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Dental Public Health Scenario in India – An Overview

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ABSTRACT

Oral diseases are a major public health problem, and their burden is on increase in many low- and middle-income countries. Dental public health (DPH) aims to improve the oral health of the population through preventive and curative services. But lack of proficiency and skill among DPH personnel are always under question. India is a developing country, the second-most populated country in the world. Public dental health is a specialty branch of dentistry, the scope of which in India and other developing and developed countries is compared. In the early 1920s, the developing nations showed less caries, which increased at the end of 20th century. In developed nations, caries prevalence was more at the start of 20th century but reduced at the end of 20th century. This was owing to fluoride use and proper preventive measures. In India, nearly 70% of the population is rural based. Making it accessible for oral health care is the basic need. The scope of public dental health will be primarily prevention based. The aim of this review is to the scope and current status of dental public health (DPH) in India.

Keywords: dental public health, developed countries, developing countries, primary oral health care, scope

I. INTRODUCTION

India, the second-most populated country in the world, represents about 70% of the population in rural areas.[1] Oral diseases are also regarded as neglected epidemics as they do not directly cause morbidity.[2] The inclusion of dental treatments in health policies should be promoted.[2] National oral health policy should be made functional to provide effective oral care.[3-4] Overpopulation is a known chronic problem India is facing since many decades. Owing to this root course, dental public health (DPH) is put to the great burden. In the background, looking at the historical part, the prehistoric man faced low incidence of oral diseases or caries owing to simple lifestyle and raw, fibrous healthy diet. Dental caries or some oral diseases being also called as a disease of modern civilization, it stimulates the scope of DPH in India and other developing and developed countries.[6] DPH is a specialty branch of dentistry gaining a diverse profile of interest.[7]

Over the past few decades, health in India is gaining less importance, and oral health, the least.[8] Prevalence of oral diseases is very high in India with dental caries (50%, 52.5%, 61.4%, 79.2%, and 84.7% in 5, 12, 15, 35–44, and 65–74 years old, respectively)[9] and periodontal diseases(55.4%, 89.2%, and 79.4% in 12, 35–44, and 65–74 years old, respectively)[9] as the two most common oral diseases. It is well documented that there is an association of oral health with various systemic conditions such as diabetes, cardiovascular disorders, pregnancy, and its impact on quality of life.[10] Orofacial pain and loss of sensorimotor functions limit food choices and the pleasures of eating, restrict social contact, and inhibit intimacy.[11]

The main role of public health dentistry is to understand the distribution and determinants of oral diseases and to educate, motivate, and promote oral health in diverse populations.[8] Over the past decades, research and practice in dental public health (DPH) have been concentrated upon the two major problems – dental caries and periodontal disease.[8] According to estimates, about 50% of school children are suffering from dental caries and more than 90% of adults have periodontal diseases.[8] This increase in prevalence of dental diseases is observed parallel to the rapid nutrition transition in the recent decades and may also be one of its consequences.[12] Furthermore, India is called as the “oral cancer capital” of the world attributed to its high intake of both smoked and smokeless tobacco products, strongly associated with oral neoplasms.[11] Most of these highly prevalent oral diseases are largely preventable and can be reduced through various health promotion and preventive measures.[12]

Over the past 15–20 years, the context of DPH programs has been rapidly changing in India. As a result, scope and content of dental programs have also changed.[13] The public dental health

professional, with his/her understanding of dental problems and his/her competence in dealing with community affairs, can be a decisive influence in the development of health programs which are the best interests of both the public and the dental profession.[14] Even though the specialty has been doing its bit in improving the oral health situation since its inception, in the year 1969, there has been little to say about the achievements in India.[14]

Therefore, the present study was undertaken to review and analyze the current scenario of public health dentistry in India keeping in view the production, employment, and distributional patterns of public health dentists in India. The scope of DPH in India is also reviewed and discussed in this article.

Dental Public Health Workforce

The present trend in public health dentistry manpower is the increasing concern about the professional manpower.

