Oral Health Policy in India: Challenges, Strategies & Future Directions

Dr. Neetu Kadu[1], Maitreya Adhav[2], Kaniz Ansari[3], Dr. Yogesh Adling[4]

[1]H.O.D Reader, Public Health Dentistry Home
[2,3]Undergraduate Student
[4]Professor

Abstract

The findings from this study illuminate critical areas for improvement within India's oral health policy framework. By addressing the identified barriers and fostering collaboration among stakeholders, there is potential for significant advancements in oral health outcomes across the country. Future research should continue to explore these dynamics, ensuring that policies are not only well-informed but also effectively implemented. Future directions may include conducting longitudinal studies to track the impact of newly implemented oral health policies on community health metrics over time, as well as investigating successful models of oral health care delivery both within India and internationally[17].

Introduction

Oral health plays a vital role in overall well-being, yet it is often overlooked in public health initiatives, particularly in developing nations like India. The World Health Organization (WHO) acknowledges that poor oral health can contribute to various systemic diseases, including cardiovascular conditions, diabetes, and even some forms of cancer[1]. However, in India, oral health has not received the attention it deserves within the broader healthcare framework, despite the rising prevalence of dental issues such as cavities, gum diseases, and oral cancers[2]. Several factors, including inadequate access to dental services, lack of awareness, and socio-economic disparities, particularly in rural and marginalized urban communities, have further worsened the situation[3].

One of the significant barriers to improving oral health in India is the stark inequality in access to dental care. The country faces a shortage of qualified dental professionals, especially in rural regions, where the majority of the population resides[4]. According to the National Health Policy (2017), India has approximately one dental professional for every 10,000 people, which falls significantly short of recommended standards. Additionally, most oral healthcare services are concentrated in urban areas, leaving rural communities with limited or no access to essential dental treatments. Economic constraints also play a major role, as the high cost of private dental services makes them unaffordable for many low-income individuals[6].

Despite these challenges, several initiatives have been introduced to enhance oral healthcare in India. The National Oral Health Programme (NOHP), led by the Ministry of Health and Family Welfare, aims to raise public awareness, promote preventive measures, and improve access to dental services[7]. Moreover, innovative approaches such as mobile dental clinics and school-based programs have shown promise in bridging the healthcare gap[8]. However, the effectiveness of these programs remains limited due to inadequate funding, infrastructural challenges, and the need for better coordination among

stakeholders[9].Moving forward, strengthening oral healthcare in India requires better integration with the overall healthcare system and a shift toward preventive care. Incorporating oral health into the Universal Health Coverage (UHC) framework, expanding tele-dentistry, and leveraging other technological advancements can help address gaps in accessibility and quality of care[10]. Additionally, enhancing regulations, expanding the dental workforce, and implementing widespread public awareness campaigns are crucial for developing a more inclusive and sustainable oral health policy[11]. This research aims to critically assess the current state of oral health policies in India, identifying key challenges, evaluating existing strategies, and exploring potential improvements. Understanding the gaps in policy implementation and barriers to effective oral healthcare is crucial in formulating comprehensive and equitable solutions [2,12]. This study will also examine innovative approaches such as tele-dentistry and mobile dental units, which have shown potential in addressing accessibility issues [8]. Furthermore, it will explore how oral health can be more effectively integrated into India's broader healthcare system to ensure fair access to quality care, especially for rural and underserved communities [3,13].By investigating these aspects, this research seeks to provide data-driven recommendations for policymakers, healthcare professionals, and public health organizations, ultimately contributing to policies that enhance oral health outcomes across India[9].

Methodology

This cross sectional study was conducted to identify gaps in existing policies and propose actionable recommendations to enhance oral health outcomes across diverse populations. The study participants were of the age 22 and above including dental students, interns, Academicians and clinicians. A closed ended structured questionnaire was developed which includes 24 questions divided into 7 sections:

Section 1: Demographic details, Section 2: General knowledge on oral health and policy Section, 3:Lack of access in implementing oral health policy in India Section 4: Challenges in infrastructure of Oral health policy, Section 5: Policy implementation in oral health policies, Section 6: Research Policy in oral health policies and Section 7: Future directions and Recommendations. To check the validity of the questionnaire a pilot study was conducted to test the feasibility and clarity of the questionnaire. The sample size was calculated using OpenEpi version 3. i.e 200 with a 95% confidence interval and 80% power sample. To ensure the validity and reliability of questionnaire , Cronbach's reliability analysis was performed by computing the internal consistency coefficient using the formula

$$A = [k/(k-1)] \times [1 - (\Sigma \varsigma_i^2 / \sigma_x^2)]$$

Which gave us cronbach alpha value of 0.8 indicating good reliability.

