



## INVESTIGATING THE EFFICACY OF NURSE-DRIVEN INTERVENTIONS IN MITIGATING THE WORLDWIDE DEFICIT OF NURSING PERSONNEL

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### Abstract

The objective of this research was to identify the variables that contribute to the scarcity of nurses in the workforce and examine their effects on nurses. Following the Cochrane library standards, a systematic search was conducted on five electronic databases (Research 4life—PubMed/Medline, Scopus, Embase, CINAHL) covering the period from 2010 to 2021. The remaining articles containing relevant information were compiled into a data extraction sheet for further thematic analysis. Four key themes were identified as contributing causes to the shortage of nurses in the workforce. These topics include obstacles related to policy and planning, hurdles to training and enrollment, factors that lead to nursing staff turnover, and the stress and burnout experienced by nurses. The worldwide shortage of nursing personnel is a complex issue that arises from several sources including individual, educational, organizational, managerial, and policy-making aspects.

**Keywords:** nurse burnout, nurse retention, nursing shortage, nursing workforce, systematic review

### 1. Introduction

Nurses are a crucial part of the healthcare workforce and make up the largest professional group within the healthcare system. They play a significant role in providing high-quality healthcare services and helping to improve health outcomes for individuals, families, and communities. This includes both preventative and curative measures (Alameddine et al., 2017; Drennan & Ross, 2019). In addition, nurses are highly esteemed professionals and frontline healthcare workers in the global healthcare system. They play a vital role not only in providing high-quality care but also in enhancing the efficiency of the health system. Therefore, having a



sufficient number of nurses is essential for bolstering the health system and achieving universal health coverage and other health-related goals (Aboshaiqah, 2016; Alameddine et al., 2017).

A significant challenge in the nursing profession today is the shortage of nursing workforce, which negatively impacts the quality of healthcare services and hinders efforts to improve global well-being and achieve universal health coverage (Adams et al., 2021; Alameddine et al., 2017; Kurjenluoma et al., 2017; Park & Yu, 2019; Yahyaei et al., 2022). This is a result of imbalances between the current number of nurses and the number of new nurses joining the nursing field, in comparison to the number of nurses needed to fulfill the patients' requirements (Hudgins, 2016). Multiple studies have found that there are inconsistencies in the availability of nurses to meet the necessary number of nursing professionals needed due to factors such as an aging population, retirements, new nurse recruitment, and retaining current nurses. This has made it challenging to meet the increasing demand for nurses.

It is estimated that approximately 3 million nurses are needed to address this gap, which is a challenging demand to meet (Yun et al., 2010). Additionally, by 2035, there is projected to be a deficit of 12.9 million skilled nurses and midwives (Adams et al., 2021; Yahyaei et al., 2022). Moreover, it is projected that the deficit of nurses might surpass 500,000 by the year 2025, and in Europe, there are predicted to be 590,000 unfilled nursing positions by the year 2020 (Valizadeh et al., 2016). Furthermore, the scarcity of nursing professionals in South Korea is a grave issue, as the average number of nurses per 1,000 people is just 6.9. This figure is much lower compared to other member nations of the Organization for Economic Co-operation and Development (OECD), which have an average of 9.2 or higher. According to Heijden et al. (2019), the scarcity of nurses in the next twenty years is expected to deteriorate in most industrialized countries within the European Union and other nations due to the imbalance between the supply and demand of nurses.

The World Health Organization (WHO) research estimates a global shortfall of 7.2 million healthcare professionals to provide healthcare services. By 2035, the demand for nurses is projected to grow 12.9 million (Adams et al., 2021). The worldwide shortage of nursing workforce is a significant concern that is impacting over one billion people, particularly vulnerable groups such as women and children who are in dire need of high-quality healthcare services (Aluko et al., 2019; Maré et al., 2019). The insufficient number of nurses has had significant adverse effects on patient health outcomes and has posed challenges in disease management and health improvement. This has led to increased workloads and stress levels among nurses, resulting in a decline in the quality of nursing care. Consequently, patient safety is compromised, and the mortality rate among patients increases (Heijden et al., 2019; Leineweber et al., 2016; Matsuo et al., 2021; Valizadeh et al., 2016; Varasteh et al., 2021; Yun et al., 2010).

