

Nursing Workforce Dynamics and Health System Outcomes in ASEAN: A Meta-Analysis

Joezerk Jhon P. Biel, PhD, MAN, MPA, RN

ORCID No. 0009-0001-9669-6924

dr.jbiel@gmail.com

Philippine Christian University

Taft Avenue, Manila, Philippines

Abstract

The nursing workforce is a core determinant of health system capacity, yet comparative evidence on how nursing workforce performance has evolved across the Association of Southeast Asian Nations (ASEAN) remains limited. This study examined changes in nursing workforce availability, growth trajectories, relative adequacy, and the alignment between nursing education output and workforce stock across ASEAN countries between 2020 and 2025. A meta-analysis design was utilized, drawing on secondary data from the World Health Organization's State of the World's Nursing reports for 2020 and 2025. All ten ASEAN member states were included. . Workforce performance was operationalized using total nursing stock, nurse density per 10,000 population, percentage change in density, rank distribution, and education-workforce alignment. Findings revealed nursing workforce availability changed unevenly across ASEAN. Nurse density expanded in Indonesia, Lao PDR, Malaysia, Singapore, and Thailand; contracted in Cambodia, Myanmar, and the Philippines; and remained essentially stagnant in Brunei Darussalam and Viet Nam. Relative workforce adequacy did not converge; nurse density rankings remained stable while gaps widened between higher-density countries (Singapore, Brunei Darussalam, Philippines, Malaysia, Thailand) and lower-density countries (Indonesia, Viet Nam, Lao People's Democratic Republic, Cambodia, Myanmar). Nursing education output showed inconsistent alignment with workforce stock change, with misalignment evident in Cambodia, Myanmar, and the Philippines. The findings indicate divergence rather than convergence in nursing workforce performance across ASEAN and demonstrate that education output alone does not ensure workforce growth. It is essential that ASEAN countries align education planning with labor market absorption and retention capacity, strengthen early-career retention mechanisms, routinely monitor nurse density disparities, and provide targeted regional support to countries experiencing workforce contraction.

Keywords: Health Sciences; nursing workforce dynamics, workforce adequacy, education-labor alignment; meta-analysis, secondary data analysis; ASEAN, Southeast Asia