

TRANSCULTURAL NURSING CARE IN A COPD PATIENT: A CASE STUDY BASED ON LEININGER'S MODEL

Alifiyah Aimar^{1*}, Sudiharto²

^{1,2}Program Studi Keperawatan Program Diploma Tiga, Fakultas Ilmu Kesehatan,
Universitas Pembangunan Nasional "Veteran" Jakarta, Jakarta

[*Email Korespondensi: 2310701075@mahasiswa.upnvj.ac.id]

Abstract: Transcultural Nursing Care in a COPD Patient: A Case Study Based on Leininger's Model. Chronic Obstructive Pulmonary Disease (COPD) requires long-term management that often fails due to a lack of cultural consideration in nursing care. This study aims to describe nursing care for a COPD patient experiencing an acute exacerbation using Leininger's Transcultural Nursing model. A case study was conducted on Mr. J (61 years old) with Acute Exacerbation of COPD, and a secondary respiratory infection in March 2026. Data were gathered through interviews based on the Sunrise Model, observation, and documentation. Assessment identified smoking habits (2 packs/day for 35 years) and family involvement in decision-making as dominant cultural factors. Interventions integrated pursed-lips breathing and effective coughing with cultural care preservation, accommodation and restructuring. Evaluation showed a clinical improvement in respiratory rate (25 to 21 breaths/minute) and oxygen saturation (92% to 97% on room air). Integrating clinical interventions with transcultural approaches using Leininger's modes effectively improves respiratory status, highlights the value of aligning mechanical exercises with cultural context, and supports sustainable behavioral changes in COPD patients.

Keywords: Breathing Exercises, Chronic Obstructive Pulmonary Disease, Nursing Care, Transcultural Nursing.

Abstrak: Asuhan Keperawatan Transkultural pada Pasien PPOK: Studi Kasus Berbasis Model Leininger. Penyakit Paru Obstruktif Kronik (PPOK) memerlukan manajemen jangka panjang yang seringkali gagal karena kurangnya pertimbangan aspek budaya dalam asuhan keperawatan. Studi ini bertujuan untuk mendeskripsikan asuhan keperawatan pada pasien PPOK dengan menggunakan model *Transcultural Nursing* Leininger. Studi kasus dilakukan pada Tn. J (61 tahun) pada Maret 2026. Data dikumpulkan melalui wawancara berbasis *Sunrise Model*, observasi, dan dokumentasi. Pengkajian mengidentifikasi bahwa kebiasaan merokok dan kolektivitas keluarga merupakan faktor budaya yang dominan. Intervensi mengintegrasikan teknik klinis *pursed-lips breathing* dan batuk efektif dengan restrukturisasi dan negosiasi budaya. Evaluasi menunjukkan perbaikan signifikan pada frekuensi napas (25 menjadi 21 x/menit) dan saturasi oksigen (92% menjadi 97%). Studi ini menonjolkan bahwa keberhasilan klinis pada PPOK tidak hanya bergantung pada latihan mekanis, tetapi juga secara signifikan melalui strategi *cultural care preservation, accommodation, dan restructuring* yang mengkolaborasikan intervensi klinis dengan transkultural. Sinergi antara intervensi klinis dan pendekatan transkultural efektif meningkatkan status pernapasan dan menjamin keberlanjutan perubahan perilaku pada pasien PPOK.

Kata Kunci: Asuhan Keperawatan, Keperawatan Transkultural, Latihan Pernapasan, Penyakit Paru Obstruktif Kronis.

INTRODUCTION

Chronic Obstructive Pulmonary disease characterized by persistent Disease (COPD) is a progressive lung airflow limitation and breathing

difficulties (World Health Organization, 2024). COPD has become one of the global health problems with a high disease burden. Global Burden of Disease (GBD) 2021 data shows about 213.4 million cases of COPD in the world with a prevalence of 2.5% of the population (Cao et al., 2026).