The scarcity of nursing personnel has several issues that impact the healthcare system. If these problems are not quickly and effectively dealt with, the quantity of individuals in need of high-quality nursing care will continue to be impacted, making it challenging to achieve the

fundamental objective of enhancing and safeguarding person health (Matsuo et al., 2021; Valizadeh et al., 2016). These factors consist of a decline in the number of student nurses enrolling in nursing programs due to inadequate planning and funding availability, as well as an increase in early retirement due to health issues (Alameddine et al., 2017; Alshmemri et al., 2013; Barnett et al., 2010; Valizadeh et al., 2016). In Japan, the diminishing birth rate and growing population result in an insufficient workforce (Matsuo et al., 2021).

Moreover, the primary reason for the scarcity of nurses in Thailand is the rapid movement of healthcare professionals as a result of unfavorable working conditions and surroundings, as stated by Nantsupawat et al. (2017). In Singapore and other wealthy nations, nurses often migrate due to work discontent, as shown by studies conducted by Aeschbacher & Addor (2018), Alshmemri et al. (2013), Hung & Lam (2020), and Leineweber et al. (2016). Moreover, in Lebanon, the nursing workforce faces a significant challenge as a result of the substantial emigration rate of newly graduated nurses with a Bachelor's degree to other countries shortly after completing their studies, which is often referred to as brain drain (Alameddine et al., 2017). Insufficient policies and workforce planning are often cited as significant concerns in many nations (Abhichartibutra et al., 2017; Amadi, 2015; Maré et al., 2019; Mehdaova, 2017).

The frequent lack of nursing staff in a healthcare system can result in stress and burnout, which can negatively impact the performance of nurses and increase the likelihood of medical errors, particularly in patient treatment, clinical care, and laboratory tests (Aboshaiqah, 2016; Hung & Lam, 2020; Matsuo et al., 2021; Otto et al., 2019; Park & Yu, 2019; Varasteh et al., 2021). Gaining a comprehensive knowledge of the various variables that contribute to the lack of nursing personnel in the area is crucial in order to develop an effective plan to address the existing shortfall. The objective of this assessment is to examine the primary causes that have the greatest impact on the shortage of nursing personnel and to identify areas that need further investigation.

## **2. The stress and burnout experienced by nurses**

Nursing workforce scarcity has significant implications for nurses and patient health outcomes. Out of the 14 articles mentioned (Aeschbacher & Addor, 2018; Batran, 2019; Bradley et al., 2015; Guo, 2017; Heijden et al., 2019; Hung & Lam, 2020; Kakemam et al., 2019; Matsuo et al., 2021; Otto et al., 2019; Purohit & Vasava, 2017; Seitovirta et al., 2017; Varasteh et al., 2021; Wazqar, 2017; Yang et al., 2017), 29.2% of them reported an increase in stress, burnout, and psychosomatic disorders such as back and shoulder pain, anger, and worry as a result of excessive work. The repercussions of a scarcity not only impact the nurses themselves, but also extend beyond their family and social relationships. These factors have a substantial influence on nurses, resulting in a lack of early diagnosis of patient complications, inadequate patient care, and compromised patient safety.

## **3. Analysis and interpretation of the findings**

The persistent scarcity of nursing professionals is a longstanding problem that requires a comprehensive and efficient solution. The nurse shortage has a significant influence on the delivery of health services to the whole community, as shown by the results from the Ministry of Health (MOH) in 2018. Despite the implementation of methods to tackle the problem, the scarcity of nurses remains apparent. This research aims to investigate the healthcare professionals' view of the variables that contribute to the shortage of nursing staff and how it affects registered nurses in hospitals. The present research has identified the elements that contribute to the shortfall in the nursing profession and examined its effect on Registered nurses.

This systematic review identified several factors that contribute to the shortage of nursing workforce. These factors include ineffective policies, regulations, and strategies, poor policy and human resource planning, inadequate workforce planning and recruitment, incompetent implementation plans, frequent changes in government officers, and a lack of leadership management. The findings are supported by multiple studies (Abhichartibutra et al., 2017; Alreshidi et al., 2021; Amadi, 2015; Buchan et al., 2015; LeVasseur & Qureshi, 2019; Maré et al., 2019; Marufu et al., 2021; Park & Yu, 2019; Yun et al., 2010). The nursing shortage is exacerbated by factors such as an increased workload, unappealing working circumstances, substandard working conditions, and insufficient support, which often lead nurses to resign from their positions (Batan, 2019; Hung & Lam, 2020; Kakemam et al., 2019; Nantsupawat et al., 2017; Varasteh et al., 2021).

