

## APPLICATION OF **HEAD POSITION UP30°** TO DISTURBANCES GAS EXCHANGE IN STROKE PATIENTS

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### Abstract

Stroke is the second leading cause of disability and death in the world with a high prevalence in Indonesia. Disruption of blood flow and oxygen in stroke patients can reduce oxygen saturation, requiring proper monitoring and nursing intervention. One effective non-pharmacological intervention is a 30° upward head position, which is the position of the patient's head raised about 30° from the bed with the body in parallel. The application of this intervention uses an Evidence-Based Nursing Practice (EBN) approach with a descriptive case study method in two ischemic stroke patients with oxygen saturation of <95% in the krisan Room of Arifin Achmad Hospital. The intervention was carried out for three days by measuring oxygen saturation before and after the action using a pulse oximeter. The results showed an increase in oxygen saturation after the application of the 30° head up position with an average increase of 4% from each patient. In the first patient, oxygen saturation increased from 92% to 97% within three days, while in the second patient it increased from 95% to 98%. Although the improvement is not always consistent every day, this intervention has a positive effect on increased oxygenation. The implementation of the 30° Head up position has been proven to be effective, easy to perform, and includes safe self-nursing measures to help improve oxygenation and prevent further complications in stroke patients. For further research, it is expected with a long duration of application and also a larger number of patients.

**Keyword:** stroke, *head up* position 30°, oxygen saturation, nursing

### INTRODUCTION

Stroke is one of the leading causes of disability and death in the world, including in Indonesia (Aji, 2025). Disruption of blood flow to the brain causes a lack of oxygen that impacts neurological function. Disruption of blood flow and oxygen in stroke patients can reduce oxygen saturation, so it is necessary to carry out proper monitoring and nursing interventions. One of the effective interventions is positioning. *Head Up 30°*, i.e. the position of the patient's head is raised about 30° from the bed in an aligned body position (Kusuma & Anggraeni, 2019). Low oxygen saturation is often found in stroke patients and is one of the important indicators in determining the patient's hemodynamic condition (Rachmawati et al., 2022). According to Summer, the position *Head up30° increases blood flow and oxygenation of the brain, so oxygen saturation rises. This intervention is routinely performed by nurses in stroke patients to prevent complications, improve hemodynamics, and ensure adequate oxygen supply* (Santama et al., 2025) Therefore, appropriate nursing interventions are needed to improve oxygenation, one of which is with a 30° Head Up position.

### RESEARCH METHOD

This application uses a descriptive case study method with the *Evidence-Based Nursing Practice* (EBN) approach. The study subjects consisted of two ischemic stroke patients in the Krisan Room of Arifin Achmad Hospital. The intervention in the form of giving a 30° Head

*Up* position was carried out for 30° minutes each session for three days. Oxygen saturation measurements were carried out 15 minutes before and 15 minutes after implementation using a *pulse oximeter* measuring device.

## RESEARCH RESULTS

The results showed an increase in oxygen saturation after the application of the *Head Up* position of 30°. In the first patient, SpO<sub>2</sub> increased from 92% to 97% in three days. In the second patient SpO<sub>2</sub> increased from 95% to 98% within three days. This intervention also helps to improve patient comfort and improve breathing patterns.

## DISCUSSION

The application of the 30° *Head Up position* for 30 minutes in stroke patients with gas measurement disorders has been proven to be effective in increasing oxygen saturation. In patient I, the improvement occurred on the first and third days, while in patient II on the first and second days. Although not consistent every day, this intervention still has a positive effect on oxygenation. These results are in line with the research of Trisila et al. (2022) and Rachmawati et al. (2022) who showed that the 30° Head Up position can increase oxygen saturation in stroke patients, as well as supported by a review by Paneo et al. (2024) which concluded that most studies show a positive effect of this position on oxygenation. This is in line with the principle of *Evidence-Based Nursing Practice* that simple nonpharmacological interventions can have a significant clinical effect on the respiratory status of stroke patients.

## CONCLUSION

The application of the 30° *Head Up position* for 30 minutes has been shown to be effective in improving oxygen saturation in Stroke patients with Gas Exchange Disorder, although the improvement is not always consistent every day. This intervention is a non-pharmacological therapy that is safe, easy, and beneficial for the improvement of oxygenation.

Tip: Educational institutes may include these interventions in clinical learning. Students and health workers are expected to develop further research with a larger number of samples.

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