Chapter

Global Critical Shortage of Nurses: Pathway to Solution

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Abstract

In 2020, the first State of the World's Nursing (SOWN) report published by the World Health Organization (WHO) revealed global nursing workforce to be at 27.9 million. SOWN estimated a current global nursing shortfall of 5.9 million. Furthermore, 17% of nurses are expected to retire in next 10 years. An estimated 5.3 million (89%) of that shortage is concentrated in low and lower-middle income countries, where the growth in the number of nurses is barely keeping pace with population growth. WHO global Strategic Directions for Nursing and Midwifery (SDNM) 2022 report has identified policy focus interventions for four major areas: education, jobs, leadership, and service delivery. Nurse advocacy groups like International Council of Nurses (ICN) are calling on governments to partner with various healthcare stakeholders to find tangible solutions in addressing global nursing shortage (NS).

Keywords: nursing shortage, global nursing crisis, global nursing disparities, nursing shortage an ethical concern, nursing supply strategies, nursing policies and practices

1. Introduction

Our world is one society at large, woven in one fabric of causation. What happens in one end of our world impacts us all. Coronavirus disease 2019 (COVID-19) pandemic has certainly affirmed, we as global community are only as stronger as our weakest link [1–5]. Having to manage exhausted health care workers (HCWs), supply chain limitations, and budgeting constrains from an economic meltdown, healthcare organizations are battling a 'perfect storm' in staying afloat. If the foundation of a structure is weak, that structure is bound to collapse in due time. Inability to protect our HCWs is analogous to failed health care systems. COVID-19 pandemic has been a catalyst in understanding the gaps in our healthcare ecosystem, hence an opportunity to fix them [6]. This chapter will attempt to discuss current dialogs, development of trends, and limitations among various actors in managing global critical shortage of nurses. Lastly, the authors will share their constructive implications for NS from a holistic lens.

2. Body: nurses - the building blocks of our healthcare ecosystem

For Healthcare industry, it is fundamental to ensure that patients receive a superior experience when journeying through their facilities. Face-to-face between

HCWs and patients is the path forward for safe and efficient patient-centred care. In a world that is already facing dramatic shortage of HCWs, WHO estimates an additional 18 million HCWs will be needed in the next decade [2, 7, 8]. Although, every HCW is essential in maintaining a functional healthcare system, in that, nurses are the 'building blocks' of any healthcare organization. There is a shift in power dynamics within the healthcare space from doctor being the pinnacle of primary care to patients and their nurse advocates gaining autonomy in practicing patient centred care. Nurses are the gatekeepers to patient engagement, spending more time with patients than any other HCW and patient experience satisfaction is highly dependent on these interactions [9].

3. Global critical nurse shortage

Healthcare industry was tackling global NS even before the pandemic. In 2020, WHO published SOWN report that highlights global nursing workforce to be 27.9 million, estimating 5.9 million NS globally [1].

The report indicates, 89% NS is concentrated in low-income and lower-middle-income WHO countries (Africa, South-East Asia, and Eastern Mediterranean) [2, 3]. Globally, 17% nurses are expected to retire in the next 10 years, needing to educate and employe 4.7 million nurses to only maintain current workforce numbers, without addressing the shortage [5]. In total, 10.6 million nurses will be needed by 2030 [3].