In Indonesia, the national prevalence of COPD is reported at 5.6% (Antariksa et al., 2023), with regional data in Banten Province and DKI Jakarta reaching 6.3%—specifically 5.4% in urban areas and 7.2% in rural areas (Pattinaja and Utama, 2025). The primary risk factor for COPD is active smoking, which accounts for up to 70%–90% of cases (Antariksa et al., 2023), alongside other determinants such as secondhand smoke and air pollution (50%), chronic bronchitis (27%–35%), tuberculosis history (21%), and occupational exposure (19.2%) (GOLD, 2024). The diversity of these contributing factors highlights that COPD is not merely a biological condition, but a complex disease deeply influenced by behavioral, environmental, and sociocultural determinants.

The transcultural nursing approach plays a critical role in delivering holistic patient care. Recent evidence demonstrates that cultural competence among nursing staff significantly enhances their ability to align clinical care with patients' cultural values, beliefs, and background (Pretorius et al., 2026). According to Leininger's framework, transcultural nursing aims to integrate both culturally specific and universal care practices to optimize health outcomes and support patients through illness or end-of-life care in a culturally meaningful manner (Shahzad et al., 2021). By applying Leininger's Sunrise Model, nurses systematically assess key sociocultural dimensions—including technological factors, religious beliefs, kinship systems, cultural values, healthcare policies, economic status, and educational background—that shape individual health behaviors (Tabudlo and Saligan, 2022). These transcultural principles (Hanafi et al., 2023),

encompassing cultural care preservation, accommodation, and restructuring, provide a structured approach to addressing behavioral risk factors such as smoking.

Non-pharmacological interventions such as pursed-lips breathing (Şimşekli and Tan, 2025) and effective coughing (Sawitri et al., 2024) have been proven effective in improving breathing patterns, enhancing airway clearance, and relieving dyspnea in patients with Chronic Obstructive Pulmonary Disease (COPD). This technique has been proven effective in improving breathing patterns and reducing complaints of shortness of breath in patients, while the coughing technique has also been proven effective in improving airway clearance and the client's respiratory condition. However, these interventions are often implemented purely as clinical routines without considering the patient's cultural background, which can hinder their long-term adoption and overall effectiveness. Furthermore, previous studies have predominantly focused on short-term clinical outcomes of COPD care without integrating transcultural nursing approaches, particularly in addressing persistent lifestyle risks such as smoking through cultural restructuring strategies.

Evidence regarding the combination of respiratory interventions with culturally based approaches in improving patients' physiological and behavioral outcomes is still limited. Therefore, this study aims to describe the application of transcultural nursing care for COPD patients by integrating clinical interventions and cultural approaches to improve patients' respiratory status and health behaviors.

METHODS

The study was conducted in March 2026 in the Flamboyan Ward at South Tangerang General Hospital. The subject was a 61-year-old male patient (Mr. J) diagnosed with Acute Exacerbation of COPD, with a history of hypertension and a secondary respiratory infection. Due to the emergency acute condition and hospital equipment constraints during admission,

diagnostic spirometry and formal mMRC/CAT scoring were not performed, which is acknowledged as a study limitation; classification was guided by GOLD 2024 acute exacerbation indicators.

The study was conducted in accordance with ethical principles, ensuring patient confidentiality and anonymity, and did not involve any experimental intervention. Data were gathered through interviews based on the Sunrise Model, direct observations, and medical record documentation. Data validity was maintained through source triangulation. Baseline laboratory analyses, chest X-rays (showing bronchitis with secondary infection), and sputum evaluations were monitored. Respiratory rate (RR) was measured visually for 60 seconds, and oxygen saturation was measured using a standard fingertip pulse oximeter with the patient in a semi-Fowler position (at baseline on room air and post-intervention). Sputum volume was quantified daily using a graduated specimen cup (in mL). Nursing care was provided using the nursing process integrated with a transcultural approach based on Leininger's theory.

