

Demographics & Current Scenario with Respect to Dentists, Dental Institutions & Dental Practices in India

Abstract

India is the largest democracy and the second most populated country in the world. However, more than 70% of the people of India are residing in the villages. As, far as dentists and their availability is concerned to this huge population, the demand and supply ratio is far inadequate and insufficient. The dentists: population ratio of India, on date is 1: 10,000. However, the reality is that; in rural India 1 dentist is serving over a population of 2,50,000. Thus, the real picture is not that simple as it seems. As, we are about step into the next decade, there lies an urgent need to analyze the dental work force of the country and to study the scope and future of dentistry in the coming years. There are still many underserved groups that do not have any access to oral health care. To address the complex circumstances facing our dental workforce, solutions will almost certainly involve a broad spectrum of interests that include oral health and public health care professionals, representatives from minority interests, insurers and other payers such as businesses, consumers, and most importantly, central and state legislatures. Dental educators, including those in dental schools must work together to strengthen and build partnerships within these communities. It is only by working together with a common goal that dental education will have the means to meet the challenging diversity of oral health care needs facing our nation and to maintain a viable and strong academic dental education system.

Key Words

Demography, Quackery, Dentist:population ratio, Dental council of India

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Dental diseases are one of the most common of non-communicable diseases. Though they are rarely life threatening, they do impact the quality of life. Dental problems can cause severe pain, loss of man days & morbidity. Thus, they are an important public health concern. According to the World Health Organization (WHO), the prevalent oral diseases are dental caries, periodontal diseases & edentulousness.

“Dental diseases are expensive to treat however, simple to prevent.”

Demographics of India -

Situated majestically in the Asian subcontinent; India is the largest democracy & the 7th largest country in the world. It occupies 2.4% of the world's land area & supports over 17.4 % of the world's population. The demographics of India are remarkably diverse. India is the second most populous country in the world, with over 1.147 billion people (estimate for April, 2010), more than a sixth of the world's population & only China has a larger population. India is projected to be the

world's most populous country by 2025, surpassing China.¹

India is a country of diverse ethnic groups; geographical character, culture, religion and languages. It has 29 states and 6 union territories. The sex ratio at birth is – 1.05 male(s) / female(s). The average life expectancy is – 62.5 years & the literacy rate is – 65.38%.

However, India has an astonishing demographic dividend; where more than 50% of its population is below the age of 25 and more than 65% below the age of 35. It is expected that, in 2020, the average age of an Indian will be 29 years, compared to 37 for China and 48 for Japan. More than 70% of the people of India live in more than 5,50,000 villages, and the remainder in more than 200 towns and cities.

The total population of India is nearly 1.147 billion, with 637.38 million males & 509.62 million females.²

Demographics of Dentistry in India -

“A peep into the past : The history of dentistry in India”

The presiding deity of Bastar (The Goddess of tooth - Danteshwari) :

Danteshwari is a temple in the town Bastar of Jharkhand. It is believed that the tooth of Sati fell here where this temple is located today (Fig1).³



Fig 1. – Lord Shiva performing tandava with the dead body of Sati, during which the tooth of Sati had fallen at Bastar

Dentistry as portrayed in the Epic of Mahabharata :

Lord Krishna in Mahabharata wanted to test the “danaveerata” of dying Karan in the battle field of Kurukshetra. Disguised as Brahmin, Krishna asks for gold in donation & Karan proves his worth by donating his gold filled tooth (Fig 2). This part of the epic indicates the existence of dentistry even around 2500 BC, wherein defective teeth were restored with gold



Fig. 2 – Lord Krishna disguised as Brahmin and Karan donating his gold filled tooth

The Factual period :

Sushruta, the great surgeon of ancient India; taught dentistry scientifically at Kashi, about 600 B.C. During that period, dentistry flourished scientifically all over. However, thereafter; for ages dentistry remained in darkness as the Brahmins of ancient India abhorred to touch flesh, blood & pus. Even in the Mughal period, the thinking did not change much. However, scientific dentistry was reintroduced in India in the 19th century by the Britishers. In spite of this; for long dentistry predominantly remained in the hands of unqualified & even today in some parts of the country it still remains the same.

In 1924 – The 1st dental college of India was established in Calcutta by Dr. R. Ahmed.

In 1933 - The Nair dental college & Hospital, Bombay, came into existence.

In 1938 – The Govt. Dental college; Bombay, was started and thereafter there was no looking back.

Today we have come a long way from the hypothetical era to the age of scientific & evidence-based dentistry.