An online questionnaire was distributed through social media platform like WhatsApp, Gmail etc. To gather data from a broader audience regarding oral health policies in India. The use of online platforms for questionnaire distribution allowed for efficient data collection, reaching participants across various geographical locations.

The data collected from online questionnaire were meticulously entered into an Excel spreadsheet for thorough organization and analysis. Statistical analysis was conducted using SPSS version to interpret the data effectively, employing various statistical tools to derive meaningful insights. The results were subsequently presented in the form of graphs and tables, which facilitated a clearer understanding of the trends and patterns observed in the study.

Result

In our study among 206 study participants, the mean age is 29.98 ± 8.17 years. The gender distribution showed 52.4% were female and 47.6% were male. Regarding the professional categories, 36.9% were Private Practitioners, 22.3% were Postgraduates, 18.9% were Interns, 16.5% were Academician Practitioners, with Government Healthcare Professionals representing 4.9% of the respondents.

Table 1: Demographic Characteristics Of Study Participants

Characteristics	n (%)
Gender Distribution	
Female	108 (52.4)
Male	98 (47.6)
Professional Category	
Private Practitioners	76 (36.9)
Postgraduate	46 (22.3)
Interns	39 (18.9)
Academician Practitioners	34 (16.5)
Government Healthcare Professionals	10 (4.9)

Table 2 shows that the majority of respondents (55.3%) reported that they are 'Somewhat aware' about oral health policies, while 34.4% reported 'Much' awareness. Only 9.7% reported being 'Not aware'. Regarding engagement frequency, most respondents engaged with updates either 'Occasionally' (45.6%) or 'Rarely' (40.3%), with fewer engaging 'Regularly' (12.1%). For information sources, Research Articles & journals were the most common source (32.0%), followed by other sources (30.6%), Dental Associations (21.4%), and Conferences/seminars (18.9% each). Government websites (16.0%) and News/Media (11.7% each) were less commonly used sources.

Table 2: Awareness, Engagement, and Information Sources Related to Oral Health Policies

Characteristics	n (%)	Characteristics	n (%)	Characteristics	n (%)
Awareness Level		**Engagement Frequency**		**Information Sources**	
Somewhat aware	114 (55.3)	Occasionally	94 (45.6)	Research Articles & journals	66 (32.0)
aware	72 (34.4)	Rarely	83 (40.3)	Other sources	63 (30.6)
Not aware	20 (9.7)	Regularly	25 (12.1)	Dental Associations	44 (21.4)
		Never	3 (1.5)	Conferences	39 (18.9)
				Seminars	39 (18.9)

				Government websites	33 (16.0)
				News	24 (11.7)
				Media	24 (11.7)

Table 3 shows that the majority of respondents (59.2%) believe that the current state of oral health research in India 'Needs improvement', while 24.3% find it 'Satisfactory', and only 5.8% rate it as 'Excellent'. Regarding barriers to conducting oral health research, 77.2% of respondents identified 'All of the above' (including lack of funding, limited researchers, and poor collaboration) as major challenges, with 11.7% specifically highlighting 'Lack of funding and resources' as the primary barrier. For government encouragement of research, 70.4% supported a comprehensive approach ('All of the above'), while 12.1% emphasized 'Offering financial grants for research projects' and 11.7% prioritized 'Establishing dedicated research institutes' as key initiatives.

Table 3: Research and Policy Analysis in Oral Health

Characteristics	n (%)	Characteristics	n (%)	Characteristics	n (%)
Current State of Research		**Major Barriers**		**Government Encouragement**	
Needs improvement	122 (59.2)	All of the above	159 (77.2)	All of the above	145 (70.4)
Satisfactory	50 (24.3)	Lack of funding and resource	24 (11.7)	Financial grants for research	25 (12.1)
Unsatisfactory	19 (9.2)	Limited trained researchers	14 (6.8)	Dedicated research institutes	24 (11.7)
Excellent	12 (5.8)	Poor collaboration	8 (3.9)	Recognizing research	9 (4.4)
Need improvement	3 (1.5)	All of the above	1 (0.5)	All of the above	3 (1.5)

Table 4 shows that, regarding the biggest obstacles in implementing oral health policies, the study population has identified poor local execution (9.7%) and inadequate government funding (9.2%) as key barriers, whereas more than 75% study population believes that combination of both poor local execution and lack of government funding both are the biggest obstacles in implementing oral health policies.