The findings also indicate that policy and planning barriers result in nurses receiving inadequate salaries, experiencing low job satisfaction, dealing with an increasing aging population and the need for replacement nurses, and facing insufficient incentives (Alameddine et al., 2017; Alreshidi et al., 2021; Amadi, 2015; Buchan et al., 2015; Hudgins, 2016; Jarrar et al., 2018; Kakemam et al., 2019; Maré et al., 2019; Marufu et al., 2021; Sirisub et al., 2019; Souza et al., 2017; Uthaman et al., 2016).

The findings on obstacles to training and enrollment indicate that the primary factors contributing to the nursing shortage are a decline in nurse enrollment and insufficient training for new nursing recruits. Insufficient training facilities such as limited space, lack of specialized classrooms, dormitories, and clinical settings for practice, lead to a reduced intake capacity (Aeschbacher & Addor, 2018; Alameddine et al., 2017; Appiagyei et al., 2014; LeVasseur & Qureshi, 2019). Moreover, the ongoing practice of importing expatriate nurses from other nations instead of providing training to local nurses also has substantial impacts on the nursing workforce (Aboshaiqah, 2016).

This review identifies several factors that contribute to nursing staff turnover, including professional vision towards nurses, lack of social support, work overload, and low-level job satisfaction. These findings are supported by various studies (Aeschbacher & Addor, 2018; Alameddine et al., 2017; Alshmemri et al., 2013; Atefi et al., 2016; Chan et al., 2013; Drennan & Ross, 2019; Gray et al., 2018; Heijden et al., 2019; Hung & Lam, 2020; Ke & Stocker, 2019;

Leineweber et al., 2016; Liu et al., 2018; Masenyani et al., 2018; Nantsupawat et al., 2017; Purohit & Vasava, 2017; Sirisub et al., 2019; Uthaman et al., 2016; Varasteh et al., 2021; Yang et al., 2017). Additionally, research indicates that inadequate salaries, lack of salary adjustments, unfavorable working conditions, and health issues leading to early retirement among older nurses contribute to nurse turnover. Furthermore, limitations on the use of new technology by older nurses also contribute to this turnover. These findings are supported by various studies (Adams et al., 2021; Aeschbacher & Addor, 2018; Alameddine et al., 2017; Hudgins, 2016; Kakemam et al., 2019; Mehdaova, 2017; Park & Yu, 2019; Sirisub et al., 2019; Souza et al., 2017; Uthaman et al., 2016; Yahyaei et al., 2022).

Moreover, the increased levels of stress, burnout, and psychosomatic disorders, such as back and shoulder pain, anger, and worry, resulting from excessive work hours not only impact nurses but also have consequences for their family and social relationships. These effects have been documented in various studies (Aeschbacher & Addor, 2018; Batran, 2019; Guo, 2017; Heijden et al., 2019; Hung & Lam, 2020; Kakemam et al., 2019; Matsuo et al., 2021; Otto et al., 2019; Purohit & Vasava, 2017; Seitovirta et al., 2017; Varasteh et al., 2021; Wazqar, 2017; Yang et al., 2017). The absence of early diagnosis of patient complications, inadequate treatment, and compromised patient safety lead to negative patient health outcomes (Batran, 2019; Kakemam et al., 2019; Masenyani et al., 2018; Seitovirta et al., 2017; Wazqar, 2017; Yang et al., 2017).

#### 4. Conclusion

The global scarcity of nursing personnel is a significant challenge in delivering high-quality healthcare services to the public, with the aim of enhancing health and well-being and achieving universal coverage. The insufficient availability of nurses has resulted in several adverse effects on patient health outcomes, as well as difficulties in combating illnesses and enhancing health. This also leads to a higher burden for nurses, which subsequently leads to a decline in the quality of nursing care. Additionally, it poses a danger to patient safety and contributes to mental health problems within the nursing profession.

The research consolidated the results of forty-two investigations. The scarcity in the nursing workforce and its consequences are the result of several issues, which may be classified as barriers to policy and planning, obstacles in training and enrollment, turnover of nursing personnel, and the subsequent effects on nurses and patient health outcomes.

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