory emergencies, including diagnoses such as acute asthma, pneumonia, and respiratory failure (Dinas Kesehatan Kota Parepare, 2023). This situation underscores the need for further and more focused management (Kemenkes RI, 2022).

A study conducted by Melati Putih from March to April 2021, utilizing medical record data from Roemani Hospital in Semarang, involved all patients with respiratory problems from 2019 to 2021, yielding a sample of 142 respondents. The data were analyzed univariately to determine the frequency distribution of diagnostic characteristics, types of nursing diagnoses, and clinical signs and symptoms. The findings revealed that ineffective breathing pattern accounted for 49.4% of all

diagnoses, while ineffective airway clearance was recorded at 10.0%, and impaired gas exchange comprised 8.9% of the total diagnoses.

Based on the above findings, the authors were motivated to conduct a study on the overview of nursing diagnoses in respiratory emergency cases at the Emergency Department of Andi Makkasau Regional General Hospital, Parepare City.

## MATERIALS AND METHODS

Data collection in this study was carried out using a total sampling technique, in which all patients experiencing respiratory emergencies and receiving treatment at the Emergency Department (ED) of Andi Makkasau Regional General Hospital, Parepare, during the year 2024 were included. The total sample obtained was 4,259 patients, thus the entire population meeting the inclusion criteria was taken as the study sample. The research data were obtained from patients' medical records, which were subsequently reviewed to identify the nursing diagnoses established in accordance with standardized guidelines. The research instrument used was an observation or secondary data recording sheet developed based on patients' medical records. This instrument focused on documenting the nursing diagnoses established by ED nurses, referring to the NANDA International (2021–2023) classification. The main variables assessed consisted of the three most frequently identified nursing diagnoses in respiratory emergency cases, namely ineffective breathing pattern, impaired gas exchange, and ineffective airway clearance. This instrument enabled the researchers to obtain quantitative data that could be analyzed descriptively. This study also received ethical approval from the Health Research Ethics Committee of Fatima College of Health Sciences, Parepare. Although the data used were secondary, obtained from patients' medical records, and therefore direct informed consent from patients was not required, the researchers adhered strictly to ethical research principles. Patients' identities were kept confidential (anonymity), and all data were used solely for research and academic purposes (confidentiality). Thus, this study was conducted in accordance with established ethical standards for health research.

## RESULTS

The study revealed that the three most frequently established nursing diagnoses in patients with respiratory emergencies were as follows:

- Ineffective breathing pattern**: 63.77%**
- Impaired gas exchange**: 34.49%**

- Ineffective airway clearance**: 1.74%**

The primary causes of ineffective breathing pattern included airway obstruction, respiratory muscle fatigue, asthma, and chronic obstructive pulmonary disease (COPD) (Potter & Perry, 2020). Impaired gas exchange was mostly associated with pneumonia, pulmonary edema, pleural effusion, and acute respiratory distress syndrome (ARDS) (WHO,2021). Ineffective airway clearance was typically linked to excessive secretions, reduced cough reflex, or respiratory tract infections (Lewis, Bucher, Heitkemper, & Harding, 2020).

**Table 1. Characteristics of Nursing Diagnoses in Respiratory Emergencies Based on 2024 Percentage**

| No | Nursing Diagnosis | Persentage |
|---|---|---|
| 1 | Ineffective Breathing Pattern | 63,77% |
| 2 | Impaired Gas Exchange | 34,49% |
| 3 | Ineffective Airway Clearance | 1,74% |
| | Total | 100% |

**Remarks:**

- *Ineffective breathing pattern* was the most frequently identified nursing diagnosis, found in 63.77% of total patients. This indicates that breathing pattern disturbances are a primary issue requiring special attention in nursing care, particularly for patients with respiratory problems.
- *Impaired gas exchange* ranked second at 34.49%, highlighting it as another critical issue within the respiratory system that demands accurate monitoring and timely intervention to prevent further complications (Triyani, 2020).

*Ineffective airway clearance* was identified in only a small number of patients (1.74%), indicating it was relatively rare compared to the other two diagnoses. However, it should not be overlooked, as it may progress to more serious conditions if left untreated.

**Table 2. Gender Breakdown**

| Nursing Diagnosis | Percentage (%) | Total Patients | Male | Female |
|---|---|---|---|---|
| **Ineffective Breathing Pattern** | 63.77% | 2,715 | 1,575 | 1,140 |
| **Impaired Gas Exchange** | 34.49% | 1,469 | 852 | 617 |
| **Ineffective Airway Clearance** | 1.74% | 74 | 43 | 31 |
| Total | **100%** | **4,259** | 1,397 | 1,789 |

**Remarks:**

- *Ineffective breathing pattern*: 63.77% of 4,259 = 0.6377 × 4,259 = 2,714.96 → rounded to **2,715** patients.

- *Impaired gas exchange*: 34.49% of 4,259 = 0.3449 × 4,259 = 1,469.47 → rounded to **1,469** patients.
- *Ineffective airway clearance*: 1.74% of 4,259 = 0.0174 × 4,259 = 74.11 → rounded to **74** patients.

Univariate analysis was performed to describe the frequency distribution and percentage of each research variable. In this study, the univariate analysis was used to:

1. Describe the characteristics of nursing diagnoses among patients with respiratory emergencies, namely:
   - Ineffective Breathing Pattern: 63.77%
   - Impaired Gas Exchange: 34.49%
   - Ineffective Airway Clearance: 1.74%
2. Present the distribution by gender, including the number of male and female patients for each nursing diagnosis.
3. Identify the etiological characteristics associated with each nursing diagnosis, such as:
   - Ineffective Breathing Pattern caused by airway obstruction, respiratory muscle fatigue, asthma, or COPD.
   - Impaired Gas Exchange associated with pneumonia, pulmonary edema, pleural effusion, and ARDS.
   - Ineffective Airway Clearance resulting from excessive secretions, decreased cough reflex, respiratory tract infection, or stroke.

