



## Tackling the Nursing Crisis in India: A Comparative Study and Its Impact on the Healthcare System

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**Abstract:** India's ambition of becoming a developed nation is being hampered by a critical shortage of nursing professionals, resulting in a nurses-to-population ratio at par below WHO-recommended standards. The shortage crisis undermines country's healthcare system, through adverse impacts on patient care quality, access to health services, and overall health outcomes. The article discusses disparity in nursing professionals' availability between India and Norway, and suggests need for additional investment and revamped policies in healthcare sector. This article sheds light on key challenges being faced by nursing healthcare sector in India, such as brain drain of nurses, an aging population, and a lack of quality nursing training college and institutions, and a shortage of supportive healthcare staff. The strict regulations of INC have worsened the situation, requiring reforms to meet increased demand by India's growing population. There should be a focus on implementing multifaceted approaches, including incentives, expansion of nursing training colleges and institutions, and certain policy interventions, to address the challenges.

**Kew words:** *nursing crisis, healthcare system, comparative analysis, nursing education, India, health, policy interventions*

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**Introduction:** India is growing rapidly and striving to achieve standard benchmarks as mentioned in the Human Development Index (HDI) to enter in the category of developed nations (Todaro & Smith, 2015). There is an urgent call for focusing on health parameters and



infrastructure in the economy as country' is willing to become the third-largest economy with a \$5 trillion GDP (*Government of India, 2019*). India is lacking in international standards as per availability of healthcare professionals (*measured per thousand people*), particularly doctors and nurses, are concerned (*World Health Organization, 2020*). The availability of nursing professionals in India is much lower in comparison to middle-income economies like Argentina, Brazil, and Thailand (*Karan et al., 2021*). The disparity among advanced and developing nations in availability of nursing professionals highlights challenges being faced by developing countries in meeting growing demand of such professionals.

There is significant gap between demand and supply for nursing professionals in India. The nurses-to-population ratio in India is 1.7, much below of recommended standards of 3 nurses per thousand people as stipulated by the *WHO (World Health Organization, 2020)*. The unavailability of adequate and highly-qualified nursing professionals is hampering healthcare sector in India by impacting quality of patient care, access to healthcare services, and overall health outcomes (*Drennan & Ross, 2019*).

**Table 1: Availability of Nursing Professionals (per thousand people)**

Category	Country	2000	2005	2010	2015	2019
Developed Nations	<u>Norway</u>	12.0	14.1	16.7	17.9	18.3
	<u>Switzerland</u>	11.9	13.0	19.2	21.5	18.0
	<u>Germany</u>	11.7	12.5	13.6	12.9	13.8
	<u>United Kingdom</u>	10.8	11.9	10.5	9.7	10.3
	<u>United States</u>	9.5	9.9	12.6	13.2	16.0
	<u>Canada</u>	10.0	9.9	9.3	9.8	10.3
	<u>Israel</u>	7.8	7.0	5.8	6.0	6.6
Developing Nations	<i>India</i>	1.2	1.3	1.4	1.8	2.4
	<i>Argentina</i>	2.3	2.5	2.5	2.6	2.7
	<i>Brazil</i>	3.8	3.7	5.2	9.1	7.4
	<i>Thailand</i>	1.1	1.5	2.1	2.4	3.2
	<i>Bangladesh</i>	0.2	0.3	0.2	0.3	0.4

