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Nasal Cannula Oxygen Therapy and Changes in Respiratory Status: A Descriptive Case Study of Two Patients

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ABSTRACT
Ineffective breathing patterns in pediatric patients require systematic assessment and timely nursing intervention to monitor respiratory function and oxygenation. Although conventional nasal-cannula oxygen therapy is used in clinical practice, detailed descriptions of its implementation within the nursing-care process across different clinical presentations remain valuable. This study describes the implementation of nasal-cannula oxygen therapy and changes in selected respiratory indicators among two patients with an ineffective breathing pattern. A descriptive case-study design was employed in the Dahlia ward of RS TK II Pelamonia Makassar, Indonesia. Two patients, aged 2 and 17 years, who were already receiving physician-prescribed oxygen therapy were observed over three days. Data were collected through family interviews, direct observation, physical examination, vital-sign measurements, and pulse oximetry, and were analyzed descriptively. Both patients showed improvements in respiratory status during the observation period. In the 2-year-old patient with bronchopneumonia, oxygen saturation (SpO_2) increased from 90% to 99%, while respiratory rate decreased from 32 to 28 breaths/min. In the 17-year-old patient with abdominal colic and a reported history of seizures, SpO_2 increased from a recorded 92% to 99%, while respiratory rate decreased from 30 to 24 breaths/min. Both cases also showed reduced dyspnea, more regular breathing, and greater comfort. The study provides a context-specific account of nursing assessment, intervention, monitoring, and evaluation across two distinct clinical presentations. These findings highlight the value of multidimensional respiratory assessment but do not establish that oxygen therapy alone caused the observed improvements. Larger comparative studies with standardized measurements are needed to evaluate treatment effects.

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1. Introduction

Ineffective breathing patterns are clinically important problems that require systematic assessment because changes in respiratory rate, breathing rhythm, respiratory effort, and oxygenation may indicate altered respiratory function. In pediatric patients, respiratory symptoms need to be interpreted in relation to age, underlying illness, and the child's overall clinical presentation. Respiratory conditions can vary considerably in their manifestations and severity, making careful observation essential when planning and evaluating nursing care. The literature on pediatric respiratory emergencies, including severe asthma, highlights the need to recognize respiratory deterioration and respond

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appropriately to the patient's clinical condition (Al-Samarrai, 2023; Rotta et al., 2020). In addition, guidance on air travel for people with respiratory disease illustrates the importance of considering respiratory status and oxygen requirements within the patient's specific clinical context (Coker et al., 2022). These considerations support the use of structured respiratory assessments rather than relying on a single symptom or physiological measurement.

Respiratory assessment is particularly important when patients experience dyspnea or signs of impaired oxygenation. Oxygen saturation, respiratory rate, heart rate, breathing pattern, and visible respiratory effort provide complementary information about a patient's condition. However, oxygen saturation alone does not fully characterize respiratory distress, and an improvement in one parameter does not necessarily mean that all aspects of respiratory function have normalized. Research on dyspnea management has also shown that the relationship between oxygen administration and subjective breathlessness is complex. For example, a randomized trial comparing palliative oxygen with room air examined whether oxygen itself relieved refractory breathlessness, while a systematic review and meta-analysis investigated oxygen for dyspnea in patients with cancer who were mildly or not hypoxemic (Abernethy et al., 2010; Uronis et al., 2008). These studies underline the importance of distinguishing physiological oxygenation from the patient's reported respiratory discomfort. Accordingly, nursing evaluation should integrate objective measurements with observed breathing patterns and reports from patients or their caregivers.