The assessment was conducted using the Sunrise Model, which includes technological factors, religious and philosophical beliefs, social and kinship systems, cultural values and lifestyle, policies and regulations, economic conditions, and educational background (Sudiharto, 2007; Uceriz and Yel, 2025). The research procedure was carried out systematically as follows: initial assessment using the Sunrise Model, establishment of nursing diagnoses, planning of nursing interventions, implementation of interventions, and evaluation of patient outcomes. To evaluate nursing outcomes accurately alongside medical therapy, concurrent pharmacological treatments were documented, including oxygen therapy (4 L/min via nasal cannula), IV antibiotics Ampicillin-Sulbactam 3×1.5 g, IV Pantoprazole 1×40 mg, oral mucolytics Erdosteine 2×300 mg, NAC 1×600 mg, and nebulized

bronchodilators (Combivent + Fluticasone).

Nursing interventions were delivered over three consecutive days (2–4 March 2026) during the afternoon shift (15.00–21.00 WIB). Interventions comprised:

1. *Pursed-Lips Breathing (PLB)*: Guided by the nurse twice daily, 10–15 minutes per session, consisting of 3 cycles of deep nasal inhalation and prolonged pursed-lip exhalation in a semi-Fowler position. Family members were educated to supervise evening practice.
2. *Effective Coughing Exercise*: Conducted twice daily following nebulizer or mucolytic administration, involving 2–3 deep breaths followed by a strong cough to expectorate secretions into a specimen cup.
3. *Transcultural Approach*: Integrated Leininger's three modes: Cultural Care Accommodation (adapting PLB education to the patient's primary education level using local language and family support), Cultural Care Restructuring (gradual smoking cessation counseling regarding 35-year smoking habits), and Cultural Care Preservation (supporting daily spiritual habits and light activity).

RESULTS

Mr. J, a 61-year-old male, was admitted to the Flamboyan Ward at South Tangerang General Hospital with a primary diagnosis of Acute Exacerbation of COPD, complicated by a secondary respiratory infection and a history of hypertension. Upon admission, he presented with progressive dyspnea and a productive cough with thick greenish-white sputum for over four weeks. Baseline vital signs on room air recorded a blood pressure of 115/70 mmHg, RR 25 breaths/min, HR 73 beats/min, oxygen saturation: 92% on room air, rising to 97% after administration of O₂ at 4 L/min. Baseline ABG analysis on admission (February 26, 2026) revealed a compensated respiratory alkalosis (or mild alkalemia): pH 7.49 (normal 7.37–7.45), PCO₂ 36.4 mmHg (normal 33.0–44.0), PO₂ 94 mmHg (normal 71–100),

HCO₃ 28.0 mmol/L (normal 22–29), BE 2.5 mmol/L (normal –2 to +3), TCO₂ 29 mmol/L (normal 23–37), and SpO₂ 98% (normal 94–98), while GeneXpert MTB/RIF testing confirmed negative results for *Mycobacterium tuberculosis*. Urinalysis demonstrated trace proteinuria with slight turbidity. Chest radiography revealed pulmonary bronchitis with active secondary infection.

A structured transcultural nursing assessment using the seven factors of Leininger’s Sunrise Model (McFarland and Wehbe-Alamah, 2015) revealed the following findings:

- a. **Technological Factors:** The patient was unfamiliar with non-pharmacological respiratory aids or inhalation tools; he relied entirely on hospital medical equipment and needed step-by-step guidance for breathing exercises.
- b. **Religious and Philosophical Beliefs:** As a devout Muslim, the patient derived emotional comfort from prayer and recitation (*dhikr*). He viewed illness as a divine test, which enhanced his motivation for recovery.
- c. **Social and Kinship Factors:** Family support was strong; his wife and children actively accompanied him during hospitalization and participated in decision-making and daily care.
- d. **Cultural Values and Lifestyle:** The patient maintained a 35-year history of heavy active smoking (approximately 2 packs/day). Smoking was culturally embedded as a social coping mechanism and habit during work breaks.

