

## Dental Health Myths and Misconceptions among Yanadi Tribe of Gonepalli Village, Nellore District, India: A Cross-Sectional Study

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### ABSTRACT:

**Aim:** To understand the myths and misconceptions of Yanadi tribal community living in Gonepalli village of Nellore district in relation with their beliefs and traditional oral practices which are rooted in their culture.

**Methodology:** This descriptive cross-sectional study was carried out in December 2014. The information was collected through a specially designed questionnaire in a door to door survey among the tribal families. Significance between the variables was determined using Fisher's exact test.  $P < 0.05$  was taken as statistically significant. The data were analyzed using the Statistical Package for the Social Sciences, (SPSS version 20).

**Results:** In a total sample of 233 (100%), the males constitute 37.34% (87), and the females constitute 62.66% (146). Majority of the participants were in the age group of 35-50 years, 31.3% (73). Many believed that there are worms inside the decayed tooth (97%), removing tooth in a pregnant woman is dangerous (96.6%) and removal of upper tooth affects vision (92.7%). Correlation between knowledge score and myths score was statistically significant ( $P < 0.05$ ). Those who had a better knowledge score had a lower myths score.

**Conclusion:** Yanadi tribal population of Gonepalli village, Nellore district are characterized by lack of dental care and poor oral hygiene practices. The prevalence of myths and misconceptions towards dentistry is high. Traditional practices were followed more by the older age group.

**Keywords:** Culture, Knowledge, Myths, Misconceptions, Tribal

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### I. INTRODUCTION

The tribal people of India are popularly known as *adivasis* which means original dwellers and also called as *girijans*, people of hills who constitute 8 percent of the total population of India according to the 2001 Census. The tribes are scattered all over the country, and they are mostly confined to the hilly and forested areas for centuries in a relative isolation [1]. Each of the tribes is known to have adopted itself to the local physical environment, developing its own health practices. Their contact with outside world began with the Colonial administration though the British followed the isolationist approach towards the tribal population. Their contact with the non-tribes increasingly intensified after independence. The integrationist policy of the independent India has exposed them to modern medical facilities which gradually weaned them from the traditional health practices even though certain beliefs are strongly held by them.

Andhra Pradesh state is the homeland for about 33 scheduled tribes [1] living in 8 districts, which form about 6.6 percent of the State's population. Koya, Banjara/Lambada, Konda reddy, Gond, Chenchu, Yerukala, Yanadi, Savara, and Jatavu are the major ones [2, 3]. Yanadis are one of the under privileged scheduled tribes mainly living in coastal part of Andhra Pradesh state. It is originated from the Sanskrit word *anadi*. The British ethnographer E. Thurston (1909) believed that, the Yanadis have originally migrated from the Sriharikota Island in Nellore District and later in the era of British they migrated to other parts of Nellore, Chittoor, and Prakasam districts. However, Raghavaiah (1964) a lawyer and philanthropist who did yeomen service for the upliftment of Yanadi believed that Yanadi were the original inhabitants of Rapuru hills who are none but Chenchu tribe that came down the hills of Nallamala forest range.

As per 2011 Census report, Yanadi population has increased from 3, 95,739 in 2001 to 5,78,205 [4]. Yanadis are treated as lowest social group and are placed just above the scheduled castes in social hierarchy [5]. Nellore district has the highest population of Yanadi in the state and in the district they are highly concentrated in the southern Mandals and hill ranges in Rapuru Mandal. A large majority of this tribal community continues to live in its centuries old lifestyle, uninfluenced by modern civilization, and in isolated places like Rapuru hilly forests it has limited access to any means of transport. In a village called Gonepalli which is located between Rapuru and Penchalakona, there are about 500 Yanadis distributed in about 100 families which are located in



## II. METHODOLOGY

After obtaining approval from the institutional ethics committee, Narayana Dental College and Hospital, Nellore, a descriptive cross-sectional study was carried out in December 2014 by organizing a door to door survey among family of Yanadi tribal community living in Gonepalli village. The study included all willing participants in the sample and such of them gave oral consent before participating in the study.