Despite the availability of respiratory assessment measures, nursing care may be challenging when similar respiratory manifestations occur in patients with different underlying conditions. Dyspnea, altered respiratory rate, and changes in oxygen saturation must be interpreted in conjunction with the medical diagnosis and the patient's overall presentation. Therefore, the management of respiratory symptoms requires ongoing assessment rather than assuming that a single intervention will produce the same response in every patient. Evidence concerning respiratory support also comes from diverse clinical settings and patient populations, including emergency care, intensive care, and palliative care (Davies, 2019; Hui et al., 2021; Ruangsomboon et al., 2020). Findings from these settings may inform the broader understanding of respiratory support; however, their applicability to individual pediatric nursing cases must be considered carefully. Furthermore, changes observed during hospitalization may coincide with other treatments, routine nursing care, and the natural course of the underlying illness. A descriptive account can document these changes; however, it cannot independently determine which factor caused them.

Oxygen therapy is used in clinical practice to provide supplemental oxygen when indicated by the patient's condition and prescribed treatment plan. A conventional nasal cannula is a noninvasive delivery interface used to administer oxygen at a prescribed flow

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rate. Its implementation in nursing care involves more than applying the device: the patient's respiratory status must be assessed, the prescribed therapy maintained, the device and patient tolerance observed, and the response evaluated over time. The literature on oxygen therapy emphasizes that clinical decisions and patient experiences can be influenced by the context in which oxygen is prescribed and administered (Kelly et al., 2018; Quinn-Lee et al., 2018). Studies addressing oxygen use in palliative care likewise illustrate that the goals of oxygen administration may include both physiological support and symptom relief, although these goals should not be assumed to be interchangeable (Breaden et al., 2013; Hui et al., 2021). In practice, therefore, the nursing process provides a useful structure for documenting assessment findings, prescribed intervention, monitoring, and subsequent clinical observations.

Previous literature has examined several forms of nasal oxygen delivery, including high-flow nasal cannula (HFNC). HFNC has been discussed in relation to its physiological mechanisms and clinical implications, including heated and humidified gas delivery and its use in respiratory support (Spoletini et al., 2015; Spicuzza & Schisano, 2020). Clinical research has also compared HFNC with conventional oxygen therapy in specific populations. For instance, Ruangsomboon et al. (2020) conducted a randomized crossover study on HFNC and conventional oxygen therapy for dyspnea in emergency palliative patients with do-not-intubate status. Other studies have investigated high-flow oxygen in patients with cancer, including its use for dyspnea in hospitalized patients and exertional dyspnea (Hui et al., 2021; Hui, Mahler, et al., 2021). These studies demonstrate that oxygen-delivery methods have been examined across different clinical contexts. Nevertheless, HFNC and conventional low-flow nasal cannulas differ in their delivery characteristics and should not be treated as equivalent interventions. Evidence from HFNC studies consequently provides context for respiratory support but does not directly establish the effects of conventional nasal-cannula oxygen in the patients described here.

A specific need remains for clear, case-based descriptions of how conventional nasal-cannula oxygen therapy is incorporated into nursing care and how respiratory indicators change during observation. The Scopus-exported literature includes research on oxygen delivery, dyspnea, respiratory support, and clinical decision-making; however, the studies differ in their populations, clinical settings, and oxygen-delivery approaches (Abernethy et al., 2010; Ruangsomboon et al., 2020; Spicuzza & Schisano, 2020). These differences limit direct comparisons with individual cases involving conventional nasal cannulas. The present study addresses this descriptive need by documenting two patients receiving physician-prescribed nasal-cannula oxygen in a hospital ward: a 2-year-old patient with bronchopneumonia and a 17-year-old patient admitted with abdominal colic and a reported history of seizures. The study focuses on the nursing care process and observed changes in dyspnea, respiratory rate, oxygen saturation, breathing pattern, and accessory muscle use.

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Its contribution is not a test of treatment efficacy, but a contextual account of nursing assessment, implementation, monitoring, and evaluation across two different clinical presentations.

Accordingly, this study aimed to describe the implementation of nasal-cannula oxygen therapy within the nursing care process and the respiratory changes observed in two patients with an ineffective breathing pattern. It was guided by two research questions: (1) How was nasal-cannula oxygen therapy implemented within the nursing care process for the two patients? (2) What changes in dyspnea, respiratory rate, oxygen saturation, breathing pattern, and accessory muscle use were observed during the three-day observation period? By addressing these questions, this study provides a descriptive account of clinical care and patient responses while recognizing that observations from two cases cannot establish that oxygen therapy alone caused the changes.