Table 4: Implementation Challenges and Future Directions in Oral Health Policies

Obstacle in Implementation	n (%)	Infrastructural Improvement	n (%)	Government Focus Area	n (%)
Poor policy execution at the local level	20 (9.7%)	Establishing dental clinics in rural areas	23 (11.2%)	Increasing access to dental care in rural arcas	24 (11.7%)

Lack of government funding	19 (9.2%)	Equipping healthcare facilities with advanced technologies	19 (9.2%)	Promoting preventive dental health	13 (6.3%)
Both	156 (75.7%)	Both	151 (73.3%)	Both	154 (74.8%)

The results revealed mixed opinions on recent amendments to the National Health Policy. While some respondents acknowledged improvements, many viewed the changes as incomplete. A significant finding was the broad agreement on the need for stronger collaboration between private clinics and government programs to enhance dental care accessibility. This indicates that integrating public and private sector efforts could help address systemic barriers limiting quality oral healthcare services.

The survey also highlighted broader challenges in oral healthcare delivery. Key concerns included resource shortages, uneven facility distribution, and low public awareness, particularly in rural and semi-urban areas. Respondents noted difficulties in incorporating preventive dental practices within clinical settings and pointed to inadequate coordination between medical and dental professionals as a barrier to effective policy implementation. Additionally, there was strong support for research focused on practical, need-based studies to inform targeted strategies and improve oral health policies. These findings underscore the necessity of a comprehensive, multi-pronged approach to addressing the persistent challenges in oral healthcare across India.

Discussion

The landscape of oral health policy in India presents a complex interplay of challenges, strategies, and future directions, as evidenced by recent survey results. The study involving 206 participants revealed a mean age of approximately 30 years and a gender distribution leaning slightly towards females. This demographic representation is crucial as it reflects a diverse range of perspectives within the oral health sector, which is essential for formulating effective policies.

Awareness and engagement levels regarding oral health policies were notably varied among participants. A majority of the study population reported being "somewhat aware" of these policies, while a significant portion engaged with updates only occasionally or rarely . This suggests a gap in both awareness and active participation in policy discourse, which is echoed in other studies. For instance, Kumar and Gupta (2023) noted that gaps in policy implementation often stem from insufficient guidance and support for healthcare professionals, which can similarly affect the dissemination of health information[10][11].

The survey results further indicated that a substantial majority of respondents believe that the current state of oral health research in India "needs improvement." Nair and Rao (2023) discussed the barriers to effective oral health care delivery, highlighting the need for increased investment in research and improved collaboration among stakeholders[12],[13]. The identification of "all of the above" as major barriers to conducting oral health research by 77.2% of respondents underscores the systemic issues that hinder progress in this field.

Moreover, the challenges in implementing oral health policies were highlighted, with over 75% of participants identifying poor local execution and inadequate government funding as significant obstacles. This resonates with the findings of Sheikh and George (2023), who pointed out that regulatory failures in healthcare often stem from a lack of effective oversight and support mechanisms[14]. The need for stronger collaboration between private clinics and government programs was also emphasized, suggesting that

integrating public and private sector efforts could enhance accessibility to dental care, a sentiment echoed in the broader discourse on health policy in India[15].

Based on the findings from the survey on oral health policy in India, several key recommendations can be made to improve awareness and involvement in these policies. Firstly, it is essential to implement educational programs aimed at both the public and healthcare professionals. These initiatives can help enhance understanding and encourage active participation in conversations about oral health policies. For example, incorporating oral health education into school curriculums can raise awareness from a young age and promote healthy habits early on. Additionally, fostering stronger collaboration between the public and private sectors is crucial. Public-private partnerships can improve access to oral health services, especially for underserved groups. Finally, seeking increased funding for dental research is vital[16]. Enhanced research efforts can address gaps in knowledge and ultimately lead to improved oral health outcomes for the entire population.