The instrument for data collection for the present study was a specially designed self-administered questionnaire. It was tested for face validity to assess cross-cultural sensitivity when translated to local language by bilingual experts. It was validated by checking Content Validity before conducting the pilot study using content validity index with Davis criteria 1992 {1- not relevant, 2- somewhat relevant, 3- quite relevant, 4- highly relevant}. It was given to four experts and their responses were recorded, item and scale content validity was checked and Item Content Validity Index score (Lynn 1986) was 1.0 and 0.9 for two experts respectively and Scale Content Validity Index score (Waltz & Bausell 1981) was 0.9 for both experts which was acceptable.

A pilot study was conducted among 20 subjects to assess the reliability of questionnaire by using test-retest design. It was administered to same subjects twice with seven days apart. The kappa value is 0.87. Reliability was assessed for all the four sections in the questionnaire. The Croanbach's alpha statistics was 0.83 which indicated significant correlation.

The questionnaire consisted two sections: 1. Regarding knowledge towards oral health and 2. Regarding myths and misconceptions related to the field of dentistry. The frequency of the responses for all the questions was determined. Correlation between knowledge score and myths score was determined using Fisher's exact test.  $P < 0.05$  was taken as statistically significant. The data was analyzed using the Statistical Package for the Social Sciences, (SPSS) version 20.

## III. RESULTS

In a total sample of 233 (100%), males constitute 37.3% (87) and females constitute 62.7% (146). Majority of the participants are in the age group of 35-50 year i.e., 31.3% (73). All the participants belonged to either upper-lower class, 61.8% (144) or lower class 38.2 % (89) according to Kuppuswamy's socio-economic scale.

Table 3 shows the knowledge of the participants towards oral health. Different myths and misconceptions that the participants of the study have related to dentistry are listed out in Table 4, and among them 226 (97.0%) believed that there are worms inside the decayed tooth, 225 (96.6%) believed that removing tooth in a pregnant woman is dangerous and 216 (92.7%) believed that removal of upper tooth affects vision. The questions related to myths and misconceptions were asked only to those who had the habit of tobacco use. Among the participants only 40.8% (95) had the habit and a majority of them i.e., 37.3% (87) believed that tobacco relieves tooth pain and 38.2 % (89) believed that tobacco keeps gum problems away.

For comparison, the knowledge score was divided into  $<4$ , 5-6 and  $>7$  based on the answer 'yes' given by each subject. Those who answered less than four questions as 'yes' were included in the  $<4$  group, similarly for 5-6 and  $>7$ . Myths score was also divided in the same way into  $<9$ , 10-16 and  $>16$ . Fisher's exact test showed a statistically significant correlation between knowledge score and myths score. Those who had a better knowledge score had a lower myths score.

**Table 1:** Distribution of study participants according to age and gender

Age group	Sex		Total
	Male	Female	
5-10 Years	12(5.15%)	10(4.25%)	22(9.4%)
11-15 Years	9(3.86%)	18(7.74%)	27(11.6%)
16-24 Years	5(2.14%)	12(5.16%)	17(7.3%)
25-34 Years	17(7.29%)	38(16.31%)	55(23.6%)
35-50 Years	29(12.44%)	44(18.86%)	73(31.3%)
>50 Years	15(6.43%)	24(10.27%)	39(16.7%)
Total	87(37.34%)	146(62.66%)	233(100.0%)

**Table 2:** Distribution of study participants according to age and socioeconomic status

Age group	Socio Economic Class		Total
	Upper lower class	Lower class	
5-10 years	18(12.5%)	4(4.5%)	22(9.4%)
11-15 years	21(14.6%)	6(6.7%)	27(11.6%)
16-24 years	10(6.9%)	7(7.9%)	17(7.3%)
25-34 years	41(28.5%)	14(15.7%)	55(23.6%)
35-50 years	39(27.1%)	34(38.2%)	73(31.3%)
>50 years	15(10.4%)	24(27.0%)	39(16.7%)
Total	144(100.0%)	89(100.0%)	233(100.0%)