2. Methodology

Research Design and Setting

A descriptive case-study design was used to describe the implementation of oxygen therapy through a nasal cannula in patients with ineffective breathing patterns. The design allowed a detailed account of the patients' respiratory conditions, the nursing interventions delivered, and the clinical responses observed during care. The descriptive approach documented changes in respiratory status within the clinical context rather than testing a causal relationship between the intervention and patient outcomes.

The study was conducted in the Dahlia Ward of RS TK II Pelamonia Makassar, Indonesia. Data were collected from June 21–24, 2026, as stated in the study protocol. The case narratives describe respiratory observations over three days, beginning on June 21 and continuing until June 23, 2026. This study focused on the use of nasal cannula oxygen therapy as part of nursing care for patients diagnosed with ineffective breathing patterns.

Case Selection and Participants

The case study included two patients. The inclusion criteria were as follows: (1) pediatric patients identified as having an ineffective breathing pattern; (2) patients aged 1–17 years; and (3) patients who had already been receiving oxygen through a nasal cannula. The exclusion criteria were as follows: patients in critical condition who required mechanical ventilation or had severe complications, patients with reduced levels of consciousness, and patients with severe congenital respiratory abnormalities.

The first case involved a 2-year-old boy, identified as An. R, who was admitted with a medical diagnosis of bronchopneumonia. At the initial assessment on June 21, 2026, his parents reported shortness of breath, fever, and flu-like symptoms that had persisted for two days. The second case involved a 17-year-old girl, identified as An. A, who was admitted with

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a medical diagnosis of abdominal colic. Her parents reported episodes of seizures over the preceding two to three days, as well as shortness of breath. Both patients had been receiving oxygen through a nasal cannula in accordance with the treating physician's prescription. The prescribed flow rates recorded in the manuscript were 2 L/min for An. R and 3 L/min for An. A.

Data Collection Instruments and Procedures

The researchers used a nursing assessment form, vital sign observation sheet, and pulse oximeter. The assessment form was used to record subjective and objective information concerning the patients' respiratory conditions, health histories, and signs and symptoms associated with oxygenation impairment. An observation sheet was used to document vital signs, including respiratory rate, heart rate, and body temperature. A pulse oximeter was used to measure the peripheral oxygen saturation (SpO_2).

Data collection involved four complementary methods: First, the researchers interviewed the patients' parents or family members to obtain information about the primary complaints, recent health history, and perceived changes in the patients' condition. Second, direct observation captured breathing patterns, use of accessory respiratory muscles, skin color, and responses to nasal cannula oxygen therapy. Third, the physical examination focused on the respiratory system, including assessment for signs of respiratory distress such as tachypnea, cyanosis, and chest retractions. Fourth, vital signs and SpO_2 measurements documented the patients' physiological status during the observation period.

The nursing care process began with the collection of baseline information and the identification of eligible patients. Assessment findings were used to establish the nursing diagnosis of ineffective breathing pattern and to develop an intervention plan. Oxygen therapy through a nasal cannula was continued as prescribed by the treating physician. The nursing team monitored the patients' respiratory status and documented their responses during the three-day observation period. The intervention was evaluated by examining changes in reported dyspnea, respiratory rate, oxygen saturation, breathing pattern, and the use of accessory respiratory muscles.

Data Analysis

The data were analyzed descriptively within the nursing care process as the organizing framework. Information gathered through interviews, observations, physical examinations, and clinical documentation was reviewed and selected according to its relevance to respiratory function and oxygenation. The data were classified as subjective or objective. Subjective data included the patients' reported symptoms, as conveyed by the patients or their family members. Objective data included respiratory rate, SpO_2, other recorded vital signs, and observed signs of respiratory distress.

