Original Research

Oral Hygiene Practices and Oral Health Status in Rural India

AUTHORS: RAJENDRASINH RATHOD[1], JAYESH PARIKH[2]

Abstract

About 72% of the Indian population resides in rural areas. The rural population in developing countries like India, has minimal or no access to private dental health sector. Along with financial up gradation and self-sufficiency of villages, personal health care attitudes of rural population also must be improved in order to create a healthy India. Thus, the present survey was undertaken aiming at finding out the oral health status and its association with oral hygiene habits of rural population in various states of India.

Material and methods : They survey was conducted in various villages of total 23 states of India for the duration of 2 years. In every village, free dental check-up camp was organised for the benefit of rural population. The demographics and oral hygiene aid were recorded each participant of the survey. Oral hygiene status of each individual was assessed with simplified oral hygiene index. The results obtained were subjected to statistical analysis.

Results : It was observed the largest part of survey population in each state reported the use of brush and paste as a method of oral hygiene maintenance (77.9%, n=3902). Although, considerable population from rural areas continues to use finger for teeth cleaning (10.2%, n=512). Many subjects also reported the use of datum (8.5%, n=428) and brush with dantmajan (3.3%, n=164) as oral hygiene aids. It was also found that maximum number of subjects included in survey showed fair oral hygiene (46.7%, n=2338). Whereas, there was a slight difference in number of people showing poor oral hygiene (27%, n=1353) and good oral hygiene (26.3%, n=1315). Pearson chi-square test was applied to find out significant association between oral hygiene practice and oral hygiene status. It showed that the association between oral hygiene practice and oral hygiene status is significant.

Conclusion: The current survey suggested that oral hygiene habits, oral health awareness and knowledge level among rural public needs to be improved. Village population should be informed and motivated about right methods of oral hygiene maintenance.

Key words : Awareness, India, Oral hygiene, Rural, States, Survey

Introduction:

As the Father of our nation Mahatma Gandhi rightly puts it “The future of India lies in its villages. If the village perishes India will perish too.” About 72% of the Indian population resides in rural areas with minimal or no access to private dental health sector. Along with financial up gradation and self-sufficiency of villages, personal health care attitudes of rural population also must be improved in order to create a healthy India. It is of utmost importance that the rural population of India needs to be given a lot of attention in oral and dental health education programs in an effort to reduce the rural urban disparities in terms of health.1

Poor oral hygiene practices lead to dental caries and periodontitis. The attainment of oral health which is an essential component of general health and wellbeing is impeded by multiplicity of barriers which include the cost, poor access due to workforce shortages, and inequitable distribution of the dental workforce, undue fear, anxiety and self-blaming, low oral health literacy and differing oral health beliefs, negative oral health attitudes, and poor oral health behaviours. Variations exist in oral health practices and the prevalence of oral diseases (periodontal diseases, treatment needs, and dental caries) in urban and rural areas.1,2,3 In developed countries, rural dwellers are more likely to have untreated dental caries than non-rural dwellers whereas rural dwellers have lower prevalence of dental caries, more severe periodontal scores, and poorer oral hygiene than urban dwellers in developing countries.1,2,3

Oral hygiene awareness and practices differ from country to country and community to community. Unfortunately little such epidemiological data is available for India where villages still comprise more than two thirds of the country4.

Apart from the conventional and ideal methods of cleaning the teeth, it has been observed that there are various dental myths among the rural population of India at large. The oral hygiene practices observed among rural dwellers include using salt with finger, use of neemstick, charcoal, tooth powder with finger and even some resort to using brick powder with finger.5 It has been observed that oral hygiene and oral health status has mostly remained as an ignored and unrealized major social problem.

The present study aims to provide a broader view of the oral health status of rural India through an elaborate survey that covers villages in most of the Indian states. Through this study, efforts were made to introduce a suite of preventive measures that would have the potential to significantly reduce the burden and to help bridge the gap between research, development and public awareness. The mission of this study was to reach remote villages in various parts of India and spread awareness about the importance of maintaining their oral hygiene using tooth brush and dentifrices along with ill effects of deleterious oral habits such as use of tobacco.