4. United Nations sustainable developmental goals

In 2015, United Nations (UN) Member States provided 17 Sustainable Developmental Goals (SDGs) to be achieved in global partnership, by all countries-developed and developing for peace and prosperity for all people and the planet, now and into the future [10]. Health worker density and distribution is indicator 3.c.1 of the UN SDGs, helping to track recruitment, development, training, and retention of healthcare workforce [10, 11]. In 2019, a systematic analysis for the global burden of disease (GBD) study measuring the availability of human resources for health (HRH) and its relationship to universal health coverage (UHC) for 204 countries and territories from 1990 to 2019 indicated, the world had 104·0 million (95% uncertainty interval 83·5–128·0) HCWs including 12·8 million (9·7–16·6) physicians, 29·8 million (23·3–37·7) nurses and midwives, 4·6 million (3·6–6·0) dentistry personnel, and 5·2 million (4·0–6·7) pharmaceutical personnel [11]. A global physician density of 16·7 (12·6–21·6) per 10,000 population, and a nurse and midwife density of 38·6 (30·1–48·8) per 10,000 population, was calculated [11]. GBD super-regions of sub-Saharan Africa, south Asia, north Africa, and the Middle East had the lowest HRH densities [11]. To reach 80 out of 100 on the UHC effective coverage index, an estimation per 10,000 population, at least 20·7 physicians, 70·6 nurses and midwives, 8·2 dentistry personnel, and 9·4 pharmaceutical personnel would be needed [11]. In total, the 2019 national health workforces fell short of these minimum thresholds by 6·4 million physicians, *30·6 million nurses and midwives*, 3·3 million dentistry personnel, and 2·9 million pharmaceutical personnel [11].

5. Gap broadens with COVID-19

Two-thirds (66%) WHO Member States report pandemic related disruption to health services due to factors related to HCWs [12]. COVID-19 has been devastating on all HCWs but especially nurses who have been front and center, managing heavy workload, long hours with maximum exposure to coronavirus, while caring for their patients. They will remain the mainstay profession in the recovery of post-COVID-19 health systems, even though it comes at a terrible cost of their overall well-being [5, 13]. WHO acknowledges, all though a "conservative" number due to underreporting, 115, 500 HCWs lost their lives because of COVID-19 [12]. Many nurses have died, others are mentally burnout, and many more continue to suffer physically; victims of long-haul COVID-19 syndrome because of poor provision of personal protective equipment (PPE) and inadequate access to vaccines [12, 13].

6. Nurse shortage - a multilayered complex problem

To fully articulate a solution means to consider the gaps and shortfalls in the political, social, economic, and institutional realities on and through which this issue is constructed. For example, if we only consider NS as a problem of numbers – then the temporary fix will be producing more nurses. If the shortage is associated towards nurses being dissatisfied with their working environment – then improvements in their work environment resolves that problem only. Only addressing these problems in isolation is merely a short-term fix and will result in relapse. Upon the request of 73rd World Health Assembly (WHA), WHO engaged with all WHO regions and updated global SDNM 2016–2020 to SDNM 2021–2025 in resolution with 74th WHA for NS policy action [4]. "To identify the most important policy actions, a prioritization exercise was conducted with over 600 nursing and midwifery leaders from ministries of health, national nursing and midwifery associations, regulators, WHO collaborating centres for nursing and midwifery, and the Nursing Now campaign in attendance at the biennial WHO global forum of Government Chief Nursing and Midwifery Officers and at the 'Triad' meeting hosted by WHO, the International Confederation of Midwives, and the International Council of Nurses. Regional and global consultation processes corroborated and helped refine the prioritized policies. The policy priorities are interrelated: the issues and policy responses in one are correlated with the issues and policy responses in the others" [4].

7. Pathway to solution

7.1 SDNM encompasses four areas

Education, jobs, leadership, and service delivery, for strategic direction [4]. Each area comprising of two to four prioritized policy actions are collectively interrelated and interdependent (**Table 1**).