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The assessment findings were interpreted in relation to the nursing problem of ineffective breathing pattern and the respiratory indicators identified in the care plan. Changes in each patient's condition were examined across the observation period, with attention to reported dyspnea, respiratory rate, oxygen saturation, breathing regularity, and accessory muscle use. The findings were organized by case and summarized to compare the initial assessment and subsequent observations. No inferential statistical analysis was conducted, consistent with the descriptive nature and small number of cases. The findings were therefore interpreted as clinical observations from two individual cases, not as evidence that nasal-cannula oxygen therapy alone caused the observed changes.

3. Results and Discussion

Case 1: An. R

An. R was a 2-year-old boy admitted to the Dahlia ward of RS TK II Pelamonia Makassar with a medical diagnosis of bronchopneumonia. On June 21, 2026, his parents reported shortness of breath, fever, and flu-like symptoms that had been present for two days. The initial assessment recorded a heart rate of 120 beats/min, respiratory rate of 32 breaths/min, body temperature of 37.7°C, and oxygen saturation (SpO_2) of 90%. The child appeared restless and cried during nursing care. At the time of assessment, he was receiving oxygen through a nasal cannula at 2 L/min, as prescribed by the treating physician.

During the three-day observation period, the nursing team continued nasal-cannula oxygen therapy according to the prescribed treatment plan and monitored the child's respiratory status. On the first day, the child continued to exhibit respiratory discomfort and increased work of breathing. A separate daily assessment recorded a respiratory rate of 36 breaths/min and SpO_2 of 95%. On June 22, the respiratory rate was 32 breaths/min and SpO_2 was 97%. The child appeared calmer, the use of accessory respiratory muscles decreased, and his parent reported that he was able to rest more comfortably, although occasional shortness of breath persisted.

On June 23, the parent reported that the child no longer experienced shortness of breath to the same extent as at the beginning of the observation. The child appeared more comfortable, showed a regular breathing pattern, and no longer visibly used accessory respiratory muscles. He had also resumed playing and other activities. The recorded respiratory rate was 28 breaths/min, heart rate was 108 beats/min, body temperature was 36.5°C, and SpO_2 was 99%.

Case 2: An. A

An. An: A was a 17-year-old girl admitted to the same ward with a medical diagnosis of abdominal colic. Her parents reported a history of seizures over the preceding two to three days and shortness of breath. The initial assessment recorded a heart rate of 110 beats/min,

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respiratory rate of 30 breaths/min, body temperature of 37°C, and SpO_2 of 92%. The manuscript also records that the patient was receiving oxygen through a nasal cannula at 3 L/min according to the prescribed treatment plan.

On June 21, 2026, the patient reported shortness of breath and appeared restless and uncomfortable, particularly during activity. On June 22, she continued to report shortness of breath, although it had decreased compared with the previous day. Her breathing appeared more regular, and the symptoms were reported mainly during activity. Her parent stated that she was able to rest more comfortably, although shortness of breath occasionally occurred after walking to the toilet. The recorded respiratory rate was 25 breaths/min and heart rate was 98 beats/min.

On 23 June, the patient's parent reported further improvement in the patient's condition and a reduction in shortness of breath. The patient appeared more comfortable, her breathing was more regular, and she was able to perform light activities without substantial respiratory discomfort. The recorded heart rate was 94 beats/min, respiratory rate was 24 breaths/min, body temperature was 36.9°C, and SpO_2 was 99%.

Summary of respiratory observations

The clinical observations recorded for both patients are summarized in Table 1. In An. The reported respiratory rate decreased from 32 breaths/min at the initial assessment to 28 breaths/min on the third day, while SpO_2 increased from 90% to 99%. In An. The reported respiratory rate decreased from 30 breaths/min to 24 breaths/min, while SpO_2 increased from 92% to 99%. These comparisons reflect the values recorded in the case narratives; the differing measurement conditions and timing require confirmation before the values are treated as directly comparable.

