# The Relationship between the Skill Mix Model and Patient Mortality: A Systematic Review

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**Abstract :** Background: A skill mix model is regarded as one of the most effective methods of reducing nursing shortages, as well as easing nursing staff workloads and labor costs. Although this model shows several benefits for the health workforce, the relationship between the optimal model of skill mix and the patient mortality rate remains to be discovered. Objectives: This review aimed to explore the relationship between the skill mix model and patient mortality rate in acute care hospitals. Data Sources: A systematic search of the PubMed, Web of Science, Embase, and Cochrane Library databases and researchers retrieved studies published between January 1986 and March 2022. Review methods: Two independent reviewers screened the titles and abstracts based on selection criteria, extracted the data, and performed critical appraisals using the STROBE checklist of each included study. The studies focused on adult patients in acute care hospitals, and the skill mix model and patient mortality rate were included in the analysis. Results: Six included studies were conducted in the USA, Canada, Italy, Taiwan, and European countries (Belgium, England, Finland, Ireland, Spain, and Switzerland), including patients in medical, surgical, and intensive care units. There were both nurses and nursing assistants in their skill mix team. This main finding is that three studies (324,592 participants) show evidence of fewer mortality rates associated with hospitals with a higher percentage of registered nurse staff (range percentage of registered nurse staff 36.1%-100%), but three articles (1,122,270 participants) did not find the same result (range of percentage of registered nurse staff 46%-96%). However, based on appraisal findings, those showing a significant association all meet good quality standards, but only one-third of their counterparts. Conclusions: In light of the limited amount and quality of published research in this review, it is prudent to treat the findings with caution. Although the evidence is not insufficient certainty to draw conclusions about the relationship between nurse staffing level and patients' mortality, this review lights the direction of relevant studies in the future. The limitation of this article is the variation in skill mix models among countries and institutions, making it impossible to do a meta-analysis to compare them further.