**Table 3:** Knowledge of the study participants towards oral health

Question	Yes	No
Oral health problems are as important as other health problems	211(90.6)	22(9.4)
General body health has relationship to oral health	144(61.8)	89(38.2)
It is important to look after your teeth	232(99.6)	1(4)
It is necessary to brush teeth after every meal	104(44.6)	129(55.4)
Regular tooth brushing prevents all tooth problems	191(81.9)	42(18.0)
Sugars promote tooth decay	227(97.4)	6(2.6)
Bleeding gums means diseased gums	118(50.6)	115(49.4)
Visiting a dentist can reduce dental problems	219(94.0)	14(6.0)
Do you visit the dentist often	1(0.4)	232(99.6)

**Table 4:** Myths and misconceptions related to dentistry among the study participants

Myth	Yes	No	Don't know
Clove relieves tooth ache	146(62.7)	87(37.3)	
Zandu balm relieves tooth ache	168(72.1)	65(27.9)	
Alum or slaked lime provides relief from mouth ulcers	69(29.6)	164(70.4)	
Swelling in the mouth is reduced by application of hot fermentation	72(30.9)	161(69.1)	
There are worms inside decayed tooth	226(97.0)	7(3.0)	
Teeth become stronger when cleaned with neem stick or salt	68(29.2)	165(70.8)	
A child becomes a witch if born with teeth	84(36.1)	149(63.9)	
Teeth at birth are bad omen to grandfather or uncle of the baby	138(59.2)	94(40.3)	1(0.4)
There is no relation between milk teeth and permanent teeth	211(90.6)	22(9.4)	
Removing tooth in a pregnant woman is dangerous	225(96.6)	8(3.4)	
Forwardly placed or spacing between the teeth is lucky	150(64.4)	83(35.6)	
Removal of upper tooth affects vision	216(92.7)	17(7.3)	
Professional cleaning of teeth causes loosening of teeth	94(40.3)	99(42.5)	40(17.2)
Oral health is in no way related to general body health	88(37.8)	145(62.2)	
Tooth problems are not serious and can be neglected	40(17.2)	193(82.8)	

**Table 5:** Myths and misconceptions related to tobacco among study participants

Question	Yes	No	Did not use tobacco
Tobacco relieves pain due to decayed tooth	87(37.3)	8(3.4)	138(59.2)
Chewing betel quid keeps gum problems away	89(38.2)	6(2.6)	138(59.2)
Chewing paan is good for oral health	45(19.3)	50(21.5)	138(59.2)
Nicotine does not cause harm to oral health	38(16.3)	57(24.5)	138(59.2)

**Table 6:** Correlation between knowledge score and myths score

		Myth score			Total	p-value
		<9	10-15	>16		
Knowledge score	<4	Count	4	17	7	<0.001*
		%	14.3%	60.7%	25.0%	
	5-6	Count	32	44	14	
		%	35.6%	48.9%	15.6%	
	>7	Count	85	24	6	
		%	73.9%	20.9%	5.2%	

Fisher's exact test

\*P<0.05 statistically significant

P>0.05 Non significant, NS

#### IV. DISCUSSION

The latter part of the twentieth century witnessed a transformation in both general health and oral health unmatched in history. Yet, despite the remarkable achievements in recent decades, millions of people worldwide have been excluded from the benefits of socio-economic development and the scientific advances that have improved healthcare and quality of life. Inequalities in oral health persist worldwide, mainly among the deprived populations. India has a low budget allocation to meet the general populations' oral health treatment needs, a high disease burden and a low literacy rate. All these factors increase the tendency to discover other treatment measures in the form of home remedies rather than consulting a professional dentist. Very scanty epidemiological data is available in this connection, where village communities still comprise more than two-thirds of the country's citizens [14].

