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Oral health promotion for the indigenous population in India

Pradnya Kakodkar
Deputy Director Research, Dr. D. Y. Patil Vidyapeeth,
Sant Tukaram Nagar, Pune, Maharashtra- 411 018, India;
Email: pradnya.kakodkar@gmail.com

Abstract

This article details the oral health problems among the indigenous population of India and the different oral health promotion methods to address the disease burden. Seven different integration methods have been discussed, viz: Community outreach and Engagement model, School based model, Workforce model, Allied health professional model, Mobile Dental Service model, Integrated network and Oral health promotion through the use of traditional methods. Different methods individually or in combination can be implemented for the upliftment of the oral health of the indigenous people.

Keywords: Indigenous population, oral health, folk claim, oral disease, India.

Introduction

Indigenous population are communities that live within, or are attached to, geographically distinct traditional habitats or ancestral territories, and who identify themselves as being part of a distinct cultural group, descended from groups present in the area before modern states were created and current borders defined (WHO). They are culturally distinct societies and communities and there are approximately 476 million Indigenous people worldwide, in over 90 countries (World Bank, 2019). In India alone there are 700 tribal groups with a population of 104 million people, which is only second to the largest African tribes (Census Info, 2011)

The tribal population primarily inhabits rural and remote areas and is among the most vulnerable and marginalized section of the society (Narain, 2019) .While there is an increasing trend in the prevalence of chronic diseases such as diabetes, hypertension and cancer, associated with the use of tobacco, lack of physical activity and consumption of unhealthy diet among the Indian population, a similar increase is also being experienced by the tribal populations in India (Narain, 2019).

Oral Health among indigenous population

Oral health is the mirror of general health. Oral health problems either pose as symptoms or cause exacerbation of general health diseases. Dental decay, periodontal diseases, oral cancer, malocclusion and edentulousness are the important dental problems. Among them, periodontal disease has an association with certain systemic conditions, like atherosclerotic vascular disease, pulmonary disease, diabetes, pregnancy-related complications, osteoporosis, and kidney disease (Kane, 2017). Table 1 details the oral health status among the different tribes in India. It is evident from the table that there is high disease burden. But literature reports scanty data assessing the oral cavity of the indigenous population in India, in comparison to the greater number of tribes in India.

Barriers to Health care

Health care in general is not available to the majority of the tribal population due to the following reasons: Lack of accessibility to health facilities, non-availability of health staff in the health centres, non-availability of essential drugs and equipment's, lack of proper building facilities, difficult terrain and constraints of distance and time , lack of transport and communication facilities and traditional practices and superstitions [Local beliefs, customs, and practices have obstructed health care delivery to the tribals] (Bala & Thiruselvakumar, 2009). Particularly in oral health there is a gap of 80-20 (80% disease is prevalent and only 20% care facility is available). There is low priority for oral health in relation to general health diseases. Lack of professional and political advocacy for oral health and for redistributing resources and poor living conditions. Further, there is dominance of the restorative approach and no knowledge of prevention and importance of oral health.

Owing to the disease burden and the barriers encountered towards oral health care among the indigenous population, following oral health promotion methods have been enlisted.

Oral Health promotion through integration

Integrated care is defined as bringing together inputs, delivery, management and organisation of services related to diagnosis, treatment, care, rehabilitation and health promotion. Integration is possible at different levels:

1.Community outreach and Engagement model. Drs Abhay and Rani Bang engaged the people of the community at Gadchiroli and initiated Shodhgram (a village hospital). The main aim was to reduce Neonatal mortality rate and Infant mortality rate. The interested females from the village were trained as Arogydoot who provided homebased care. There was 70% reduction in the mortality rate. This further laid way for initiation of ASHA workers. The other activities undertaken were alcohol and tobacco control (Kakodkar, 2017).