Table 1 shows that there is interstate inequality among public health dentists in India.[15]

State	Number of dental institutions	Number of available public health dentists
Andhra Pradesh	22	50
Assam	1	0
Bihar	7	5
Daman and diu	1	1
Chandigarh	1	2
Chhattisgarh	6	3
Delhi	4	6
Goa	1	2
Gujarat	13	13
Haryana	12	25
Himachal Pradesh	5	4
Jammu and Kashmir	3	0
Jharkhand	3	0
Karnataka	45	143
Kerala	23	14
Madhya Pradesh	16	20
Maharashtra	35	28
Orissa	5	7

Pondicherry	3	5
Punjab	16	15
Rajasthan	15	35
Tamil nadu	29	50
Uttar Pradesh	33	72
Uttarakhand	2	0
West Bengal	5	2
Total	306	296
Outside the institution		117
Total public health dentists		413

The present data also show that there are a total of 5014 positions available for entering postgraduate training in dentistry in India in all the nine branches. Out of this, only 185 (3.68%) positions are available for postgraduate course in public health dentistry, which is least in all branches;[16-17] whereas in a country like India where the majority of the population resides in the rural areas, there is greater need for these specialists. However, at present, there is no policy for trained public health dentists to strictly serve the rural population.

Public health dentistry departments in the country are not rooted in the community, rather confined to hospitals.[18] This department has been used only to increase the number of patients to dental colleges to fulfill the minimum outpatient department requirement according to the DCI norms. It is seen as an advertisement agency for these colleges. Role of public health dentist has become that of a referring body. All these factors force people to seek dental care at private center.[19]

Primary Oral Healthcare

Primary oral healthcare, without any barrier, is still missing across several countries across the world primarily in low- and middle-income countries such as India.[19] Majority of the public (government) dental health-care setups are poorly equipped, understaffed, and oral health is not a priority in budgetary allocations. Not even 20% of the rural primary healthcare centers (PHCs) around the country have a dentist or a DPH professional. The government's goal of appointing a public health dentist at every community health center (CHC) looks like a distant dream as government is struggling to ascertain CHCs and as half of the CHCs are not functional.[20] The energies, talent, and precious time of public health dentists posted in PHCs and CHCs with limited dental materials are underutilized in some states. The CHC should be available for emergency care as well as dental care.[20]

Improving Oral Health through Mobile Dentistry

The introduction of mobile clinics into public health dentistry dates back to 1924.[21] They have been successfully used to provide dental treatment to schools, disabled patients, rural communities, industries, and armed forces of various countries. They may offer a viable option to address the issues of oral health-care delivery for an extensive underserved population in a developing country like India with scarce resources. Currently, MDVs are used for community training and rural posting for dental interns and postgraduates of the Department of Public Health Dentistry in India.[22] However, in some of the institutions, MDVs are predominantly used for curative services rather than preventive. Personnel with no qualification or training perform

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duties of chair-side assistant and peon in community programs. There should be active participation of postgraduates and staff of public health dentistry department during any outreach program. Preventive services such as fissure sealants and fluoride application should also be available during dental camps. MDV programs operational in postgraduate institutions have to rectify shortcomings regarding the facilities and manpower to improve the efficiency.[22]

Dental Tourism and Public Health

In the true sense, "Dental Tourism" implies to those individuals who travel from their area of residence to another location to avail dental services.[23] Indian dental market is showing a gradual increasing trend toward dental tourism. Dental tourism provides the possibility of both helping and hindering public health causes. On the one hand, procedures may become more accessible for those who cannot afford them or who live in an area where they are not available. On the other hand, dental tourism may be limiting the availability of providers as they perform procedures more profitably for out-of-town visitors, whom they can charge more. Because of the current lack of empirical research, we do not know if this is a positive or negative contribution to society. The data on dental tourism are sparse, and, hopefully, given the growing dental tourism market, the incentive to engage in such research will also grow.[24]