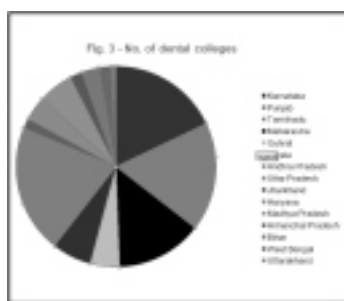
Dentists, Dental institutions and Dental practitioners in India –

There is a staggering of 289 dental schools in India (Table 2 & Fig 3), producing more than 30,000 graduates every year. [Dental Council of Indis’s fig. - 30,570 /Year] (Table 1)⁴

More than 2800 postgraduate students are enrolled every year (Table 3) in various

specialties of dentistry. (Dental Council of Indis’s fig. - 2,881 /Year).⁵

When we compare the dentist: population ratio of India to that of America, the population of America is nearly 33crores, & there were 108 dental colleges. However, considering the dentists: population ratio & to cut the no. of fresh dentists graduating every year, the no. of dental colleges in America are now reduced to 58.6 Thus, Comparing to the ratio of dentists: population of America, India should have only 119 colleges against 289. Similarly when comparing to the Chinese Population which is the world’s highest at 1.6 billion, there are only 160 dental colleges in China. In that direction, if we consider the dentists: population ratio of India, India should have only 112 dental colleges.



WHO recommends, dentist to population ratio of 1:7500. Dentists-to-population ratio of India, which was 1:300,000 in the 1960’s, stands at 1:10,000 today. However, the dentists: population in the Indian Army is far better at 1: 5,000; due to the fact that it is mandatory to see every individual’s teeth atleast once in a year in the Army. There is a total workforce of 1,18,000 dental practitioners in India at present, which is expected to swell to 2,25,000 shortly.⁷

Are really we short of dentists?

Considering the above facts and figures, the question arises that are we really short of dentists? To answer this query, one should understand the distribution of dentists in India. The problem lies at the level of distribution rather than the number of dental surgeons. About 80% of dentists work in major cities in India; compared to the population where more than 70% of the Indians reside in the rural areas. Very little oral health care services are provided in the rural areas, however; oral healthcare seeking behavior is also very low, especially among the rural population (Fig. 5). A mismatch exists between oral health professionals & the population they serve.⁸ Even with a workforce of 1,18,000 qualified

dentists in the country, the most basic oral health education & simple interventions are also not available to vast majority of population and that is the misery of the whole scenario.



Fig. 4,5 –Dental hygiene practices in rural india (Oral health is given low priority)

To elaborate, the other established reasons are as follows:

1. Geographical variations
2. Uneven dentists: population ratio
3. Poor specialist: Generalist ratio
4. Poor dentist: auxiliary ratio
5. Low priority given to oral health

According to the WHO, the provision of oral health care services are very little in rural parts of India, further complexity is lent by the great variation that occurs across this population on social parameters such as income and education.

Prevalence of dental caries is high & provision for restorative treatment is inadequate in most parts of the country. DCI’s National survey is been conducted to determine the prevalence of dental diseases in different states of India. Prevalence of dental caries is 40%-80% (Very high in Northern states 85%-90%), Periodontal conditions usually increase with age and are found more in rural areas. Oral cancer and precancerous conditions are 3%-10% (Highest being in Orissa 7% (World’s highest).⁹

Dental practices in India –

Barring aside quackery (Fig. 6), we have single unit dental setups to the most modern lavish multi-chaired exotic dental clinics, including dental spas having the most modern equipment and gadgetries spread all over in cities and metros.



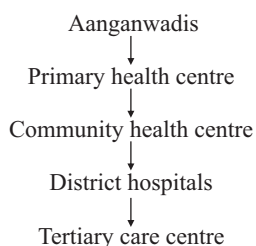
Fig. 6 – A quack sitting with a whole bunch of readymade dentures and another, filing the teeth of a patient in order to reduce the dental display

Health of a population depends on -

1. Health care delivery system
2. Socio-demographic profile of the population
 - a). Socio-economic status
 - b). Literacy rate
 - c). Health indicators eg. maternal and infant mortality rate, life expectancy etc.

Principle is “**Health for all**”, through primary health care approach, which is the foundation of rural health care system.

The integrated network



Only 15 – 20% of people in India are able to get dental services through national schemes. The annual per capita public health expenditure in India is no more than Rs.200.8 Thus, reach and quality of public health services have been below desirable standards. 80-85% of people are spending money from their pocket. May be due to this fact - Oral health care seeking behavior is very low in India, people rarely visit dentist and that too only in the event of pain. Although huge unmet treatment needs exists; striking inequality in delivery system, and absence of an adequate community-oriented prevention system is further aggravating the lack of reach of dental facilities in rural parts of India.

Surprisingly, only 1% of the total GDP is allocated for public healthcare moreover, there is no specific separate allocation for oral health-care. In the last financial year only 6% of the total GDP was allocated to health-related expenditures in India, whereas other smaller Southeast Asian countries with smaller population allocate nearly the same amount or more for health related activities. Even Maldives is spending 7.1% of its GDP on health-related activities.