Table 1. Respiratory and vital-sign observations during the case-report period

Variable	An. R: initial assessment	An. R: day 3	An. A: initial assessment	An. A: day 3
Respiratory rate (breaths/min)	32	28	30	24
SpO_2 (%)	90	99	92*	99
Heart rate (beats/min)	120	108	110	94
Body temperature (°C)	37.7	36.5	37.0	36.9

**The original manuscript reported the initial SpO_2 of An. A as "92 x/menit"; the value and unit must be verified against the clinical records.*

The manuscript also reports SLKI-related scores for respiratory rate, breathing rhythm, breathing depth, dyspnea, accessory muscle use, additional breath sounds, and oxygen saturation in Tables 4.1 and 4.2, respectively. These scores are not reproduced here because the scoring direction and the meaning of the before-and-after columns require further clarification. Once verified, the scores will be presented in a separate table with a clear explanation of the scale and assessment time points.

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Discussion

This descriptive case study examined the implementation of conventional nasal-cannula oxygen therapy within the nursing care process and documented changes in respiratory status in two patients with an ineffective breathing pattern. Across the three-day observation period, both patients showed higher recorded oxygen saturation, lower respiratory rates, and reported or observed improvements in breathing comfort. These findings address the study's objectives by illustrating how respiratory status was assessed and monitored during prescribed oxygen therapy in two distinct clinical contexts. However, the findings represent clinical changes observed during care rather than evidence of an independent treatment effect. The small number of cases, absence of a comparison group, and presence of other potential influences on recovery precluded attributing the observed changes solely to oxygen administration.

The increase in peripheral oxygen saturation (SpO_2) in both cases is a notable feature of the observed clinical trajectories. In the younger patient with bronchopneumonia, SpO_2 increased from 90% at the initial assessment to 99% on the third day. In the older patient, the recorded value increased from 92% to 99%. These changes are consistent with the clinical purpose of supplemental oxygen when oxygenation is a concern. Nevertheless, oxygen saturation should not be interpreted in isolation. It provides information about peripheral oxygenation but does not, by itself, establish that ventilation, respiratory effort, or the underlying disease process has normalized. The distinction is particularly important when interpreting dyspnea, which may not correspond directly to oxygen saturation. Research on oxygen for refractory dyspnea has demonstrated the importance of examining symptom relief separately from the administration of supplemental oxygen. Abernethy et al. (2010), for example, compared palliative oxygen with room air in patients with refractory breathlessness, while Uronis et al. (2008) reviewed evidence concerning oxygen for dyspnea in patients with cancer who were mildly or not hypoxemic. Although these populations differ substantially from the patients in the present study, this literature reinforces the need to distinguish oxygenation outcomes from subjective respiratory comfort.

The younger patient's clinical course illustrates the value of integrating physiological measurements with behavioral and functional observations. At the initial assessment, the child had bronchopneumonia, an SpO_2 of 90%, and reported shortness of breath. He was also restless and crying during nursing care. By the third day, the recorded SpO_2 had increased, the respiratory rate had decreased, and the child appeared more comfortable, with a regular breathing pattern and no visible use of accessory respiratory muscles. The parent also reported reduced shortness of breath, and the child resumed playing. Taken together, these observations suggest that the improvement extended beyond a change in pulse oximetry to include observable comfort and activity. In young children, behavioral cues and caregiver reports can be particularly useful components of assessment because children may have

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limited ability to describe symptoms precisely. However, crying, distress, and activity can also affect respiratory observations. The apparent improvement should therefore be understood as a convergence of clinical indicators rather than as a single definitive measure of recovery.

The course of the child's bronchopneumonia also complicates the interpretation of the observed changes. Respiratory status may evolve as the underlying illness responds to medical treatment and supportive care. The study did not isolate oxygen therapy from these other influences, nor did it document sufficient detail about concurrent treatments to estimate their contribution. The increase in SpO_2 and reduction in respiratory effort may have occurred in the context of prescribed oxygen, the natural progression of the illness, other clinical interventions, and ongoing nursing care. Consequently, the case does not establish that oxygen therapy caused the child's improvement. Its contribution was instead the documentation of respiratory observations while oxygen was administered according to the physician's prescription and the patient was monitored over time.