Source: <https://data.worldbank.org/indicator/SH.MED.NUMW.P3>

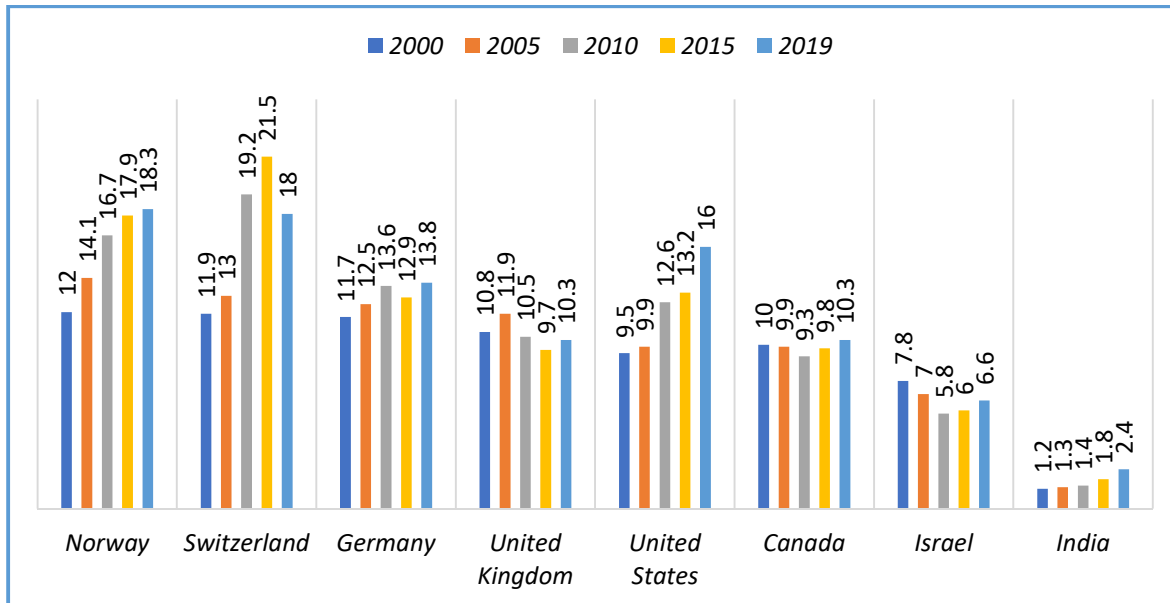


Figure 1: Availability of Nursing Professionals (per thousand people)

The data highlights the availability of nursing professionals (measured per thousand people) in different nations at global level. It is clearly conclusive that there is significant disparity in availability of nursing professionals in developed and developing nations (measured in nurses-to-population ratios). In 2019, the developed countries, such as Norway, Switzerland, and the United States, had the highest nurses-to-population ratios, much better than WHO-recommended standards. While the developing countries, like India, Argentina, Brazil, and Thailand were among nations having ratios much below WHO-recommended standards.

Due to shortage of nursing professionals, Indian healthcare sector failed to provide efficient and equitable service delivery to its citizens. Issues like enhanced waiting periods in hospitalization, long waiting periods at sub-centers and primary health centers, compromised quality of healthcare facilities, etc. may be seen in headlines of newspapers everywhere in the country (Drennan & Ross, 2019). Patients in rural areas and of marginalized communities in different regions of the country are severally affected by the shortage of nursing professionals at primary and sub-health centers (Karan et al., 2021). This article aims to provide evidence-based



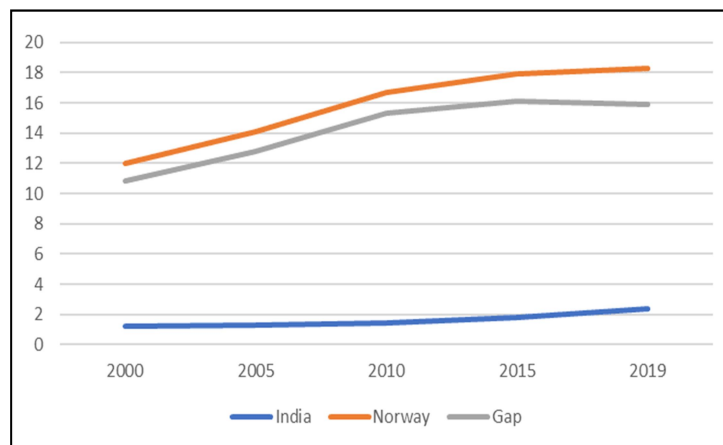
policy suggestions and the targeted interventions to tackle nursing crisis and strengthen the healthcare sector in India.

**A Study of India and Norway:** For critical analysis of the crisis, it is imperative to have a comparative study of nursing workforce in India and Norway in terms of nurses-to-population ratio. Norway is a developed country having a well-established nursing education system of high standards. India is a developing country facing challenges such as inadequate infrastructure, lack of highly-qualified faculty, and inaccessible quality training in nursing education system.