The brighter side of the picture -

However, the brighter side of the picture is reflected in -

1. Growth in dental tourism - Quality of medical and dental treatment in metropolitan cities in India is as good as anywhere else in the world & is available at much cheaper rates when compared to the western countries. The cost of comparable dental treatment is 1/8th to 1/5th of that in western countries. The concept of dental tourism is gaining significance and near future will see a further growth in dental tourism. Medical, including dental tourism is expected to become a 2.2 billion US\$ industry by 2012. Tourism has increased more than 20-fold since 2000.¹⁰
2. Increased health care awareness – Robust national economic growth, rising family incomes, better socio-economic environment, rapid growth in private sector, increasing penetration of health insurance (including dental) have all made healthcare a fast growing private sector and leading to increased health awareness. Growing awareness has brought, increasing demand for better healthcare facilities. Many Indians are purchasing health insurance. Healthcare awareness among the urban people is considerably higher than the rural people.

Demand for quality healthcare at affordable costs is the natural outcome of this development

3. Increasing market size -

The Indian Healthcare market is at about 60 billion US\$. The industry is expected to grow to 150 billion US\$ by 2017. The Indian healthcare market is one of the largest services sectors, contributing 2% to the country's GDP.¹¹

4. High growth in domestic market –

Government has invested large sums in healthcare. India is among the top 5 countries that offer health services to poor in public sector. Subsidies are provided to the economically poor Financial assistance from nationalized banks is provided at 9% to 10% interest to establish private practices in rural areas.

5. Present Dental Industry -

Total market for the Dental equipments and materials is estimated to be around 50 million US\$ annually. The potential size of India's dental market is estimated to be vast.

6. High growth in import of dental products –

Another area that is experiencing steady growth is the import of dental products. India's market for dental products is extremely dynamic, with a current estimated growth rate of between 25 to 30%.

7. Health Insurance -

After liberalization of economic policy, a large number of private players have entered into the Indian market. Dental health insurance also, has become a part of comprehensive health insurance cover now.

8. Reduced import duty structure -

Government has liberalized the import policy and a uniform taxation system. Presently, the import duty is only 10.7% on 90% of the dental equipments & on the remaining 10 %, it is 26%. For Consumable dental products the dental import duty is a max. of 28%. The liberal policies of govt. has boosted global trading and created opportunities for international dental manufacturers.

9. World bank aid to set up infrastructure -

Even World bank is providing financial assistance to develop and run hospitals & diagnostic centers in rural areas; Govt. is also encouraging such initiatives to improve health care facilities.

10. National Rural Health Mission -

The government seeks to provide effective healthcare to rural population throughout the country. The Mission is an expression of the government's commitment to rise public spending from less than 1% to 2-3% of GDP. It is billed as the single-most largest program in the world to improve primary healthcare delivery in India. Govt. has also made center for oral cancer detection.

Conclusion

Dentistry faces serious problems regarding accessibility of its services to all in India. The major missing link is the absence of a primary health care approach. At present, in rural India one dentist is serving 2.5 lakhs of people whereas; the overall ratio of dentists to population in India is 1: 10,000.¹² Due to significant geographic imbalance in the distribution of dental colleges, a great variation in the dentist to population ratio in the rural and the urban areas is seen. Reports suggest that there are about more than one million unqualified dental health-care providers, or 'quacks', in India.¹³ They have long been blamed for misdiagnosing and mistreating.

Recommendations -

1. Emphasis on prevention to reduce the quantum of treatment requirements by improving and increasing the public dental healthcare system which will include health education, counseling, and health promotion. Prevention is always cheaper, less time consuming than treatment & does not require skilled labor.
2. Increase the employment of dentists in public sector.
3. There are only 11,000 sanctioned Govt. jobs in India. The irony is only 5,500 jobs are filled on date and the remaining are lying vacant. To begin with, remaining vacancies should be filled by the concerned authorities.
4. Increase public awareness by dental health camps and use of mass media.
5. Control the dentists: population ratio by -

a) Reduction of no. of dental colleges on the lines of America and China; further all academic dental institutions must meet quality standards established by the Dental council of India.

b). Encouraging dentists to establish practice in rural areas.

c). Govt. should further reduce import duty to make dental treatment affordable by more number of individuals.

The efficacy of future treatments are difficult to predict, however the demand for

dentistry is likely to increase. Thus, the future of dentistry is bright.

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Table 1. Growth in number of graduates from Indian dental schools

Year	Graduates
1960	1,370
1970	8,000
1980	13,930
1990	20,000
2010	30,570

Distribution of dental colleges in India (Table 2)

States	No. of colleges	Recognized seats	Approved seats
Karnataka	45	2800	250
Maharashtra	35	2030	990
Uttar Pradesh	31	1680	1200
Tamilnadu	30	1380	1340
Andhra Pradesh	21	1380	450
Kerala	16	360	460
Madhya Pradesh	14	760	500
Punjab	14	800	330
Gujrat	12	520	620
Haryana	10	660	200
Bihar	07	80	290
Himanchal Pradesh	05	340	-
West Bengal	05	170	280
Jharkhand	04	100	300
Uttarakhand	02	140	-

The specialty-wise distribution (Table 3)

1. Prosthodontists	435
2. Endodontists	421
3. Orthodontists	399
4. Periodontists	385
5. Oral surgeons	379
6. Pedodontists	270
7. Oral medicine	240
8. Oral pathologist	239