2.School based model. It is possible to engage the children under one roof at the school. Also, any intervention would be easily accepted if given at the school, which is there area and the children are comfortable in that setting. The teachers can be engaged

for reinforcement and since they are the role models, it will be easy to mould the children. Preventive programs of oral health can be conducted at the school like: Oral health education, pit and fissure program, tobacco preventive and cessation program, toothbrushing program and oral screening program.

3.Workforce model. In this model, on one side, integration involves physicians and nurses screening—and treating—patients with dental needs and on the other side , it empowers dentists and other dental professionals to screen patients for non-dental medical problems such as throat cancer . This way, with whatever workforce available maximum health care is provided.

4.Allied health professional model. Allied health professionals like ASHA workers and the anganwadi workers are involved with the delivery of health or related services pertaining to the identification, evaluation and prevention of diseases and disorders. They carry out duties like aiding in breast feeding and complementary feeding, instituting immunization and supplementary nutrients, identifying childhood disability and childhood blindness. These allied workers can be trained and empowered to become oral health guides and also render oral health care preventive and educative services. Indigenous health workers are in a unique position to deliver culturally competent oral healthcare because they have a contextual understanding of the needs of the community. Literature has shown that empowering the anganwadi worker to become oral health guide can be beneficial (Kakodkar *et al.,* 2015).

5.Mobile Dental Service model Mobile and portable dental units are an effective and efficient way to take the sophisticated dental services to the doorsteps of the rural masses, school premises and urban slums through optimal utilization of dental institutions, dentists and dental auxiliaries (Ganavaidya, 2014). As per the Dental Council of India Guidelines, every dental college should adopt a village and possess one mobile dental van. There are 313 dental colleges in India (DCI) and hence with the mobile dentistry they will be able to provide services to the needy in the nearby remote areas. In a country like India where there is mal distribution of dentists, the mobile dental clinics can be used effectively as an alternative system of delivery of oral health care (Jayprakash *et al.,* 2002)

6.Integrated network: Two examples are cited here, in which service is provided by integrated network of the systemic and oral health.

a. **Immunization with Oral Examination:** Integrating the Oral polio drops activity with oral examination can be easily done by the allied health professional through a very simple Lift Your Lip program. After giving the drops the worker can check the oral cavity of the child for any oral disease or abnormality.

b. **The Fit for School (FIT)** programme integrates school health and Water, Sanitation and Hygiene (WASH) interventions. The handwashing and the toothbrushing group activity can be picked up from this program for implementation in the schools of the remote rural areas. This will involve a group of children who will wash their hands

and brush their teeth together. Doing this activity daily will inculcate a good practice among them. In areas, where there is shortage of water or no proper water system infrastructure the tippy tap system can be instilled. The tippy tap activity has helped the children in a remote area in India (Shukla, 2018). The tippy tap can be generated very easily. Materials used: 5-L unused oil can, roadside three wood sticks, and unused rope of variable length. The children would step on the stick lying on ground, which pulled the can downward and, in this way, the water from the can be used for handwashing. A soap is tied parallel to the can. The tippy tap and handwashing intervention was tested at an anganwadi in India for a period of two months and it was concluded that the children developed handwashing habit before every meal (Shukla, 2018). The group toothbrushing habit can also be effectively implemented in the school. Construction of the common water facility for group activity can be easily done (Figure 1).

7. Oral health promotion through the use of traditional methods

Use of traditional methods like cleaning the mouth with chewing sticks (mango, neem/ miswak, babul, guava, etc), tongue cleaning (coconut leaf, togue cleaner made of steel) and mouth washes (herbal products or Oil pulling) have shown good results in the oral cavity (Baloor, 2014) and are referred to as complementary or alternative medicine. Traditional medicine shows effects in reduction of decay, oral malodor, bleeding gums, dryness of throat, cracked lips and is effective for strengthening teeth, gums and the jaw.