EDUCATION →	JOBS →
Strategic direction: Midwife and nurse graduates match or surpass health system demand and have the requisite knowledge, competencies and attitudes to meet national health priorities.	Strategic direction: Increase the availability of health workers by sustainably creating nursing and midwifery jobs, effectively recruiting and retaining midwives and nurses, and ethically managing international mobility and migration.
Policy priority: Align the levels of nursing and midwifery education with optimized roles within the health and academic systems.	Policy priority: Conduct nursing and midwifery workforces planning and forecasting through a health labour market lens.
Policy priority: Optimize the domestic production of midwives and nurses to meet or surpass health system demand.	Policy priority: Ensure adequate demand (jobs) with respect to health service delivery for primary health care and other population health priorities.
Policy priority: Design education programmes to be competency-based, apply effective learning design, meet quality standards, and align with population health needs.	Policy priority: Reinforce implementation of the WHO Global Code of Practice on the International Recruitment of Health Personnel.
Policy priority: Ensure that faculty are properly trained in the best pedagogical methods and technologies, with demonstrated clinical expertise in content areas.	Policy priority: Attract, recruit and retain midwives and nurses where they are most needed.
LEADERSHIP →	SERVICE DELIVERY →
Strategic direction: Increase the proportion and authority of midwives and nurses in senior health and academic positions and continually develop the next generation of nursing and midwifery leaders.	Strategic direction: Midwives and nurses work to the full extent of their education and training in safe and supportive service delivery environments.
Policy priority: Establish and strengthen senior leadership positions for nursing and midwifery workforce governance and management and input into health policy.	Policy priority: Review and strengthen professional regulatory systems and support capacity building of regulators, where needed.
Policy priority: Invest in leadership skills development for midwives and nurses.	Policy priority: Adapt workplaces to enable midwives and nurses to maximally contribute to service delivery in interdisciplinary health care teams.

Global strategic directions for nursing and midwifery 2021–2025.

Table 1.
WHO (2021). Global Strategic Directions for Nursing and Midwifery (SDNM) 2021–2025 [4].

7.2 Nurse practitioners as primary care providers

One strategy being utilized in decreasing healthcare cost is to expand the scope of practice by shifting the delivery of treatment management to nurses. In 2015, Nebraska became the 20th state to adopt a law that allows nurses with advanced degrees to practice particular medical fields without a doctor's oversight [9]. The law helps rural areas that have trouble recruiting physicians but have high healthcare need due to aging populations to still provide care through nurse practitioners (NPs). "According to the Institute of Medicine, 14 NPs can be trained for the cost of a single physician, and research shows that primary care outcomes by NPs is equivalent to that of physicians" [9]. What this boils down to, evidence based research shows that, for certain forms of primary care, NPs are not only more cost-efficient by providing better value to the healthcare system but have also reduced morbidity and mortality when caring for vulnerable (aging, rural) population [9, 14–16].

7.3 Nurse shortage: "quick fix" recruitments a need for policy reform

Pre-pandemic NS along with pandemic has increased the demand for "fast-tack" international nurse recruitment by some high-income Organization for Economic Co-operation and Development (OECD) countries, which could undermine the ability of some "source" countries to respond effectively to pandemic challenges [17]. Even before the pandemic, the scale of the international flow of nurses was large, and growing. In 2019, OECD analysis highlighted more than 550,000 foreign-trained nurses were working across 36 OECD member countries, which was a marked increase on the 460,000 recorded in 2011 [17]. OECD reports the number and/or share of foreign-trained nurses has increased particularly rapidly in Belgium, France, Germany and Switzerland, with a steady growth also occurring in Australia, New Zealand, Canada [18] and the United States [17]. SOWN highlighted that countries experiencing low densities of nurses are mostly located in the WHO African, South-East Asia and Eastern Mediterranean regions, and in parts of Latin America, with countries accounting for the largest shortages (in numerical terms) in 2018 included Bangladesh, India, Indonesia, Nigeria, and Pakistan only to be worsened with population growth [1, 17]. In 2020, World Bank Group study examining nurse labour markets in countries (Botswana, Eswatini, Kenya, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Rwanda, Seychelles, South Africa, South Sudan, Tanzania, Uganda, Zambia, Zimbabwe) of the Eastern, Central and Southern African (ESCA) region reported, that demand for nurses was growing, but high vacancy rates (30–55%) in the public sector remained a problem [19]. Nurses do not fill posts due to "poor wage, remote location, lack of amenities, and poor working conditions" [19]. Additionally, the ECSA study highlighted, by 2030, 4.7 billion dollars would be required to train additional nurses to achieve the number needed in the 14 countries alone [19].