Material and Methods :

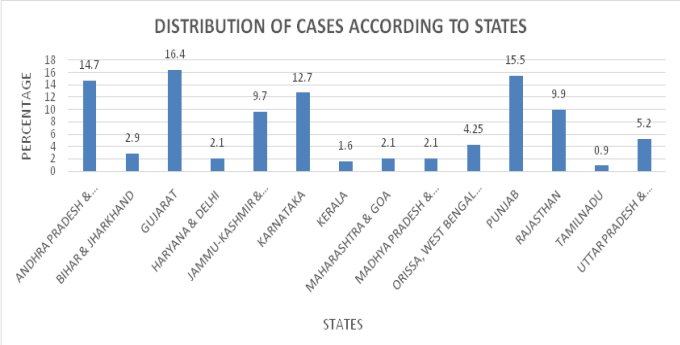
The survey was conducted during June 2014 to June 2016 (including the period of pilot study), in villages of various Indian states (Total 23 states). At every village survey centre a “dental check-up and treatment camp” was organized free of cost with necessary permissions of village authorities. A mobile dental van or ambulance served as a portable dental clinic, where clinical oral examination, emergency treatments and other non-invasive procedures such as “atraumatic restorative treatment” etc were performed. The data regarding, oral hygiene practice, occupation, food habits and tobacco/areca nut habit was specially recorded for

each subject participating in the survey. Thorough oral examination was performed and oral hygiene status was assessed in each case by performing S-OHI (Simplified Oral Hygiene Index). The results obtained were subjected to statistical analysis.

Results:

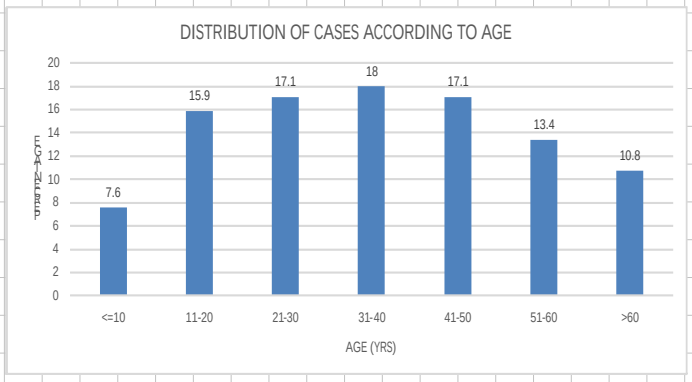
During the present survey, maximum numbers of patients were examined in the state of Gujarat (n = 818,16.4%). Least number of cases were examined in Tamilnadu (n = 47, 0.9%, Figure-1).

Figure 1: Distribution of cases according to status



It was observed that maximum number of subjects in oral health survey were in 4th decade of life (n = 902, 18%). Next in frequency were the people from 3rd decade (n = 858, 17.1%) and 5th decade (n = 855, 17.1%) of life. Least number of cases were from the age between 1 year to 10 years (n = 382,7.6%, Figure-2).

Figure 2: Distribution of cases according to age

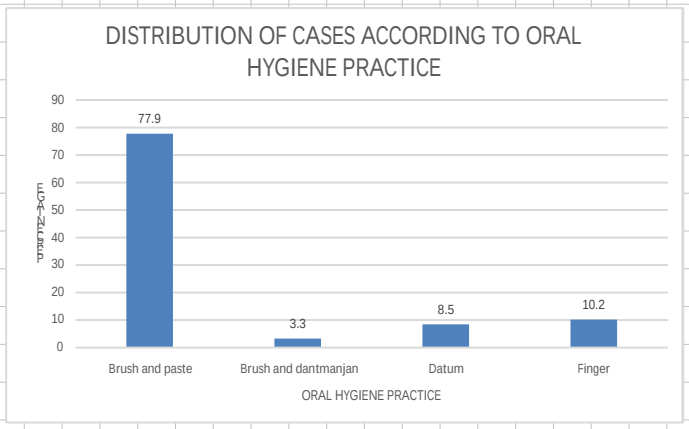


More number of male patients were included in the survey (n = 2884, 57.6%). Whereas, females constituted only 42.4% (n = 2122) of the survey population (Figure-3).

Figure 3: Distribution of cases according to gender

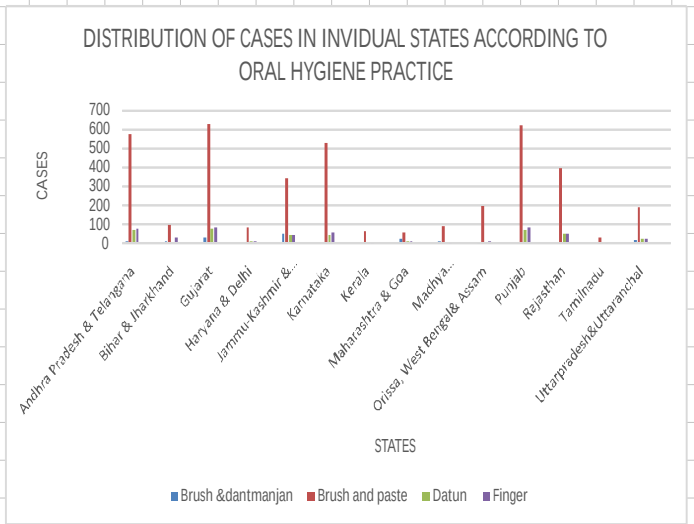
Analysis of oral hygiene practices among the rural population showed that a largest part of survey population reported the use of brush and paste as a method of oral hygiene maintenance (77.9%, n = 3902). Although, considerable population from rural areas continues to use finger for teeth cleaning (10.2%, n = 512). Many subjects also reported the use of datum (8.5%, n = 428) and brush with dantmajan (3.3%, n = 164) as oral hygiene aids (Figure-4).