While the survey provides valuable insights, certain limitations should be recognized. One important limitation is the demographic makeup of the participants, which had a higher representation of females. This may lead to a limited understanding of general attitudes towards oral health policy, as males might have different viewpoints. Moreover, self-reported data about awareness and engagement can be subject to biases, which may inflate the actual level of participation reported. The sample size of 206 participants also restricts the ability to generalize the findings to the broader population. Additionally, challenges related to collecting data from rural areas may have further limited the diversity of opinions captured in the survey. Therefore, future studies should aim for larger, more representative samples to gain a more comprehensive understanding of public engagement with oral health policy in India.

Conclusion

The findings from this study illuminate critical areas for improvement within India's oral health policy framework. By addressing the identified barriers and fostering collaboration among stakeholders, there is potential for significant advancements in oral health outcomes across the country. Future research should continue to explore these dynamics, ensuring that policies are not only well-informed but also effectively implemented. Future directions may include conducting longitudinal studies to track the impact of newly implemented oral health policies on community health metrics over time, as well as investigating successful models of oral health care delivery both within India and internationally[17]. Additionally, engaging in participatory research that includes the voices of underserved populations can provide valuable insights, urging policymakers to develop more inclusive strategies. Expanding the scope of research to assess the intersection of oral health with overall health and socioeconomic factors will also be crucial, ensuring that oral health policy measures are integrated into broader health policies to achieve holistic health improvements across the population.

References

1. World Health Organization. Oral health: Key facts. World Health Organization, 2021, pp. 1-2.
2. Kumar A, Sharma P, Verma R. Prevalence and impact of oral diseases in India: A public health concern. J Dent Res Public Health, 2020, 12(3): 145-160.
3. Rani S, Gupta N, Mehta P. Socio-economic barriers to oral healthcare in India: Challenges and solutions. Int J Public Health Policy, 2021, 9(2): 78-92.
4. Mohan K, Patel D. The shortage of dental professionals in rural India: An emerging crisis. Indian J

Healthcare Stud, 2019, 7(1): 34-50.

5. Ministry of Health and Family Welfare. National Health Policy 2017. Government of India, 2017, pp. 1-12.

6. Gupta R, Kumar S, Rao L. Economic constraints in accessing dental care in India: A cross-sectional analysis. Asian J Dental Sci, 2022, 15(4): 200-215.

7. Government of India. National Oral Health Programme (NOHP): A strategic framework. Ministry of Health and Family Welfare, India, 2014, pp. 1-20.

8. Singh V, Mishra A, Das P. Effectiveness of mobile dental clinics in improving oral health accessibility in India. Community Dent Health J, 2020, 18(2): 112-128.

9. Pillai M, Choudhury R, Nair S. Challenges in implementing oral health programs in India: A policy perspective. J Health Policy Res, 2021, 10(3): 89-104.

10. Kumar R, Shankar T. The role of tele-dentistry in bridging healthcare gaps in India. J Digital Health Innov, 2023, 6(1): 45-60.

11. Rao P, Srinivasan K, Iyer V. Expanding dental workforce and public awareness: The need for a sustainable approach. Indian J Oral Health Policy, 2021, 14(3): 155-172.

12. Kumar A, Sharma P, Verma R. Prevalence and impact of oral diseases in India: A public health concern. J Dent Res Public Health, 2020, 12(3): 145-160.

13. Rani S, Gupta N, Mehta P. Socio-economic barriers to oral healthcare in India: Challenges and solutions. Int J Public Health Policy, 2021, 9(2): 78-92.

1. 14.Sheikh K, George A. Regulatory Frameworks and Health Policy Implementation in India: Challenges and Opportunities. Health Policy Plann, 2023, 38(3): 345-356.

14. Kumar S, Gupta A. Oral Health Policy in India: A Review of Current Trends and Future Directions. J Public Health Policy, 2023, 44(1): 45-60.

15. Nair SK, Rao PS. Barriers to Effective Oral Health Care Delivery in Rural India: A Qualitative Study. Int J Health Serv, 2023, 53(2): 123-138.

16. Patel R, Sharma M. Integrating Oral Health into Primary Health Care: Lessons from Global Practices. BMC Health Serv Res, 2022, 22(1): 678.