Programs on Dental Public Health

However, the representation of India toward DPH research on the international platform is negligible.[25] The newer opportunities in DPH research are epidemiological studies for the development of vaccines to prevent oral diseases, salivary proteomics in screening of oral cancers, epigenetics, oral health literacy, role of dentists in disaster management, and problem-based learning. Other subjects relating to DPH such as fluoridation of drinking water and commercial mouthwashes have also been a cause for concern, with some studies linking them to an increased risk of oral cancer being taken a back seat as it has not been possible to establish a causal relationship between the use of alcohol-containing mouthwashes and the development of oral cancer.[26] The maximum permissible limit of fluoride in drinking water in India is 1.2 mg/L.[27]

There are programs on tobacco awareness, but its use in India does not show significant decline in users. The Government enacted the Cigarettes Act (Regulation of Production, Supply and Distribution) in 1975.[28] However, it failed to accomplish much because it was not comprehensive in its coverage and was feeble in its provisions. Tobacco smoking was prohibited in all health-care establishments, educational institutions, domestic flights, air-conditioned coaches in trains and suburban trains, and air-conditioned buses, through a Memorandum issued by the Cabinet Secretariat in 1990.[29] Since these were mainly Government or administrative orders, they lacked the power of a legal instrument. The Government enacted the Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act (COTPA) in 2003.[30] During 2001–2002, a series of 13 tobacco cessation clinics was set up in 12 states across the country in diverse settings such as cancer treatment hospitals, psychiatric hospitals, medical colleges, nongovernmental organizations, and community settings to help users to quit tobacco use.[31] This network of tobacco cessation clinics was further expanded in 2005 to cover five new clinics in regional cancer centers in five states of which two centers were in the north eastern states of Mizoram and Assam, having high prevalence of tobacco use. The tobacco cessation clinics were renamed as tobacco cessation centers, and their role was expanded to include training on cessation and developing awareness generation on tobacco cessation.[32]

National Tobacco Control Programme

To strengthen implementation of the tobacco control provisions under COTPA and policies of tobacco control mandated under the World Health Organization Framework Convention on Tobacco Control, the Government of the India piloted National Tobacco Control Programme (NTCP) in 2007–2008.[33] The program is under implementation in 21 out of 35 states/union territories in the country. In total, 42 districts are covered by NTCP at present. The internal monitoring of implementation of COTPA in 21 states, where the NTCP is under implementation has revealed that only about half of the states (52%) have mechanisms for monitoring provisions under the law. a steering committee for implementation of section-5 (ban on tobacco advertisements, promotion, and sponsorship) has been constituted in 21 states, but only three states collected fines for the violation of this provision. Similarly, enforcement of a ban on the sale of tobacco products to minors and bans on the sale of tobacco products within 100 yards of educational

institutions also remains largely ineffective in many states.[34]

On a positive note, the country has also witnessed examples of community-level initiatives for tobacco control, for example, tobacco-free villages and educational institutions being reported from many states. Even before the revised smoke-free rules came into effect, Chandigarh was the first city to be declared smoke-free in 2007. This is an excellent example of partnership of state administration and civil society for tobacco control in the country. Sikkim was the first state in the country to be declared smoke-free in 2010.[35]

II. CONCLUSION

Exploding population is the root cause of the burden of DPH facilities. Hence, more ambitious and productive plans have to be made in the scope of DPH. Strong motivation in masses about oral care, dental-medical partnership, should be observed. Torchbearers such as school children and youths should be involved in raising awareness regarding oral care and anti-tobacco campaigning as they readily share the information with peers. These will aid in commitment to the prevention of oral diseases which is the ultimate goal in the broadened scope of DPH in both rural and urban populations. There is a need to broaden the scope of this specialty and to make it more practical. Proper orientation on this subspecialty of dentistry from the under-graduation level is the need of the hour. More public health dentists should be recruited in the government/public sector to raise awareness regarding oral health problems. Utilization of MDV is indispensable for the treatment camps, but preventive services should also be given importance. DPH education programs should be implemented on a priority basis to make people aware of the dangers of self-medication. There should be inclusion of dental health programs with family welfare programs by the government like in other developed countries. Political, social, organizational (both government and nongovernmental), professional dedication and support are needed to make oral health of this country comparable with general health.

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