Figure 1: Group toothbrushing program in school

Conclusion

Based on the integrated methods quoted in this article, different methods or combination can be implemented for the upliftment of the oral health of the indigenous people. Probably they disease and health condition which are peculiar to the tribes and also their unique medicinal methods. These people are less explored and are not open into the normal system. Efforts have to be taken to explore their way of living, their health profile and the folk claims.

Future Recommendation:

a. Strengthen the allopathy system of medicine in tribal areas with the extension of the three-tier system of village health workers, auxiliary nurse mid-wife and primary health centres.
b. Validate identified tribal remedies (folk claims) used in different tribal areas.
c. Encourage, document and patent tribal traditional medicines.
d. Promote cultivation of medicinal plants used by them.
e. Promote the formation of a strong force of tribal village health guides through regular training-cum-orientation courses.
f. Strengthen research into diseases affecting tribal and initiate action programs.

Table 1 Details of studies in the literature regarding the oral health problems among the indigenous people in India.

Author (Year)	Aim of the study (sample size)	Results	Conclusion
Kumar *et al*. (2009)	Assessed the oral health status of the Bhil tribal population of Southern Rajasthan (n=1590)	Mean DMFT and DMFS scores were 5.34 ±6.48 and 18.94±35.87. Shallow pockets were prevalent in 40% and deep pockets among 11.6%.	High prevalence of periodontal disease and poor oral hygiene.
Kumar *et al.* (2016)	Assessed the oral health status and treatment needs of Santhals residing in Dhanbad, Jharkhand. (n=921)	DMFT scores among 35–44 and 65–74 years old were 5.21 ± 2.34 and 7.42 ± 4.29 respectively. Used twigs to routinely clean their teeth.	Poor oral hygiene and periodontal status was seen among the tribes.
Valsan *et al.* (2016)	Assessed oral health status and treatment needs of Paniya tribe in Kerala(n=420)	76.9% had periodontal disease. Tooth brushing was reported by 55.5% . Paan chewing, with tobacco or without tobacco, habit was reported by 89.3%. Mean sextant of 2.30-2.55 had calculus. Caries prevalence was 40%. DMFT in the 35-44 years age group was 1.52±1.95 and in 65-74 age group it was 18.47 ± 13.10.	Oral disease burden is very high in Paniya tribes
Vijaykumar *et al.* (2017)	Assessed the oral health status and treatment needs among Sugali tribes.(n=820)	80% had tobacco habits. 49% had dental fluorosis. 10% had shallow pockets and 13% had deep pockets. Mean DMFT for males was 6.03 ± 2.35 and for females was 5.78 ± 2.55.	The tribes were characterized by a lack of awareness about oral health, deep-rooted dental beliefs, high prevalence of dental fluorosis, periodontal disease, dental caries and lack of previous dental care, high treatment needs, and limited access to oral health services.
Shrivastav *et al.* (2018)	Assessed the oral hygiene and periodontal status in the primitive tribe group of Bharias in Patalkot, Madhya Pradesh. (n=462).	OHIS= 2.56 ± 1.36. 35.4 % had periodontal pocket > 6mm and 27.9% people had attachment loss of 6-8mm	Higher prevalence of periodontal diseases and poor oral hygiene status in Bharia people can be attributed mainly to their difficult terrain, isolation, very low literacy level, socioeconomic status, and cultural practices.
Asif *et al.* (2019)	Assessed the oral hygiene practice, oral hygiene and periodontal status of two tribes residing in Bhadrachalam, Telangana (n=1000)	Koya group: OHI-S = 2.56 ± 0.82, 32.6% used toothbrush, 37.4% used twig and 17.6% finger. Mean sextant of 4.11 had calculus and 0.51 shallow pockets. Lambada group: OHIS=2.51 ± 0.93 , 46.4% used toothbrush, 30% used twig and 9.4% finger. Mean sextant of 4.37 had calculus and 0.58 had shallow pockets.	Oral hygiene practice was poor and periodontal status was compromised.

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