Figure – 4: Distribution of cases according to oral hygiene practice



It was evident that brush and tooth paste is used by majority of the population in each state as oral hygiene practice. Among the population using brush with dantmanjan, majority of the subjects were from Maharashtra and Goa (20.8% of the state population i.e. 22 out of 106). Similarly, Tamilnadu ranked first for the usage of datum with frequency of 12.8% of the state population (6 out of 47). Additionally, Uttar Pradesh, Uttaranchal (10.7%, 28 out of 262) and Maharashtra and Goa (10.4%, 11 out of 106), and Rajasthan (10.4%, 52 out of 498) also showed considerable subjects using datum as an oral hygiene practice. Among the subjects using finger for maintenance of oral hygiene, majority were from the states of Bihar and Jharkhand (23.6% of the state population i.e. 34 out of 144). Tamilnadu also showed considerable number of subjects brushing with finger (14.9%, 7 out of 47, Figure-5).

Figure- 5: Distribution of cases in individual states according to oral hygiene practice



It was found that maximum number of subjects included in survey showed fair oral hygiene (46.7%, n = 2338). Whereas, there was a slight difference in number of people showing poor oral hygiene (27%, n = 1353) and good oral hygiene (26.3%, n = 1315, Figure-6).

Figure-6: Distribution of cases according to oral hygiene status (oral hygiene index)

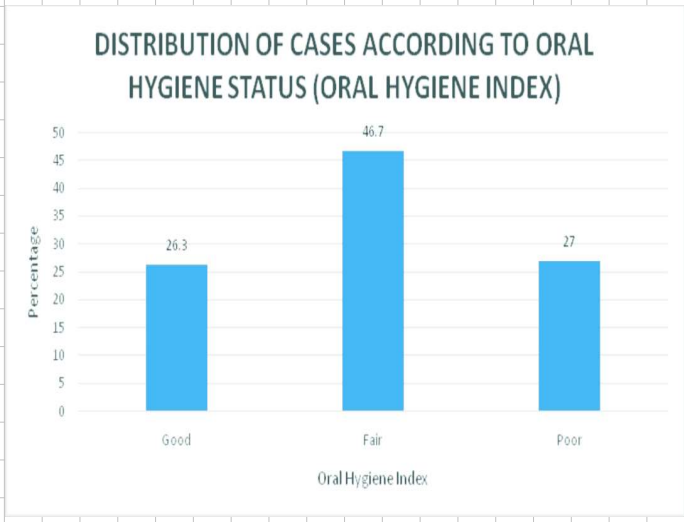
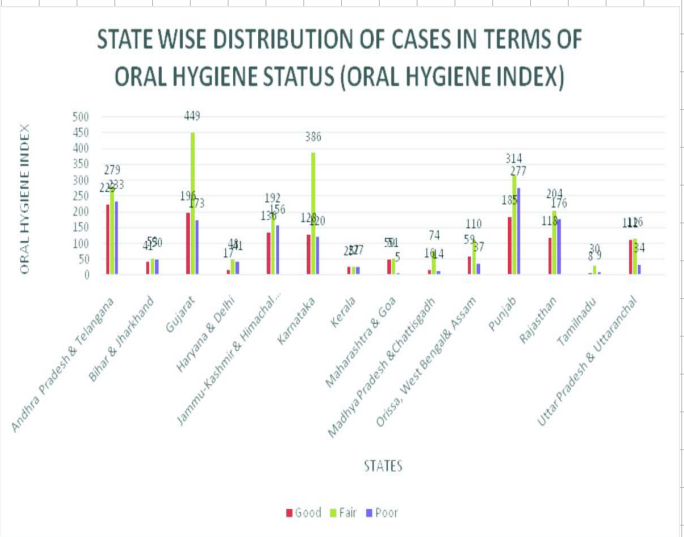


