

Effectiveness of Subglottal Suctioning Could Prevent the Develop of VAP in the Patient on Mechanic Ventilator

Mary Joy Chico Fernandez ^{1,*}, Roan Adarlo ¹

¹ School of Nursing and Allied Medical Sciences, Holy Angel University, Philippines

* Correspondence: Mary Joy Chico Fernandez (maryjhoy1912@gmail.com)

Abstract: VAP, or Ventilator Associated Pneumonia, is a type of pneumonia that arises in patients receiving mechanical ventilation. This condition is a serious complication and can lead to the patient's decline while on a mechanical ventilator, posing a significant risk for secondary complications if not addressed promptly. In particular, VAP is a prevalent issue in intensive care units, where the healthcare team works to prevent further deterioration of the patient. VAP is associated with a notably high mortality rate, particularly in individuals with weakened immune systems, as well as in younger and older populations. Extended intubation and prolonged sedation can contribute to the onset of VAP. The previous study had found that incidence of VAP accounts for 9 % to 27 % endotracheal intubated patients, whereas VAP has a mortality rate ranging from 25 % to 50 % [1-3]. VAP increased ICU and hospital length of stay, antibiotic consumption, and healthcare cost (Zhi Mao et al, 2016) [4]. While using the subglottic suctioning could prevent and help the intubated patient to decreased the development of VAP. The study shown by Smith et al (2021) [5] SSD is a technique employed to reduce micro aspiration of oropharyngeal secretions in patients with cuffed endotracheal airways. Aspiration of oropharyngeal secretions is the accepted cause of the majority of ventilator-associated pneumonia (VAP), a complication of invasive ventilation with high associated mortality. Another study by Rahul Gujadhur et al (2005) [6], subglottic suction has also been shown to delay the onset of VAP but no benefits in terms of ventilation time, hospital stay or mortality benefit have ever been shown. This investigation into subglottic suctioning may assist the healthcare team, particularly in the intensive care unit, in preventing the development of VAP and shortening the duration of ventilation for patients. The advantages of subglottic suctioning are often debated, particularly regarding its impact on the duration of intubation. However, recent research indicates that implementing subglottic suctioning within a time frame of fewer than three days could help reduce intubation duration and lead to improved patient recovery.

How to cite this paper:

Fernandez, M. J., & Adarlo, R. (2025). Effectiveness of Subglottal Suctioning Could Prevent the Develop of VAP in the Patient on Mechanic Ventilator. *World Journal of Nursing Research*, 4(1), 118–119. DOI: 10.31586/wjnr.2025.6183

Keywords: Ventilator Associated Pneumonia, Subglottal Suctioning, Mechanic Ventilator

References

- [1] Diana P. Pozuelo-Carrascosa, Ángel Herráiz-Adillo, Celia Alvarez-Bueno, Subglottic secretion drainage for preventing ventilator-associated pneumonia: an overview of systematic reviews and an updated meta-analysis. *European Respiratory Review* 2020 29(155): 190107; DOI: <https://doi.org/10.1183/16000617.0107-2019>
- [2] Du J, Chengcong N, Wu X. Volume-based subglottic secretion drainage: a randomized controlled trial. *Ann Med Surg (Lond)*. 2024 Jan 5;86(3):1426-1432. doi: 10.1097/MS9.0000000000001695. PMID: 38463058; PMCID: PMC10923278.
- [3] Lacherade JC, Azais MA, Pouplet C, Colin G. Subglottic secretion drainage for ventilator-associated pneumonia prevention: an underused efficient measure. *Ann Transl Med*. 2018 Nov;6(21):422. doi: 10.21037/atm.2018.10.40. PMID: 30581830; PMCID: PMC6275406.
- [4] Mao, Z., Gao, L., Wang, G. *et al.* Subglottic secretion suction for preventing ventilator-associated pneumonia: an updated meta-analysis and trial sequential analysis. *Crit Care* 20, 353 (2016). <https://doi.org/10.1186/s13054-016-1527-7>

Received: July 28, 2025

Revised: August 31, 2025

Accepted: September 17, 2025

Published: September 19, 2025



Copyright: © 2025 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

-
- [5] Smith NW, Spivey M. Promoting subglottic secretion drainage: a quality improvement project in a UK critical care unit. *BMJ Open Quality*. 2021;10:e001269. <https://doi.org/10.1136/bmjopen-2020-001269>
- [6] Rahul Gujadhur, Bruce W. Helme, Aliu Sanni, Joel Dunning, Continuous subglottic suction is effective for prevention of ventilator associated pneumonia, *Interactive CardioVascular and Thoracic Surgery*, Volume 4, Issue 2, April 2005, Pages 110–115, <https://doi.org/10.1510/icvts.2004.100149>