As a comparison, the gap between the two nations has been measured by the difference in availability of nursing professionals per thousand people and listed for different years in following table.

Country/Year	2000	2005	2010	2015	2019
India	1.2	1.3	1.4	1.8	2.4
Norway	12	14.1	16.7	17.9	18.3
Gap	10.8	12.8	15.3	16.1	15.9

Source: <https://data.worldbank.org/indicator/SH.MED.NUMW.P3>



**Figure 2: Gap Analysis of Nursing Professionals (per thousand people)**



It is conclusive from data that number of nursing professionals is increasing for both nations. It is worthwhile to mention that Norway's growth rate of nursing professionals is almost half (*approximately 50 percent*), compared to India's growth rate (*approximately 100 percent*) of nursing professionals. However, the gap between two countries is also increasing over time.

**Requirement of Nurses:** The shortage crisis of nurses in India is a complex issue, decided by several factors, such as limited career opportunities, low salaries, poor working conditions, and lack of effective recruitment strategies (*Karan et al., 2021*). These challenges have led to a high attrition rate among nursing professionals, with many opting for work in other countries or leaving the profession (*Sharma et al., 2016*). In view of increasing trend of population of India and WHO-recommended standards of nursing professionals, there is huge shortage of such professionals. The additional requirement (*in addition to existing number*) of nursing professionals has been prepared and calculated over the period from 2000 to 2019.

The data highlights requirements for more nursing professionals in India to cater to the growing population. The country's population increased from 105 crore in 2000 to 138 crore in 2019. The nurses-to-population ratio improved from 1.2 nurses per thousand people in 2000 to 2.4 nurses per thousand people in 2019. The absolute number of nurses increased from 12.71 lakhs in 2000 to 33.19 lakhs in 2019. The table reveals the gap between available and required number of nursing professionals along with additional requirement of such professionals. The additional requirement of nursing professionals increased from 127.15 lakhs in 2000 to 253.10 lakhs in 2019. This widening gap underscores the urgent need to expand nursing education and training programs to bridge the supply-demand gap.

Year/Variable	2000	2005	2010	2015	2019
Population of India (approx. in Crore)	105	115	124	132	138



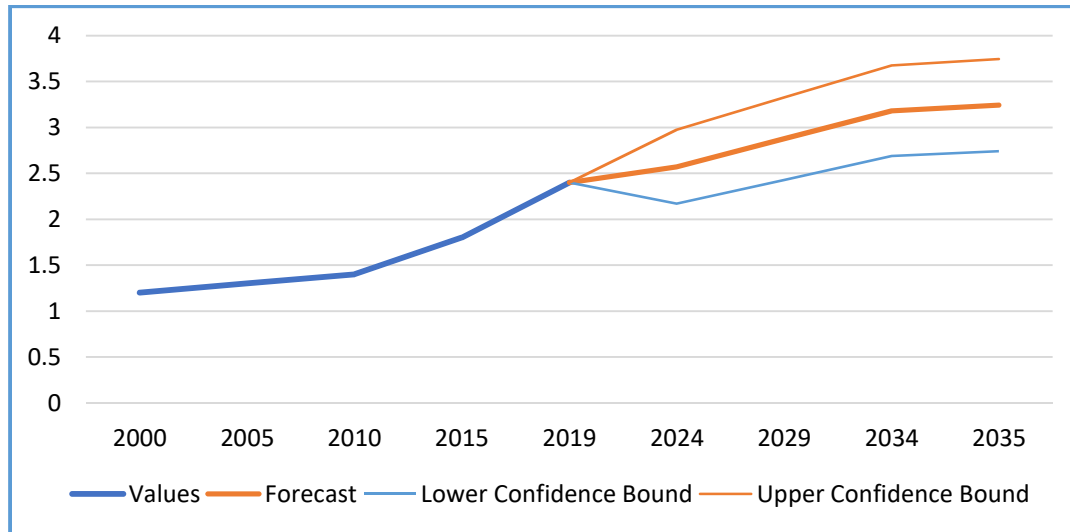
<i>Nurses per thousand</i>	<i>1.2</i>	<i>1.3</i>	<i>1.4</i>	<i>1.8</i>	<i>2.4</i>
<i>Existing number of nurses (in Lakhs)</i>	<i>12.71</i>	<i>15.01</i>	<i>17.36</i>	<i>23.81</i>	<i>33.19</i>
<i>Additional Requirement of Nurses (in Lakhs)</i>	<i>127.15</i>	<i>162.80</i>	<i>207.18</i>	<i>236.79</i>	<i>253.10</i>