- e. **Political and Legal Factors:** Hospitalization costs and treatments were fully covered by the national health insurance (BPJS Kesehatan), facilitating unhindered access to clinical care.
- f. **Economic Factors:** The patient worked in the informal sector with a low-to-middle income, making cost-free insurance coverage crucial for compliance.
- g. **Educational Factors:** The patient completed elementary education (SD), requiring health education to be delivered using simplified, jargon-free local language and practical demonstrations.

Following the implementation of integrated nursing interventions—comprising pursed-lips breathing, effective coughing exercises, and transcultural approaches (cultural preservation, accommodation, and restructuring)—significant improvements in both clinical parameters and health behaviors were observed. Key behavioral outcomes included smoking abstinence during hospitalization accompanied by a stated commitment to quit, active family involvement in care and decision-making, and a gradual increase in physical activity. Sputum production decreased from thick greenish-white secretions to approximately 7 mL on the second day, and cleared completely by the third day. Table 1 summarizes the progressive changes in the patient’s clinical parameters across the intervention period.

Table 1. Clinical Parameters Before and After the Intervention

Parameter	Before	After
Respiratory rate	25 breaths/min	21 breaths/min
Oxygen saturation (room air)	92%	97%

Before measurements were recorded prior to the intervention on Day 1 (March 2, 2026), and After measurements were recorded post-intervention on Day 3 (March 4, 2026). All parameters were evaluated while the patient was on room air (without supplemental oxygen).

Table 2. Daily Evaluation of Respiratory Parameters and Sputum Characteristics

Day	Evaluation Time	Respiratory Rate	Oxygen Saturation	Sputum Volume and Characteristics
Day 1	Before	25 breaths/min	92%	Thick, greenish-white sputum
	After	23 breaths/min	94%	Secretions retained
Day 2	Before	24 breaths/min	94%	Reduced greenish sputum
	After	22 breaths/min	96%	7 mL expectorated sputum
Day 3	Before	23 breaths/min	95%	Minimal clear saliva
	After	21 breaths/min	97%	3 mL clear liquid/non-productive

Oxygen saturation was measured on room air.

As detailed in Table 2, a progressive improvement in respiratory parameters and sputum clearance was recorded over the 3-day intervention period. The patient's baseline respiratory rate decreased from 25 breaths/min (post-intervention: 23 breaths/min) on Day 1 to 23 breaths/min (post-intervention: 21 breaths/min) on Day 3. Concurrently, oxygen saturation on room air increased from a baseline of 92% (post-intervention: 94%) on Day 1 to 95% (post-intervention: 97%) on Day 3. Sputum volume gradually diminished from thick greenish-white secretions to minimal clear liquid (3 mL) by the final evaluation. These physiological improvements were accompanied by positive behavioral adaptations, including temporary smoking abstinence during hospitalization with a stated commitment to quit, active family involvement in daily care, and a gradual increase in physical activity.

DISCUSSION

The patient's initial condition reflects the typical clinical picture of Chronic Obstructive Pulmonary Disease (COPD), which is a chronic lung disease characterized by persistent airflow obstruction due to lung tissue damage and airway inflammation. This condition causes air to become trapped in the lungs, increased mucus production, and impaired gas exchange, resulting in shortness of breath, productive cough, increased respiratory rate, and decreased oxygen saturation. This aligns with the mechanism of COPD as explained by the American Lung

Association (2025), where emphysema causes alveolar damage and air trapping, while chronic bronchitis leads to airway narrowing due to inflammation and excessive mucus production. A history of heavy, long-term smoking is a major risk factor that contributes to progressive lung damage and worsens airflow limitation in patients with COPD.

More specifically, the pathological mechanism in Mr. J's case, triggered by a heavy smoking habit for 35 years, involves a complex inflammatory response. According to Guo et al. (2022), long-term exposure to cigarette smoke triggers the activation of inflammatory cells such as macrophages and neutrophils, which release cytokines and proteases excessively. This process is worsened by chronic airway remodeling and irreversible lung tissue damage. Understanding this molecular pathway is very important because it explains why the patient's airway clearance and ineffective breathing pattern is severely impaired, necessitating both pharmacological targets and non-pharmacological support.