There is a remarkable world-wide progress in the field of diagnostic, curative and preventive - medicine, still there are large population of tribal people living in isolation maintaining their traditional values, customs, beliefs and myths [15]. These myths may arise as either truthful facts or over elaborated accounts of historical events, as allegories or personifications of natural phenomena, or as explanations of ritual. They are

used to convey religious or idealized experience, to establish behavioural models, and to teach. Dental myths usually emerge from false traditional beliefs and non-scientific knowledge. This is embedded in the psyche of future generations over a period of time and thus, creates hindrance in the recognition of scientific and contemporary dental treatment [14].

Hence the present study carried out among the Yanadi tribe of Gonepalli village of Nellore district, India to provides baseline data on the myths and misconceptions about oral health and to determine the knowledge levels regarding oral health among the indigenous populations or poor populations or lower strata of the society, which would yield valuable information for planning, implementation and monitoring of preventive and curative oral health services and help improving the awareness and knowledge of this tribe and others as well about the preventive aspects of oral health.

All 223 subjects who were in age the groups 5-10 years, 11-15 years, 16-24 years, 25-34 years, 35-50 years and >50 years were approached for the study. Data were collected about knowledge, myths and misconceptions regarding oral health and socio-economic factors like income, education and occupation of the family apart from general information like individual's age and sex using a questionnaire. The study's subjects were approached in a door to door survey.

In the present study females constituted 62.7% which is on higher side, it might be due to the fact that it is a door to door survey which was conducted in day time when most of the men in the households went out for work. All participants in the study belonged to either upper lower class or lower class as per the economic category. Mandal S et al (2015) also found that the socio-economic status of the Santal tribe children in West Bengal was poor [16]. John JB et al (2015) showed the similar result that the parents of the tribal children when compared to the urban children in their socio-economic conditions [17].

Interestingly, the knowledge towards oral health was good among the Yanadi tribal community as the present study reveals. About 90.6% of them knew that oral health problems were as important as other health problems, 99.6% knew that it is important to look after their teeth, 97.4% knew that sugars promote tooth decay and 94.0% believed that visiting a dentist can reduce dental problems. Similar results were seen among Paniyan tribals of Kerela. The perceived importance of retaining the natural teeth was high among the Paniyan population [18]. This is in contrast with the beliefs of indigenous Chinese immigrants in UK who thought that it is natural to lose all their teeth as they get older [19].

Even though the knowledge towards oral health was good among the Yanadi tribal population, they still believed in certain myths relating to dentistry. Myths are part and parcel of everyone's lives; they are defined as stories shared by a group of people as reality which are a part of their cultural construction of world experiences. They have strong influence on the individual's life and their health seeking behaviour [20]. The results of the present study showed that 62.7% believed that clove relieves tooth ache where as 96% of the rural population of Bareilly district [14], 90% of the uneducated rural female folk of Rajasthan [21], 57.8% of subjects of Tehsil Sunam of Sangrur district of Punjab [12], believed in the same myth. In the present study only a few (29.6%) believed that alum provides relief from mouth ulcers where as in a study conducted by Tewari D et al in 2014 among rural population of Bareilly district 92% of them believed in this myth [14]. Nagaraj A et al in 2014 found that 92% of the uneducated rural female folk of Rajasthan that participated in their study believed that swelling in the mouth is reduced by application of hot fermentation [21], whereas only 30.9% of the Yanadi tribals in the present study believed in this myth. Majority of the study population in the present study believed that there are worms inside the decayed tooth (97.0%). Similar results (94%) were obtained in their study conducted by Tewari D et al in 2014 [18]. Some of the present study subjects (36.1%) believed that a child becomes a witch if born with teeth, similar beliefs were found in the study of Nagaraj A et al in 2014 [21].