*Source: Census of India database and WHO*

**Forecast of Nursing Professionals:** Based on assumption of an existing growth rate, the forecast of nursing professionals in India has been prepared. The table presents the forecast for nursing professionals in India, along with lower and upper confidence bounds.

<i>Table 4: Forecast of Nursing Professionals in India</i>				
<i>Timeline</i>	<i>Values</i>	<i>Forecast</i>	<i>Lower Confidence Bound</i>	<i>Upper Confidence Bound</i>
<i>2000</i>	<i>1.2</i>			
<i>2005</i>	<i>1.3</i>			
<i>2010</i>	<i>1.4</i>			
<i>2015</i>	<i>1.8</i>			
<i>2019</i>	<i>2.4</i>	<i>2.4</i>	<i>2.40</i>	<i>2.40</i>
<i>2024</i>		<i>2.5714447</i>	<i>2.17</i>	<i>2.97</i>
<i>2029</i>		<i>2.8761407</i>	<i>2.43</i>	<i>3.33</i>
<i>2034</i>		<i>3.1808368</i>	<i>2.69</i>	<i>3.67</i>
<i>2035</i>		<i>3.241776</i>	<i>2.74</i>	<i>3.74</i>

*Source: Author's own calculation from World Bank & Census of India database*



**Figure 3: Availability of Nursing Professionals (per thousand people)**

The actual values show a steady increase from 1.2 to 2.4 nurses per thousand people. For 2019, the forecast matches the actual ratio of 2.4 nurses per thousand people. The forecast suggests a continued upward trend, with projected nurses-to-population ratio to reach 2.57 in 2024, 2.88 in 2029, 3.18 in 2034, and 3.24 in 2035, respectively. However, the lower and upper confidence bounds indicate a range of uncertainty around these forecasted values.

The increasing forecast ratios imply that the number of nursing professionals in India is expected to grow at a faster rate than population growth, which may address shortage of such professionals in country. However, the confidence bounds alert towards careful monitoring and policy interventions to ensure that the actual ratio falls within an acceptable range to fill the demand-supply gap nursing professionals in the country.

**Status of Nursing Colleges in India:** The table mentioned below provides insights into status of nursing training colleges and institutions in India. It also highlights growth in number of such college and institutions offering various nursing courses over the years. In 2000, there were only 30 nursing training colleges and institutions for B.Sc. Nursing, which increased to 1,936 by 2018 and further increased to 2,127 by 2021. The number of nursing training colleges and institutions



offering M.Sc. Nursing increased from just 10 in 2000 to 701 by 2021, which indicates significant expansion of postgraduate nursing education in India.

The number of nursing training colleges and institutions offering Auxiliary Nurse Midwife (ANM) courses increased from 298 in 2000 to 1,949 in 2021. Similarly, number of nursing training colleges and institutions offering General Nurse Midwife (GNM) courses increased from 285 in 2000 to 3,275 in 2021. This rapid expansion in nursing education infrastructure across various levels is a positive step towards fulfilling the demand-supply gap of highly-qualified professionals in country. However, further efforts are required to ensure quality education and training to address the shortage of nursing professionals, effectively.