The clinically observed improvement in Mr. J's respiratory rate (from 25 to 21 breaths/minute) aligns with the findings of Yang et al. (2022), which demonstrated that Pursed-Lips Breathing (PLB) enhances pulmonary function in COPD patients. However, it is essential to emphasize that this physiological improvement occurred alongside standard pharmacological therapy, including intravenous antibiotics, nebulized bronchodilators,

corticosteroids, and mucolytics. The independent contribution of the non-pharmacological nursing intervention cannot be isolated from the clinical resolution of the acute exacerbation driven by medical treatment. Furthermore, while the respiratory rate improved, a discharge value of 21 breaths/minute remains slightly above the standard physiological resting threshold (12–20 breaths/min), reflecting persistent mild air trapping characteristic of COPD. Beyond immediate mechanical relief, mechanical success does not always guarantee long-term behavioral change. This is highlighted in a qualitative study by Chen et al. (2025) using the Information-Motivation-Behavioral (IMB) model, which showed that even highly informed patients often fail in self-management due to low motivation or disease-related pessimism. In Mr. J's care, this 'motivation gap' was addressed by integrating Leininger's Cultural Restructuring. Rather than solely delivering health education, the nurse framed smoking abstinence during hospitalization and future smoke-free commitments as a shared cultural and family goal. Referring to the IMB framework, this approach strengthened intrinsic motivation, confirming that tailored strategies based on individual patient profiles are essential for long-term COPD management (Chen et al., 2025).

The implementation of cough exercises has been proven effective in helping mobilize secretions and improve airway clearance (Eny et al., 2025). Meanwhile, pursed-lip breathing techniques are effective in improving oxygenation and reducing respiratory rate through mechanisms that slow expiration and prevent airway collapse (Erviana et al., 2025). In addition to clinical interventions, a transcultural approach through cultural restructuring (changing smoking habits), accommodation (involving family in care), and preservation (maintaining habits that do not worsen health conditions) significantly contributes to the success of therapy by changing

smoking habits into healthy behaviors and increasing physical activity.

The clinical outcomes of Mr. J illustrate that physical interventions, such as breathing exercises and coughing techniques, can be effectively synergized with a patient's cultural values. As explained by Lusmaida et al. (2024), transcultural care serves to bridge the knowledge gap between nurses and patients to achieve therapeutic goals without neglecting individual cultural backgrounds. In this case, cultural restructuring regarding smoking habits was executed through negotiation and counseling rather than medical coercion, thereby avoiding cultural imposition that frequently hinders compliance in chronic patients. Furthermore, involving the family as a cultural accommodation strategy transformed medical interventions into a shared social commitment, reflecting the collectivistic culture prevalent in Indonesia. This integrated approach facilitated holistic outcomes, encompassing clinically observed respiratory improvements as well as sustainable psychosocial behavioral adaptations. These findings align with international literature by Shahzad et al. (2021), which emphasizes that integrating kinship systems into care substantially enhances intervention effectiveness within Eastern cultural contexts.

Beyond transcultural and physical interventions, several other factors contributed to the success of Mr. J's recovery. From a clinical perspective, the pharmacological stabilization provided during the acute phase allowed the patient to achieve sufficient physical tolerance to perform breathing exercises effectively. As noted by Guo et al. (2022), the complex pathology of COPD requires a multi-pronged approach where pharmacological agents control the inflammatory pathway, while nursing interventions manage the mechanical complications. Furthermore, the nurse's therapeutic communication skills were pivotal in bridging the knowledge gap described by Lusmaida et al. (2024). By framing medical advice within the

patient's cultural context, the nurse enhanced the patient's internal motivation, which acted as a catalyst for his behavioral change.