Among the Yanadi 59.2% believed that teeth at birth are bad omen indicating befalling misfortunes for grandfather or uncle of the infant, contrary to this only 6.32% believed in this myth in a study carried out by Kumar S et al in 2013 [22]. This difference might be due to that fact that the study was carried out at Sree Siddhartha Dental College and Hospital, Tumkur district in Karnataka whereas the present study was carried out among the Yanadi tribal community of Gonepalli village. The myth that no relation exists between milk teeth and permanent teeth is present among many participants in the present study (90.6). In some other studies 43.6% responded in favour of the myth that milk teeth if diseased need no treatment as they will be replaced by permanent teeth [13], and 62% responded yes to the question 'Do you think that caries can spread?' [21]. Nearly all the study participants in the present study responded in affirmative when asked if they believed in the myth 'Removing tooth in a pregnant woman is dangerous (96.6%)', Similar observations (87%) were recorded in the study of Tewari D et al [14].

In the present study the myth 'Forwardly placed or spacing between the teeth is lucky' was believed by 64.4% of the study participants. Kochhar S et al found in their study that 45.9% believed in this myth [12], similar observations were recorded by Nasir Z et al (24%) [13] and Kumar S et al (11.05%) [22]. Among the participants in the present study 92.7% believed that removal of the upper tooth affects vision. Some other studies also stated that this myth was present among many people (Kochhar S et al., 2012 (49.6%) [12], Nasir Z

et al., 2014 (33%) [13], Tewari D et al., 2014 (89%) [14], Nagaraj A et al., 2014 (79%) [21], Kumar S et al., 2014 (35.26%) [22]). About 40.3% of the Yanadi tribals in the present study believed that professional cleaning of teeth causes loosening of teeth. Kochhar S et al., 2012 (65.3%) [12], Nasir Z et al., 2014 (33.0%) [13], Tewari D et al., 2014 (82%) [14], Nagaraj A et al., 2014 (66%) [21], Kumar S et al., 2014 (18.95%) [22] showed different response rates to that same myth. Only 37.8% of the study population thought that oral health is in no way related to general body health and 17.2% of them thought that tooth problems are not serious and can be neglected, whereas only 17% and 43% of the study population believed those myths respectively in the study conducted by Tewari D et al [14].

Majority of the present study population did not use tobacco in any form (59.2%). Among those who did use, majority of them thought it relieved pain of the decayed teeth and gums and it wasn't harmful to the oral cavity. This reflects that the Yanadi tribal community of Gonepalli village didn't have proper knowledge regarding the harmful effects of tobacco on the oral cavity and important steps are to be taken by the public health dentists and the government to improve awareness regarding the adverse effects of tobacco in any form. Similar results were noted in some other studies (Tewari D et al., 2014, Kumar S et al., 2014, Singh SV et al., 2013) [14, 22, 23].

Though many myths reviewed above are seemingly innocent, they are high and have been perpetuated for decades among the tribals. The best means to counter the myths according to evidence based dentistry is to improve the dental professionals' knowledge regarding patient counselling and aids in clearing misconceptions to various oral health issues. The onus is on the dental community and the administrative machinery to strive for the following—dental awareness programs specially targeting the tribal population vis-a-vis their relative lack of mobility and mental rigidity. Setting up subsidized dental care facilities close to the tribal population, mobile dental clinics and dental camps can play a crucial role in uplifting the oral health of this population<sup>(14)</sup>. The knowledge regarding oral health was quite good in the present study population but still they don't have the habit of visiting the dentist regularly. The barriers for this negligence should be identified and dental health education campaign is needed for this community to change their oral health seeking behaviour.

Although several studies have reported on the knowledge, myths and misconceptions regarding oral health in urban and rural populations of India there is scarce literature on the dental status of tribal population. Hence, further research is needed to investigate the oral health of the various tribal populations of India. In addition, a longitudinal study in this population will aid in assessing the outcomes of interventions implemented by the government and other organisations, to improve the oral health of the population.

## V. CONCLUSION

In conclusion, Yanadi tribal population of Gonepalli village, Nellore district are characterized by high prevalence of myths and misconceptions towards dentistry. Their knowledge towards oral health is better when compared to other tribal populations. Those who had better knowledge score had a lower myths score.

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