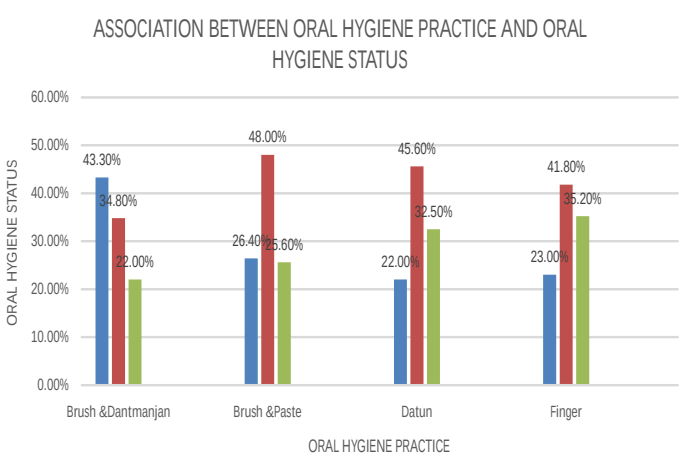
Figure-7: State wise distribution of cases in terms of oral hygiene status (oral hygiene index)



Assessment of oral hygiene index in rural population of various states of India showed that maximum number of subjects having good oral hygiene were from the states of Maharashtra & Goa (47.2%, 50 out of 106). While majority of the rural population showed fair oral hygiene, Haryana & Delhi (38.7%, 41 out of 106), Punjab (35.7%, 277 out of 776), Rajasthan (35.3%, 176 out of 498) and Kearal (34.2%, 27 out of 79) were the states where a large number of subjects landed under the category of poor oral hygiene (Figure-7).

It was found that maximum number of subjects, among those using brush and dantmanjan showed good oral hygiene (43.3%, 71 out of 164). The population with use of finger for oral hygiene maintenance contributed maximum for the group of poor oral hygiene (35.2%, 180 out of 512). Majority of the subjects using brush and paste showed fair oral hygiene (48%, 1872 out of 3902, Figure-8)

Figur-8: Association between oral hygiene practice and oral hygiene status



Pearson chi-square test was applied to find the significant association between oral hygiene practice and oral hygiene status. It showed chi-square value as 54.131. Probability value P was found to be < 0.001, which suggests that the association between oral hygiene practice and oral hygiene status is significant (Table-1).

Table 1: Chi-square test for assocaition between oral hygiene practice and oral hygiene status

Chi-Square Test			
	Value	**Df**	**P-value**
Pearson Chi-Square	54.131	6	<0.001

Discussion:

Cross-sectional studies are important in estimating the prevalence of a disease in the population. The present cross-sectional study was conducted with the aim to find out the oral hygiene status in association with oral hygiene practice of people from rural india.

India comprises of population, which is divided in various states. Each Indian state also has different regions, districts, cities, towns and villages. The culture, beliefs and customs of rural India considerably vary from one region or one state to another. The influence of same can be observed in people's beliefs pertaining to maintenance of general and oral health. Thus oral hygiene practices in different rural areas differ. This forms a great impact on oral health of rural population of India. In the era of 21st century also, many of the rural public continue to use ancient or indigenous preparations for oral hygiene maintenance.

According to the results obtained in the present survey, a largest part of the population of rural India has reported the use of brush and dentifrice as an oral hygiene aid. This may be because of increased awareness regarding maintenance of general and oral health in the population. Another fact to be noted here is that, cleaning the teeth with brush and paste has become a part of routine life worldwide. Brushing teeth is considered as a synonym of oral health awareness among general public. Various types of indigenous aids were used in older India, and today also a considerable number of people continue to use such natural resources for maintenance of oral hygiene. As seen in the present

study, 8.5% of the rural population have reported the use of datum as an oral hygiene aid. A big part (10.2%) of the rural public does not use brush to clean the teeth. This may be because; a considerable part of rural population in India is still uneducated or negligent regarding maintenance of oral hygiene. Dantmanjans; though highly abrasive products, are still in use in rural areas. In India, considering the orthodox mind-set, especially of elderly people, dantmanjans with labels of "Herbal" and "Ayurveda" are produced and sold on a large scale. Thus, 3.3% of the survey population in present study reported the use of brush and dantmanjan for maintenance of oral hygiene. Where the rural population is showing increased awareness about oral hygiene maintenance, rural public in few states of India, such as Bihar and Jharkhand showed maximum number of people, who do not use any oral hygiene aid and clean the teeth only with finger. This may be a combined effect of poor health awareness and poor socioeconomic status of the population of these states. This finding can be explained by the study conducted by Sogi et al, which showed a relationship between oral health with socioeconomic status.6

It has been seen in many studies that oral hygiene practice of an individual correlates with oral hygiene status. In concordance with these studies, the present survey has shown positive correlation between these two. A study conducted by Manish et al (2009) showed that Jain monks have poor oral hygiene because, as a part of their religion, many individuals avoid brushing their teeth during fasting.7 Present study shows similar results and correlation with oral hygiene practice and oral hygiene status.