Despite the positive clinical and behavioral observations, this study has several important limitations. First, the focus on a single 61-year-old male patient within a specific hospital ward precludes the generalizability of these findings to broader COPD populations. Second, the observation period was restricted to a three-day hospitalization, meaning that the long-term sustainability of smoking abstinence and lifestyle restructuring post-discharge remains to be verified through longitudinal research. Third, the independent contribution of the nursing interventions cannot be isolated from concurrent pharmacological therapies (corticosteroids, bronchodilators, antibiotics) and the natural clinical resolution of the acute exacerbation. Fourth, diagnostic spirometry (FEV1) and standardized symptom impact instruments (such as mMRC or CAT scores) were not performed due to acute exacerbation constraints and hospital facility limitations during admission, leaving outcome evaluation reliant on vital signs (RR and SpO2) that are susceptible to physiological fluctuations. Finally, potential observer bias must be acknowledged, as the nursing interventions were delivered and evaluated by the same primary investigators.

CONCLUSION

This case study illustrates that integrating pursed-lips breathing and effective coughing with Leininger's Transcultural Nursing model supports clinical improvement and health behavior adaptations in a hospitalized COPD patient. The observed physiological improvements occurred alongside standard medical therapy, while cultural restructuring facilitated temporary smoking abstinence and enhanced family involvement.

Implications for Nursing Practice

Integrating culturally sensitive frameworks into routine respiratory care enables nurses to deliver non-coercive patient education and leverage family networks to enhance therapeutic adherence.

Recommendations for Future Research

Future longitudinal studies with larger sample sizes, diverse ethnic groups, and objective metrics (spirometry, mMRC/CAT scores) are needed to evaluate the long-term sustainability and generalizability of culturally adaptive COPD interventions.

REFERENCES

- American Lung Association, 2025. COPD basics: Steps to take when living with COPD. Chicago: American Lung Association. Available at: <http://www.internationalcopd.org/materials/patients/learn/thebasics.aspx>
- Antariksa, B., Bakhtiar, A., Wiyono, W.H., et al., 2023. PPOK: Penyakit paru obstruktif kronik. Jakarta: Perhimpunan Dokter Paru Indonesia (PDPI), pp.1–88.
- Cao, Z., Tong, X., He, L., Luo, Y., Huang, K., Li, W., Thompson, B., Geldsetzer, P., Atun, R. and Bärnighausen, T., 2026. Burden of chronic obstructive pulmonary disease and its attributable risk factors in 204 countries and territories, 1990–2021: Results from the Global Burden of Disease Study 2021. *BMJ Public Health*, pp.1–13. Available at: <https://doi.org/10.1136/bmjph-2024-002489>
- Chen, X., Wen, N., Liu, J., He, Y., Wei, L., Zhang, R. and Yang, Y., 2025. Self-management and COPD: A qualitative study to explore the perceived barriers and recommendations to improve COPD management using the Information-Motivation-Behavioral skills model. *npj Primary Care Respiratory Medicine*. Available at:

- <https://doi.org/10.1038/s41533-025-00443-9>
- Eny, N.A., Ayubbana, S. and Hasanah, U., 2025. Implementasi batuk efektif terhadap ketidakefektifan bersihan jalan nafas pada pasien penyakit paru obstruktif kronis (PPOK). *Jurnal Cendekia Muda*, 5, pp.462–468. Available at: <https://jurnal.akperdharmawacan a.ac.id/index.php/JWC/article/view/742>
- Erviana, R., Atrie, U.Y. and Sihombing, E.D., 2025. Asuhan keperawatan pola nafas tidak efektif pada Tn. penerapan teknik pursed lip breathing di IGD RSUD Kabupaten Bintang tahun 2025. *Integrative Perspectives of Social and Science Journal*, 2(6), pp.8633–8644.
- GOLD, 2024. Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease: 2024 report. Chapter 1: Definition and overview. Global Initiative for Chronic Obstructive Lung Disease, pp.4–19. Available at: <https://goldcopd.org/wp-content/uploads/2024/05/GOLD-2024-Chapter-1.pdf>
- Guo, P., Li, R., Piao, T.H., Wang, C.L., Wu, X.L. and Cai, H.Y., 2022. Pathological mechanism and targeted drugs of COPD. *International Journal of Chronic Obstructive Pulmonary Disease*, 17, pp.1565–1575. Available at: <https://doi.org/10.2147/COPD.S366126>
- Hanafi, W., Susanto, A., Tatto, F., Lembang, D., Yulianti, N.R., Syarif, I., Aji, R., Rianita, M. and Sinaga, E., 2023. *Holistic & transkultural nursing*. 1st ed. Edited by N. Sulung and M. Sari. PT Global Eksekutif Teknologi.
- Lusmaida, Dedi, et al., 2024. Literature review teori transcultural nursing. *Journal of Social Research*, pp.668–681. Available at: <https://ijsr.internationaljournallab s.com/index.php/ijsr/article/view/2028>
- McFarland, M.R. and Wehbe-Alamah, H.B., 2015. *Leininger's culture care diversity and universality: A worldwide nursing theory*. 3rd ed. Burlington: Jones & Bartlett Learning.
- Pattinaja, V.A. and Utama, J.E.P., 2025. Kecenderungan gangguan elektrolit dan penyakit penyerta pada pasien rawat inap dengan penyakit paru obstruktif kronik. *Jurnal Penelitian Kesehatan Suara Forikes*, 16(1), pp.78–81. Available at: <http://dx.doi.org/10.33846/sf16118>
- Pretorius, M., Zarandona, J., Weber, U. and Vanceulebroeck, V., 2026. Training intercultural competence of nurse educators online: A design-based research approach. *Journal of Transcultural Nursing*. Available at: <https://doi.org/10.1177/10436596261432656>
- Sawitri, A.M., Yuniarti, E.V. and Pratiwi, R.M., 2024. Active cycle of breathing technique (ACBT) and effective coughing on respiratory rate changes in COPD patients. *Jendela Nursing Journal*, 8(2), pp.145–151. Available at: <https://doi.org/10.31983/jnj.v8i2.12000>
- Shahzad, S., Ali, N., Younas, A. and Tayaben, J.L., 2021. Challenges and approaches to transcultural care: An integrative review of nurses' and nursing students' experiences. *Journal of Professional Nursing*, pp.1119–1131. Available at: <https://doi.org/10.1016/j.profnurs.2021.10.001>
- Şimşekli, D. and Tan, M., 2025. Effects of breathing exercises performed with virtual reality on dyspnea, anxiety and quality of life in COPD patients: A randomized controlled trial. *Heart & Lung*, 71, pp.7–13. Available at: <https://doi.org/10.1016/j.hrtlng.2025.01.014>
- Sudiharto, 2007. *Asuhan keperawatan keluarga dengan pendekatan*

- keperawatan transkultural. Jakarta: EGC.
- Tabudlo, J. and Saligan, L., 2022. A transcultural perspective of systemic lupus erythematosus-related fatigue: Systematic review and narrative synthesis. *Asian/Pacific Island Nursing Journal*. Available at: <https://doi.org/10.2196/39132>
- Uceriz, A.C. and Yel, P., 2025. Evaluation of a patient with heart failure using Leininger's Sunrise Model. *Journal of Nursing & Midwifery Research*, 4, pp.1–6. Available at: <https://manuscriptscientific.com/images/c38b55cd0d9b6f95cb2b078793ee3063.pdf>
- World Health Organization, 2024. Chronic obstructive pulmonary disease (COPD). Geneva: World Health Organization. Available at: [https://www.who.int/news-room/fact-sheets/detail/chronic-obstructive-pulmonary-disease-\(copd\)](https://www.who.int/news-room/fact-sheets/detail/chronic-obstructive-pulmonary-disease-(copd))
- Yang, Y., Wei, L., Wang, S., Ke, L., Zhao, H., Mao, J., Li, J. and Mao, Z., 2022. The effects of pursed lip breathing combined with diaphragmatic breathing on pulmonary function and exercise capacity in patients with COPD: A systematic review and meta-analysis. *Physiotherapy Theory and Practice*, 38(7), pp.847–857. Available at: <https://doi.org/10.1080/09593985.2020.1805834>