The second case broadens the clinical context in which respiratory assessment was conducted. The 17-year-old patient was admitted with abdominal colic, while her parent reported recent seizure episodes and shortness of breath. During the observation period, the recorded respiratory rate decreased from 30 to 24 breaths/min, and SpO2 increased from a recorded 92% to 99%. The patient also reported experiencing less dyspnea and tolerating light activity with less respiratory discomfort. These observations show the relevance of assessing respiratory symptoms even when the recorded principal diagnosis is not a respiratory disease. At the same time, the available information does not establish the mechanism underlying this patient's dyspnea. The reported seizure history is an important clinical context, but it cannot be assumed to explain the respiratory symptoms or their subsequent change. Further clinical information is needed to interpret the relationship between the presenting complaints, underlying condition, and respiratory status.

The similarity in the direction of change across the two cases should also be interpreted cautiously. Both patients received conventional nasal-cannula oxygen, but their ages, clinical presentations, and prescribed flow rates differed. The younger patient received oxygen at 2 L/min, whereas the older patient received 3 L/min. Because the study did not compare flow rates or use a standardized intervention protocol designed to test dose-related effects, the outcomes cannot be used to infer that one flow rate was more appropriate or effective than the other. Nor do the two cases establish that similar changes would occur in other patients. Instead, the cases illustrate the importance of individualized assessment and monitoring within the nursing care process. Oxygen administration was continued according to the prescribed plan, while the patients' symptoms, respiratory rates, oxygen saturation, and observable breathing were reviewed during care.

The reduction in respiratory rate in both cases is consistent with the reported

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improvement in breathing comfort; however, its clinical significance depends on the conditions under which the measurements were obtained. Respiratory rate can vary with age, activity, emotional state, and the timing of assessment. This issue is particularly relevant to younger patients, who were initially restless and crying, and older patients, whose dyspnea was more evident during activity. The manuscript also reports a separate first-day observation for the younger patient with a respiratory rate of 36 breaths/min and SpO_2 of 95%, compared with the initial values of 32 breaths/min and 90%. This variation underscores the importance of documenting the precise timing and circumstances of each measurement. Without such information, comparisons between baseline and later values may reflect differences in measurement conditions as well as changes in clinical status. Future case documentation should specify whether patients were resting or active, the timing of observations, and whether oxygen flow and device positioning remained consistent.

The present findings can be situated within the broader literature on nasal oxygen delivery, although distinctions between oxygen-delivery systems are essential. Spoletini et al. (2015) discussed the mechanisms and clinical implications of heated, humidified high-flow nasal oxygen in adults, while Spicuzza and Schisano (2020) reviewed high-flow nasal cannula oxygen therapy as an option for respiratory failure. These sources provide context for the development and clinical use of nasal oxygen support, but they concern HFNC rather than the conventional low-flow nasal cannula used in the present cases. These two approaches should not be treated as interchangeable. In addition, Ruangsomboon et al. (2020) compared HFNC with conventional oxygen therapy in emergency palliative patients with do-not-intubate status. Their study provides a direct comparison of oxygen-delivery approaches in a specific population, but its findings cannot be transferred uncritically to pediatric patients with different diagnoses and treatment goals. The current study therefore adds a different kind of evidence: a descriptive account of conventional nasal-cannula therapy embedded in routine nursing care, rather than a comparative evaluation of oxygen-delivery methods.

The practical implication of these cases is the value of multidimensional respiratory assessment. The observed clinical picture included SpO_2 and respiratory rate, as well as breathing regularity, accessory muscle use, dyspnea, rest, and activity. Together, these indicators provide a broader description of the patient's status than either oxygen saturation or respiratory rate alone. This approach is relevant to nursing practice because evaluation involves determining whether the patient's condition is changing across multiple dimensions rather than merely recording a physiological value. Family reports also provided information about symptoms and comfort between formal observations. Nevertheless, subjective reports and direct observations should be documented distinctly, and the timing of each report should be clear. The manuscript's SLKI-related scores may further support

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structured evaluation, but their scoring direction, interpretation, and assessment time points must be clarified before they can be used to substantiate the magnitude of the change.