Oral health is seen as a very low priority in the developing countries like India (especially in the rural areas), due to poverty, limiting resources available to the health sector, and the little assigned to the health sector are mainly directed towards life threatening conditions such as HIV/AIDS, tuberculosis, and malaria rather than oral diseases. The changing living condition, adoption of healthy lifestyle, improved self-care practices, effective use of fluorides, and establishment of preventive oral care programs which have improved oral health status among adults in developed countries are dominantly deficient in developing countries with worse scenarios in rural areas. Considerable numbers of rural population still continue to use indigenous preparations for oral hygiene maintenance e.g. finger, dantmanjan and datun.8 This survey has suggested that there is a significant relationship between oral hygiene practice and oral hygiene stratus. Thus, adopting a good method of oral hygiene maintenance results in good oral hygiene status. Dental health is related with life-style factors as well as socioeconomic status of the individual.9 Rural population is deprived in oral hygiene awareness and a targeted programme to infuse appropriate dental practices in them

Is necessary.10 The current survey suggested that oral hygiene habits, oral health awareness and knowledge level among rural public needs to be improved. Village population should be informed and motivated about right methods of oral hygiene maintenance. Exploring the links between oral health condition and personal and social outcomes promotes better appreciation of oral health. Further, it provides opportunity to identify interventions to minimize the consequences of oral diseases by oral health awareness programmes.

References

1. Azodo CC, Amenaghawon OP. Oral hygiene status and practices among rural dwellers. Eur J Gen Dent 2013;2:42-5.
2. Adegbembo AO, Nadeef MA. National survey of periodontal status and treatment need among Nigerians. Int Dent J 1995;45:197-203.
3. Akhionbare O, Ojehanon PI, Ufomata DO, Jeboda SO. Periodontal treatment needs of urban and rural populations in Edo State, Nigeria. Nig Dent J 2007;15:137.
4. Singh SV, Akbar Z, Tripathi A, Chandra S, Tripathii A. Dental myths, oral hygiene methods and nicotine habits in an ageing rural population: An Indian study. Indian Journal of Dental Research 2013;24(2):242-244.
5. Nitika Jain, DipikaMitra, K. P. Ashok, JyothiDundappa, SwetaSoni, Sameer AhmedOral hygiene awareness and practice Among patients attending OPD at Vyas Dental College and Hospital, Jodhpur. Journal of Indian Society of Periodontology 2012;16(4):524-528.
6. Sogi GM, Bhaskar DJ. Dental caries and oral hygiene status of school children in Davangere related to their socio-economic levels: An epidemiological study. J Indian SocPedoPrev Dent. 2002; 20:152–7.
7. Jain M, Mathur A, Kumar S, Duraiswamy P, Kulkarni S. Oral hygiene and periodontal status among TerapanthiSvetambar Jain monks in India. Braz Oral Res. 2009; 23: 370-376.
8. Jain N, Mitra D, Ashok K P, Dundappa J, Soni S, Ahmed S. Oral hygiene awareness and practice among patients attending OPD at Vyas Dental College and Hospital, Jodhpur. J Indian Soc Periodontol 2012; 16:524-8
9. Kumar S, Nigam A, Choudhary A, Tadakamadla J, TibdewalH, Duraiswamy P, et al. Influence of lifestyle on oral healthbehavior among rural residents of Udaipur district, India. MedOralPatol Oral Cir Bucal 2011; 16: e828-e833.
10. Singh SV, Akbar Z, Tripathi A, Chandra S, Tripathi A. Dental myths, oral hygiene methods and nicotine habits in an ageing rural population: An Indian study. Ind Jr Dent Res. 2013 Mar 1;24(2):242.

PARTICULARS OF CONTRIBUTORS :
1) Prof and Head, Department Of Oral Pathology & Microbiology, M P Dental College, Vadodara.
2) Dean, Ex. Prof and Head, Department of Periodontology, Govt. Dental College, Jamnagar.

ADDRESS FOR CORRESSPONDENCE:
Dr. Rajendrasinh Rathod
Professor & Head,
Department of Oral Pathology & Microbiology,
Dean, M P Dental College, Vadodara.

Source of Support : NIL
Conflict of Interest : NOT DECLARED
Date of Submission : 10-05-2015
Review Completed : 08-11-2015