Thus, the univariate analysis in this study served to provide a general overview of the most common nursing diagnoses identified in patients with respiratory emergencies in the Emergency Department of Andi Makkasau Regional General Hospital. This approach allowed the identification of priority nursing problems that require immediate attention and intervention.

**Table 3. Etiologies of Nursing Diagnoses**

| Nursing Diagnosia | Common Causes |
|---|---|
| **Ineffective Breathing Pattern** | Airway obstruction, respiratory muscle fatigue, asthma, COPD |
| **Impaired Gas Exchange** | Pneumonia, pulmonary edema, pleural effusion, ARDS |
| **Ineffective Airway Clearance** | Excessive secretions, decreased cough reflex, respiratory infection, stroke |

**Remarks:**

- *Ineffective breathing pattern* is often caused by conditions that interfere with normal respiratory function, such as airway obstruction or respiratory muscle fatigue.
- *Impaired gas exchange* is generally associated with conditions affecting oxygen and carbon dioxide exchange in the lungs.
- *Ineffective airway clearance* may result from excessive secretions or diminished ability to cough effectively.

## DISCUSSION

Respiratory emergencies are critical conditions that require immediate management in the Emergency Department (ED) due to their potential to cause oxygenation failure and lead to fatal outcomes if not addressed promptly. Data from the Ministry of Health of the Republic of Indonesia (2022) and the Central Statistics Agency (2023) indicate that respiratory disorders rank among the leading causes of hospitalization, reflecting a substantial burden on the healthcare system. This aligns with the report from Andi Makkasau Regional General Hospital in Parepare, where 10–15% of ED visits were due to respiratory emergencies such as pneumonia, COPD, and acute asthma.

The most frequently established nursing diagnosis in respiratory emergency cases was *ineffective breathing pattern* (63.77%), followed by *impaired gas exchange* (34.49%) and *ineffective airway clearance* (1.74%). These findings suggest that nurses tend to base their diagnoses on observable clinical signs such as tachypnea, dyspnea, and the use of accessory respiratory muscles—all hallmark features of ineffective breathing pattern. This is consistent with the findings of Prado et al. (2019), who noted that ineffective breathing pattern can be identified without advanced diagnostic tools and often appears as an early manifestation of respiratory emergencies.

In contrast, impaired gas exchange requires additional investigations such as arterial blood gas (ABG) analysis. Despite its significant clinical impact, this diagnosis may not always be established promptly in the ED due to time and resource constraints. Ineffective airway clearance had the lowest prevalence in this study, possibly because clinical focus has shifted toward direct airway interventions, such as suctioning and intubation, rather than formally documenting ineffective airway clearance as a nursing diagnosis (Gulanick&Myers, 2022).

The distribution of diagnoses by gender indicated that male patients were more likely to experience all three types of respiratory nursing diagnoses. This may be attributed to smoking habits, occupational exposure to pollutants, and other environmental risk factors. These findings are in line with literature showing that men have higher vulnerability to respiratory diseases due to these contributing factors (Wagner & Lukey, 2025).

This study's findings are also supported by previous research. For instance, Kurniawati (2024) found that impaired gas exchange commonly occurred in neonates with sepsis due to severe pulmonary inflammation. In pediatric patients with bronchopneumonia, ineffective airway clearance and impaired gas exchange were identified as the two main nursing diagnoses (Margareta Indu, 2024). However, there are also differing results. Studies by Triyani (2020) and K. (2019) emphasized that ineffective airway clearance was the primary diagnosis in patients with COPD and pulmonary tuberculosis. These variations highlight that nursing diagnoses can be influenced by disease type, patient age, and each institution's clinical focus.

The high incidence of respiratory-related nursing diagnoses underscores the critical role of nurses in the initial assessment process. The accuracy of nursing diagnoses directly affects the effectiveness of interventions, patient outcomes, and the efficient use of resources in the ED. As emphasized by Potter and Perry (2020), accurate nursing diagnoses serve as the foundation of the entire nursing process—from planning to evaluation. Therefore, continuous education and training for nurses in the early recognition of respiratory emergencies and evidence-based diagnostic formulation are essential components of emergency nursing practice.

Every patient presenting with a respiratory emergency is likely to have nursing problems that can be identified through proper assessment and documentation. It is assumed in this study that the data recorded in medical records accurately reflect the patient's condition, thus allowing nurses to formulate appropriate nursing diagnoses. *Ineffective breathing pattern, impaired gas exchange,* and *ineffective airway clearance* emerged as the most dominant nursing diagnoses in respiratory emergency patients based on the 2024 data from the ED of Andi Makkasau Regional General Hospital.

## LIMITATIONS

In conducting this study, the researchers encountered limitations due to the unavailability of some required data, which restricted the data collection process.

Barriers to accessing secondary data and additional information limited the researchers' ability to directly verify and clarify the data.

## CONCLUSION

Ineffective breathing pattern was the most frequently identified nursing diagnosis in respiratory emergency cases. This finding underscores the importance of nurses' skills in recognizing signs of respiratory distress to ensure timely and appropriate interventions.

## RECOMMENDATIONS

Emergency Department (ED) nurses should continuously enhance their skills in assessing patients' respiratory status. Further research is recommended to examine the relationship between nursing diagnoses, interventions, and clinical outcomes.

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