The study's principal contribution is descriptive and practice-oriented. It documents the nursing care context in which prescribed conventional nasal-cannula oxygen was continued and respiratory indicators were monitored in two patients with different clinical presentations. It does not establish a new physiological mechanism or demonstrate the efficacy of oxygen therapy. Its value lies in illustrating the relationship between assessment, prescribed intervention, ongoing observation, and evaluation in a hospital ward. Several limitations constrain the interpretation and transferability of the findings. The study involved only two patients from one ward, had no comparison group, and could not separate the effects of oxygen therapy from other care or the natural course of illness. The cases also differed clinically, and measurement timing and conditions were not fully standardized. In addition, the initial SpO_2 entry for the older patient was recorded in the original material as "92 x/menit"; this value and unit must be verified against the clinical record. The discrepancy between the stated data-collection period and the three days described in the case narratives should also be resolved. These issues limit the precision of the conclusions but do not eliminate the descriptive value of the observations.

Future studies can strengthen this area of nursing research by including a larger and clearly defined sample, using standardized measurement times and conditions, documenting oxygen flow and device use consistently, and specifying outcome scales and their scoring direction. More detailed reporting of concurrent treatment and clinical progress would also help contextualize changes in respiratory status. If the objective is to estimate the effect of oxygen therapy, a suitable comparative design would be required. Until such evidence is available, the present findings are best understood as a record of improvement observed during a period of nursing care that included prescribed nasal-cannula oxygen. Overall, the cases emphasize the importance of systematic, individualized respiratory assessment and careful interpretation of changes across physiological, symptomatic, and functional indicators.

4. Conclusion

This study examined how conventional nasal-cannula oxygen therapy within the nursing care process for two patients with an ineffective breathing pattern in the Dahlia ward of RS TK II Pelamonia Makassar, Indonesia. Over the three-day observation period, both patients demonstrated improvements in selected respiratory indicators while receiving oxygen therapy as prescribed. For the 2-year-old patient with bronchopneumonia, oxygen saturation (SpO_2) increased from 90% to 99%, while respiratory rate decreased from 32 to 28 breaths/min. The 17-year-old patient, admitted with abdominal colic and a reported history of seizures, showed an increase in recorded SpO_2 from 92% to 99% and a decrease

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in respiratory rate from 30 to 24 breaths/min. These changes were accompanied by reduced dyspnea, more regular breathing, greater comfort, and improved tolerance of activity. Overall, the findings show how systematic respiratory assessment, continuation of prescribed oxygen therapy, and ongoing nursing evaluation can be documented across different clinical presentations. However, given the descriptive case-study design, the observed improvements represent changes occurring during care and cannot be attributed solely to nasal-cannula oxygen therapy.

Several limitations should be considered when interpreting the findings, including the small sample of two patients from a single hospital ward, the absence of a comparison group, and the inability to distinguish the effects of oxygen therapy from other clinical care or the natural course of illness. Differences in the patients' clinical conditions and measurement circumstances also limit direct comparison, while inconsistencies in the reported observation dates and the initial SpO_2 unit for the second patient require verification against the clinical records. Future studies should include a larger and clearly defined sample, standardized measurement times and conditions, explicit documentation of oxygen flow rates and device use, and clearly specified outcome measures. Comparative designs would be necessary to investigate the effects of oxygen therapy independently. Despite these limitations, this study contributes a practice-oriented account of how conventional nasal-cannula oxygen therapy was incorporated into nursing assessment, intervention, monitoring, and evaluation for two patients with an ineffective breathing pattern. The findings highlight the importance of evaluating respiratory status through multiple indicators, including SpO_2, respiratory rate, dyspnea, breathing pattern, accessory muscle use, and functional comfort, rather than relying on a single measurement. This case-based account may inform clinical education and support more systematic documentation of respiratory nursing care, while further research is needed to establish the effectiveness of the intervention.

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