To adjust the supply and demand disproportion, international policy actors will require to reinforce policies upon OECD countries that lure nurses from low-income and lower-middle income countries. There is a growing policy emphasis on the potential of government- to- government bilateral agreements to "manage" international recruitment of nurses — these agreements must be independently monitored to assure full compliance by all parties [17]. Simultaneously, countries will need to invest an extra ~1% of GDP in their health workforce, as part of a broader investment package to boost health system resilience; basing this estimate on benchmarking analysis to estimate additional health workers, higher salaries, and medical reserve needed, said the head of health division at OECD in a presentation to the ICN Congress [20, 21]. Furthermore, one of the most powerful policy levers governments can use to adjust the supply of doctors and nurses to projected demand is so-called *numerus clausus*, that is, the regulation of the number of students entering medical and nursing education programmes; as in several OECD countries, *numerus clausus* policies are still based on weak evidence and opaque decision-making processes [20].

8. Conclusion

The need for collectively intervention with short and long term shared action plan is imminent in supporting global crisis of nurse shortage. Recurrence of NS overtime is perhaps a testament for a more beneficial analysis to address a complex issue, including many overlapping and interconnected problems from a global platform. As advocated by international actors that influence nursing policies and practices, there

is an overall need to invest in nursing education, jobs, leadership, and service delivery to meet the demand and maintain a steady supply of nurses [2, 3, 17].

The authors recommend following implementations:

1. Global standardization of nursing education – to provide cultural holistic care of the populations served in practice, due to vast migration and immigration trends.

2. Creating a central, open access education database of nursing best practices – to standardize general concepts and care; reduce duplication by central sharing of resources; osmosis of academic knowledge exchange enhances and increases mobility of data. Education needs to keep up with globalization.

3. International provision for student nurses from all countries to participate in clinical exchange programs – currently nursing programs in developing countries allow international students from similar caliber institutions to participate in an exchange program; however, such opportunities do not exist for nursing students enrolled in programs 'less visible' from lack of funding and/or their geo-political standings. A student nurses' color of passport or their.

4. A global hub for nursing licensure model – to facilitate mobility of sustainable best-practices for retention among countries.

5. National nursing bodies to hold a political seat in their respective ministry of health portfolios – collaboration on a political platform will enhance and enforce sustainable, constructive, inclusive, relevant policies and practices from, macro (national/governance), meso (institutional/academic), and micro (community/clinical) levels.

6. Offer standardized specialty nursing and NP programs - to meet the demand of primary care providers needed along with meeting the needs to care for patients in a specialized medical setting, which is becoming more-and-more norm of our healthcare ecosystem.

Without sufficient well-motivated and supported nurses, the global health system cannot function. A co-ordinated policy response at country level and internationally is urgently needed to improve nurse retention and give hope for the future sustainability of the nursing profession [17].

Author contributions

AB is the primary author, ZM is the co-author who partnered after the abstract was approved by the editors; Collectively, AB and ZM collaborated to revise and develop the search criteria, completed the initial search for the manuscript, and assessed articles for inclusion criteria; AB wrote the initial draft of the manuscript; ZM edited that draft; AB and ZM collectively finalized the final manuscript for submission.

Conflict of interests

The authors declare that there is no conflict of interest.

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Acronyms

COVID-19	Coronavirus disease 2019
ECSA	Eastern, Central, and Southern African
GBD	Global burden of disease
HCWs	Health care workers
HRH	Human resources for health
ICN	International Council of Nurses
NHWA	National Health Workforce Accounts
NS	Nursing/Nurse shortage
NPs	Nurse practitioners
OECD	Organization for Economic Co-operation and Development
PPE	Personal protective equipment
SOWN	State of the World's Nursing
SDNM	Strategic Directions for Nursing and Midwifery
SDGs	Sustainable Development Goals
UN	United Nations
UHC	Universal health coverage
WHA	World Health Assembly
WHO	World Health Organization

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