**Table 5: Availability of Nursing Professionals**  
(Source: Indian Nursing Council Annual Report)

Course	2000	2005	2010	2015	2016	2017	2018	2019	2020	2021
ANM	298	360	676	1921	1927	1798	1909	1904	1892	1949
GNM	285	983	2083	2958	3040	2820	3215	3212	3185	3275
B.Sc. Nursing	30	377	1326	1690	1752	1667	1936	1968	1996	2127
M.Sc. Nursing	10	59	315	577	611	581	643	653	667	701

**Required Nursing Training Colleges and Institutions in India:** The gap between actual and expected number of nursing training colleges and institutions highlights shortage of educational institutions for imparting nursing education in India. The shortage imposes challenges before growing demand for highly-qualified nursing professionals in country. The table mentioned below presents number of actual nursing training colleges and institutions in India from 2000 to 2019. The table also highlights expected number of nursing training colleges and institutions, and the difference between actual and expected figures. In 2000, there were only 30 nursing





training colleges and institutions in the country, which were lower than expected number of 300, with a deficit of 270 nursing training colleges and institutions. This gap continued to widen in the subsequent years, with difference reaching a staggering 14,480 in 2010 and 15,116 in 2015.

The number of nursing training colleges and institutions has increased over the years, and reached to 1,968 nursing training colleges and institutions in 2019. But it fell short of the expected figure of 15,006 nursing training colleges and institutions for that year, with a deficit of 13,038 nursing training colleges and institutions. The concerted efforts from policymakers, educational institutions, and healthcare organizations are crucial in establishing more nursing training colleges and institutions and expanding the existing infrastructure to meet the educational requirements for nursing workforce.

**Table 6: Availability of Nursing Professionals (per thousand people)**

<i>Year</i>	<i>Nursing Colleges</i>	<i>Expected Nursing Colleges</i>	<i>Difference</i>
2000	30	300	270
2005	377	4089	3712
2010	1325	15805	14480
2015	1690	16806	15116
2019	1968	15006	13038

**Key Challenges:** The Indian healthcare sector is struggling to provide quality and time bound delivery of primary, secondary, and tertiary healthcare services due to non-availability of adequate and highly qualified nursing professionals. One of the major challenges is the migration of trained nursing professionals to other countries due to better career opportunities, higher salaries, and improved working conditions in other countries. India's rapidly aging population has imposed tremendous challenges to delivery of quality healthcare services, as more attention



and care are required to tackle health issues of elderly. With progression of economic development and enhancement in quality of life in India, the demand for nursing professionals has surged significantly as people are giving more priority to health issues compared to earlier.

The challenges are being escalated by lack of sufficient nursing training colleges and institutions as per standards recommended by the WHO. The existing nursing training colleges and institutions are also facing challenges in creating adequate infrastructure, attracting highly-qualified faculty, and updating nursing curricula and other quality challenges, hampering quality of nursing education in India. The number of nursing training colleges and institutions has increased but the number is much below the required numbers according to population, coupled with aging population and increase in average longevity in country. Due to inadequate number of such colleges in India, there is limited scope for sufficient increase in nursing workforce to cater to its citizens as per recommended standards at global level.

Due to changing nature of healthcare demands after Covid-19 pandemic, inadequate availability of nurse physicians and home care visitors is a significant challenge for healthcare sector. These professionals play crucial role in providing primary healthcare services, particularly in rural and unreached areas. Apart from above, the Indian Nursing Council (INC) has imposed extremely rigorous and almost suffocating conditions for producing PhDs scholars in nursing academia. These challenges may be overcome by investing in the establishment of more nursing training colleges and institutions, improving quality of nursing education, and implementing policies to attract and retain highly-qualified professionals in country.

**Conclusions:** A comparative study of nursing professionals in India and other countries with well-established healthcare systems provides critical insights for understanding challenges before healthcare sector and solutions therein (*Sharma et al., 2016*). The nursing professionals' crisis in India imposed significant challenges before healthcare system and hampered aspirations of India of becoming developed nation. There will be requirement of more nursing professionals in India, keeping in view issues like migration of nurses, aging population, and an increase in average longevity, etc. The substantial gap between supply and demand for nursing professionals must be



addressed at earliest through more-skilling, up-skilling, and re-skilling. The Indian Nursing Council (INC) must initiate strategic decisions to relax extremely rigorous conditions for producing highly qualified nursing professionals at different academic levels such as ANM, GNM, B.Sc. and M.Sc. Nursing, Ph.D., etc. INC should work towards lineal regulatory reforms for improving enrolment in the nursing sector in line with the University Grants Commission (UGC), and other regulatory bodies.

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